00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: 100 YR

00BREAK00

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**********************************************

C
T1      BRIDGEPORT  TOWNSHIP, PROJECT NO. 8558
T2      CASS RIVER
T3      CASS RIVER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.0         0.0       0.0       0.   595.000   0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    1.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   150.000   200.000   0.0       0.0       0.0       0.0       0.0       0.0       0.0

NC      0.050     0.050     0.040     0.200     0.400     0.0       0.0       0.0       0.0       0.0
QT      6.000 14250.000 19820.000 22030.000 27270.000 14160.000 22030.000     0.0       0.0       0.0

        SECTION A  4.7 RIVER MILES FROM MOUTH

X1  24860.000    27.000  4495.000  4596.000 24860.000 24860.000 24860.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  2200.000     0.0  5300.000     0.0       0.0       0.0       0.0
GR    595.000  2100.000   595.000  2300.000   590.000  2500.000   585.000  2530.000   585.900  4000.000
GR    585.800  4226.000   587.100  4425.000   581.100  4430.000   581.200  4455.000   584.100  4462.000
GR    583.700  4495.000   581.200  4497.000   578.100  4520.000   577.500  4540.000   577.100  4560.000
GR    581.200  4581.000   584.100  4591.000   592.500  4596.000   595.700  4780.000   595.200  4816.000
GR    595.000  5130.000   590.000  5240.000   590.000  5380.000   595.000  5530.000   595.700  5514.000
GR    595.100  6178.000   600.200  7018.000     0.0       0.0       0.0       0.0       0.0       0.0
NC      0.080     0.050     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        SECTION B

X1  28610.000    24.000  2997.000  3123.000  1720.000  1800.000  3575.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  2200.000     0.0  4860.000     0.0       0.0       0.0       0.0
GR    500.000   630.000   595.000  2100.000   592.500  2300.000   590.000  2460.000   585.000  2700.000
GR    580.000  2810.000   580.000  2950.000   588.500  2997.000   581.700  2998.000   574.700  3030.000
GR    578.600  3060.000   580.100  3090.000   581.700  3117.000   587.900  3123.000   586.700  3285.000
GR    587.900  3580.000   589.700  3794.000   592.500  4150.000   585.000  4360.000   590.000  4540.000
GR    595.000  4700.000   600.000  5000.000   600.000  5130.000   597.000  5500.000     0.0       0.0
NC      0.070     0.100     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        SECTION C

        HIGH WATER  MARK = 594 FT FOR Q=14150 CFS 3-5-75

X1  30735.000    26.000  4309.000  4440.000  1380.000  1430.000  2200.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  2400.000     0.0  4480.000     0.0       0.0       0.0       0.0
GR    600.000   630.000   595.000  1450.000   600.000  2000.000   600.000  2250.000   595.000  2410.000
GR    590.000  2630.000   585.000  2790.000   583.000  3200.000   585.000  3570.000   585.000  3800.000
GR    586.400  4000.000   592.900  4015.000   587.100  4028.000   588.200  4209.000   587.200  4309.000
GR    581.900  4323.000   578.400  4350.000   576.700  4381.000   576.100  4410.000   581.900  4437.000
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GR	587.800	4440.000	585.700	4523.000	588.000	4548.000	594.700	4783.000	596.800	5093.000
GR	600.100	5363.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.120	0.050	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SECTION D

X1	31900.000	21.000	4309.000	4445.000	1190.000	1080.000	1165.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	3170.000	0.0	5170.000	0.0	0.0	0.0	0.0
X4	3.000	587.100	4028.000	592.900	4015.000	585.400	4000.000	0.0	0.0	0.0
GR	595.000	2400.000	590.000	2515.000	585.000	2730.000	585.000	3160.000	586.000	3800.000
GR	588.200	4209.000	587.200	4309.000	581.900	4323.000	578.400	4350.000	576.700	4381.000
GR	576.100	4410.000	581.900	4437.000	585.100	4445.000	583.100	4512.000	583.300	4563.000
GR	584.000	4793.000	583.100	4863.000	584.800	5007.000	590.000	5450.000	595.000	5550.000
GR	606.000	5640.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.200	0.400	0.0	0.0	0.0	0.0	0.0

SECTION E

X1	33200.000	14.000	4070.000	4241.000	1390.000	1190.000	1300.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	0.0	4750.000	0.0	0.0	0.0	0.0
X4	2.000	588.000	4034.000	593.800	4020.000	0.0	0.0	0.0	0.0	0.0
GR	588.000	3260.000	587.000	3480.000	586.000	3770.000	586.300	4000.000	589.600	4070.000
GR	581.900	4099.000	577.900	4135.000	578.300	4170.000	579.400	4205.000	581.900	4237.000
GR	588.300	4241.000	590.000	4500.000	595.000	4700.000	500.000	5120.000	0.0	0.0
NC	0.050	0.050	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SECTION F MANUFACTURED SECTION

X1	33880.000	13.000	4070.000	4241.000	580.000	560.000	580.000	0.0	0.0	0.0
GR	588.000	3540.000	590.000	3920.000	590.000	4020.000	589.600	4070.000	581.900	4099.000
GR	577.900	4135.000	578.300	4170.000	579.400	4205.000	581.900	4237.000	583.300	4241.000
GR	592.500	4400.000	595.000	4600.000	500.000	4560.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.200	0.400	0.0	0.0	0.0	0.0	0.0
NH	4.000	0.120	4000.000	0.100	4404.000	0.035	4528.000	0.080	4500.000	0.0

SECTION G C & O R. R. BRIDGE, WIDTH=17.7 FT, LENGTH= 134 FT

X1	34410.000	17.000	4005.000	4528.000	450.000	540.000	500.000	0.0	0.0	0.0
GR	598.500	4000.000	598.500	4005.000	585.800	4005.000	587.300	4100.000	588.100	4200.000
GR	589.200	4300.000	589.600	4400.000	597.700	4400.000	597.700	4404.000	581.800	4404.000
GR	576.600	4430.000	573.300	4455.000	571.800	4480.000	579.000	4505.000	581.800	4528.000
GR	502.200	4528.000	502.700	4500.000	0.0	0.0	0.0	0.0	0.0	0.0
X1	34411.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	13.000	4000.000	598.500	598.500	4005.000	598.500	596.500	4100.000	599.100	596.800
BT	4200.000	599.500	597.000	4300.000	500.300	597.300	4400.000	601.100	598.200	4404.000
BT	501.100	597.700	4430.000	501.300	598.000	4455.000	501.500	598.000	4480.000	501.800
BT	598.200	4505.000	502.000	598.400	4528.000	502.000	598.500	4500.000	602.700	602.700
X1	34412.000	0.0	0.0	0.0	17.500	17.500	17.500	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	34413.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
NH	4.000	0.050	4118.000	0.120	4153.000	0.035	4396.000	0.050	4500.000	0.0

SECTION H STATE ST. BRIDGE, WIDTH= 18.2 FT, LENGTH=250 FT

X1	34835.000	23.000	4118.000	4396.000	240.000	270.000	250.000	0.0	0.0	0.0

MOORE BUSINESS FORMS INC 27

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GR     598.200   4068.000    596.400   4077.000    586.700   4107.000    596.000   4118.000    586.700   4118.000
GR     582.100   4141.000    581.800   4147.000    596.400   4147.000    595.400   4153.000    581.800   4153.000
GR     581.600   4170.000    578.500   4200.000    578.900   4230.000    577.200   4272.000    596.300   4272.000
GR     596.300   4278.000    575.800   4278.000    578.500   4335.000    582.100   4384.000    582.100   4390.000
GR     584.300   4396.000    597.400   4395.000    598.400   4600.000      0.0       0.0         0.0       0.0

X1   34836.000      0.0       0.0       0.0       1.000     1.000     1.000       0.0         0.0       0.0
BT       6.000   4118.000    596.000   595.200   4141.000   597.500   596.400   4153.000    597.500   596.400
BT    4200.000    597.500    596.400   4272.000   597.500   596.400  4395.000    597.400     597.400     0.0

X1   34837.000     24.000   4118.000  4395.000     18.000    18.000    18.000       0.0         0.0       0.0
BT       6.000   4118.000    596.000   595.200   4141.000   597.500   596.400   4153.000    597.500   596.400
BT    4200.000    597.500    596.400   4272.000   597.500   596.400  4395.000    597.400     597.400     0.0
GR     598.200   4012.000    596.400   4021.000   586.700   4051.000   596.000   4068.000    596.000   4118.000
GR     586.700   4118.000    582.100   4141.000   581.800   4147.000   596.400   4147.000    596.400   4153.000
GR     581.800   4153.000    581.600   4170.000   578.500   4200.000   578.900   4230.000    577.200   4272.000
GR     596.300   4272.000    596.300   4278.000   575.800   4278.000   578.500   4335.000    582.100   4384.000
GR     582.100   4390.000    584.300   4395.000   597.400   4395.000   598.400   4600.000      0.0       0.0

X1   34838.000      0.0       0.0       0.0       1.000     1.000     1.000       0.0         0.0       0.0

        SECTION I   MANUFACTURED SECTION

X1   34885.000     15.000   1094.000  1228.000   240.000   400.000   300.000       0.0         0.0       0.0
GR     598.200   1000.000    596.400   1009.000   584.200   1039.000   593.600   1069.000    592.800   1094.000
GR     582.100   1108.000    575.500   1130.000   575.100   1150.000   577.100   1175.000    576.600   1200.000
GR     582.100   1223.000    583.500   1228.000   585.000   1260.000   590.000   1550.000    595.000   1700.000
NH       3.000      0.050     94.000      0.035   228.000      0.050  1128.000       0.0         0.0       0.0

        SECTION J

X1   35885.000     25.000     94.000   228.000   740.000   900.000   760.000       0.0         0.0       0.0
GR     598.200      0.0     596.400     9.000   584.200    39.000   591.400    69.000     590.400    94.000
GR     582.100    108.000    575.500   130.000   575.100   150.000   577.100   175.000     576.400   200.000
GR     582.100    223.000    583.500   228.000   584.100   253.000   593.100   309.000     595.100   420.000
GR     589.200    600.000    584.300   630.000   590.500   552.000   592.200   745.000     591.500   785.000
GR     589.200    803.000    592.200   984.000   590.300   998.000   591.700  1008.000     592.200  1128.000
EJ       0.0        0.0       0.0       0.0       0.0       0.0       0.0       0.0         0.0       0.0
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*PROF 1

CCHV=   0.200 CEHV=   0.400
*SECNO 24860.000

3265 DIVIDED FLOW

   SECNO     DEPTH     CHSEL     CRIWS     WSELK     EG        HV        HL        O_LOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       ATW       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=    2200.0    5300.0  TYPE=     1  TARGET=    3100.000

        SECTION A  4.7 RIVER MILES FROM MOUTH

 24860.00     17.90    595.00      0.0    595.00    595.02      0.02      0.0       0.0    583.70
   22030.    19055.     2628.     347.    19179.     1564.     746.       0.        0.     592.60
     0.0      0.99      1.68      0.46     0.050     0.040    0.050      0.0     577.10   2300.00
 0.000058    2486.     2485.     2486.        0         0        0     -0.07    2608.45   5300.00

FLOW DISTRIBUTION FOR SECNO=  24860.00          CWSEL=    595.00

STA=    2300.    2530.    4000.    4225.    4426.    4495.    4576.    5300.
  PER Q=      4.8      50.5      9.3      7.3      4.5     11.9      1.5
   AREA=   1475.0   13083.6   2067.9   1710.0    842.5   1553.7    745.9
    VEL=      0.7      1.0      1.0      0.9      1.2      1.7      0.5

*SECNO 28610.000

3470 ENCROACHMENT STATIONS=    2200.0    4860.0  TYPE=     1  TARGET=    2560.000

        SECTION 3

 28610.00     20.46    595.15      0.0      0.0    595.19      0.03      0.17      0.01    588.60
   22030.    6417.     4937.    10575.    5683.     2028.    9530.      874.      108.     587.90
     0.42      0.96      2.43      1.12    0.080     0.040    0.050     0.071    574.70   2200.00
 0.000117    1720.     3675.     1800.        1         0        0     -0.13    2508.85   4708.85

FLOW DISTRIBUTION FOR SECNO=  28610.00          CWSEL=    595.16

STA=    2200.    2700.    2810.    2950.    2997.    3123.    3285.    3580.    3794.    4150.    4350.    4540.    4709.
  PER Q=      8.2      6.9     11.8      2.3     22.4      7.3     13.3      6.8      5.3      6.7      7.8      1.2
   AREA=   2561.3   1391.2   2120.7    509.8   2027.9   1271.3   2315.1   1358.4   1440.9   1343.5   1375.6    424.3
    VEL=      0.7      1.1      1.2      1.0      2.4      1.3      1.3      1.1      0.8      1.1      1.2      0.6

*SECNO 30735.000

3470 ENCROACHMENT STATIONS=    2400.0    4480.0  TYPE=     1  TARGET=    2080.000

        SECTION C

                HIGH WATER  MARK = 594 FT FOR Q=14150 CFS 3-5-76

 30735.00     19.23    595.33      0.0      0.0    595.36      0.03      0.17      0.00    587.20
   22030.    16904.     4958.     169.    17325.     2133.    321.      1521.     184.     587.80
     0.75      0.98      2.32      0.52    0.070     0.040    0.100     0.064    576.10   2400.00
 0.000100    1380.     2200.     1430.        2         0        0     -0.04    2080.00   4480.00
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FLOW DISTRIBUTION FOR SECNO=  30735.00          CWSEL=     595.33

STA=     2400.     2790.     3200.     3570.     3800.     4000.     4209.     4309.     4440.     4480.
  PER Q=      6.0      22.6      20.4      10.9       9.4       5.7       2.9      22.5       0.8
   AREA=   1377.3    4645.4    4192.2    2376.0    1926.1    1544.6     763.0    2133.3     321.4
    VEL=      0.7       1.1       1.1       1.0       1.0       0.8       0.8       2.3       0.5

*SECNO 31900.000

3470 ENCROACHMENT STATIONS=     3170.0     5170.0  TYPE=     1  TARGET=     2000.000

        SECTION D

 31900.00     19.35    595.45      0.0       0.0    595.51      0.06      0.14      0.01    587.20
   22030.     6785.     7120.     8124.    10453.     2213.     5434.     2043.      239.    585.10
     0.95      0.55      3.22      1.26      0.120     0.035     0.060     0.057    576.10   3170.00
 0.000143     1190.     1155.     1080.         0         0         0     -0.08   2000.00   5170.00

FLOW DISTRIBUTION FOR SECNO=  31900.00          CWSEL=     595.45

STA=     3170.     3800.     4000.     4209.     4309.     4445.     4512.     4563.     4793.     4863.     5007.     5170.
  PER Q=     19.2       5.5       4.0       2.0      32.3       3.4       5.5       7.2       3.9       7.5       9.3
   AREA=   6266.5    1850.9    1570.5     775.5    2213.4     593.3    1095.4    1209.6     558.3    1296.7    1580.7
    VEL=      0.7       0.7       0.5       0.6       3.2       1.3       1.1       1.3       1.3       1.3       1.3

CCHV=    0.200 CEHV=    0.400
*SECNO 33200.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        O_LOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       E_MIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS=        0.0     4750.0  TYPE=     1  TARGET=     4749.995

        SECTION E

 33200.00     17.74    595.64      0.0       0.0    595.82      0.18      0.26      0.05    589.50
   22030.     6556.    11612.     3861.     7052.     2578.     2663.     2518.      291.    588.30
     1.08      0.93      4.50      1.45      0.120     0.035     0.060     0.053    577.90   3260.00
 0.000314     1390.     1300.     1190.         2         0         0     -0.08   1490.00   4750.00

FLOW DISTRIBUTION FOR SECNO=  33200.00          CWSEL=     595.64

STA=     3250.     3480.     3770.     4000.     4020.     4034.     4070.     4241.     4600.     4700.     4750.
  PER Q=      7.1      11.6       9.8       0.3       0.2       0.9      52.7      16.2       1.3       0.0
   AREA=   1791.9    2652.0    2183.8     111.9      65.4     246.4    2577.7    2331.6     314.5      17.4
    VEL=      0.9       1.0       1.0       0.7       0.5       0.8       4.5       1.5       0.9       0.2

*SECNO 33880.000
3280 CROSS SECTION  33880.00 EXTENDED      7.82 FEET

        SECTION F  MANUFACTURED SECTION

 33880.00     17.92    595.82      0.0       0.0    596.08      0.25      0.22      0.03    589.50
   22030.     7021.    13071.     1933.     3475.     2508.     1280.     2559.      309.    588.30
     1.13      2.32      5.01      1.51      0.050     0.035     0.050     0.051    577.90   3540.00
 0.000383      580.      690.      560.         2         0         0     -0.03   1059.85   4609.85

FLOW DISTRIBUTION FOR SECNO=  33880.00          CWSEL=     595.82
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STA=     3540.     3920.     4020.     4070.     4241.     4400.     4600.     4510.
  PER Q=      24.3       5.0       2.5      59.3       7.0       1.8       0.0
   AREA=    2592.0     532.1     301.1    2607.8     861.9     414.2       4.0
    VEL=       2.1       1.9       1.9       5.0       1.3       0.9       0.3

CCHV=   0.200 CEHV=   0.400
1490 NH CARD USED
*SECNO 34410.000

3265 DIVIDED FLOW

        SECTION 3  C & O R. R. BRIDGE. WIDTH=17.7 FT. LENGTH= 134 FT

 34410.00    24.24   596.04      0.0       0.0    596.29      0.25      0.21      0.00    598.50
   22030.       0.   22030.       0.        0.     5511.        0.     2731.      318.    602.20
     1.15      0.0     4.00      0.0     0.050     0.046     0.050     0.050    571.80   4005.00
0.000485      450.      500.      540.         2         0         0     -0.05    518.00   4528.00

FLOW DISTRIBUTION FOR SECNO=  34410.00          CWSEL=    596.04

STA=     4006.     4528.
  PER Q=     100.0
   AREA=    5510.5
    VEL=       4.0

*SECNO 34411.000

3255 DIVIDED FLOW

3370 NORMAL BRIDGE.NRD= 13 MIN ELTRD=  598.50 MAX ELLC=  602.70

 34411.00    24.24   596.04      0.0       0.0    596.29      0.25      0.00      0.00    598.50
   22030.       0.   22030.       0.        0.     5511.        0.     2731.      318.    602.20
     1.15      0.0     4.00      0.0     0.050     0.046     0.050     0.050    571.80   4005.00
0.000486        1.        1.        1.         0         0         0     -0.05    518.00   4528.00

FLOW DISTRIBUTION FOR SECNO=  34411.00          CWSEL=    596.04

STA=     4006.     4528.
  PER Q=     100.0
   AREA=    5510.5
    VEL=       4.0

*SECNO 34412.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE.NRD= 13 MIN ELTRD=  598.50 MAX ELLC=  602.70

 34412.00    24.25   596.05      0.0       0.0    596.30      0.25      0.01      0.00    598.50
   22030.       0.   22030.       0.        0.     5515.        0.     2733.      319.    602.20
     1.15      0.0     3.99      0.0     0.050     0.046     0.050     0.050    571.80   4005.00
0.000485       13.       18.       13.         0         0         0     -0.05    518.00   4528.00

FLOW DISTRIBUTION FOR SECNO=  34412.00          CWSEL=    596.05

STA=     4006.     4528.
  PER Q=     100.0
   AREA=    5514.7
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MOORE BUSINESS FORMS INC 27

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    VEL=       4.0

*SECNO 34413.000

3255 DIVIDED FLOW

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        O_LOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       ATN       E_MIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 34413.00     24.25     596.05      0.0       0.0     596.30      0.25      0.00      0.00     598.50
   22030.        0.     22030.       0.        0.      5515.       0.     2734.      319.     602.20
     1.15      0.0       3.99      0.0      0.050     0.046     0.050     0.050    571.80    4006.00
 0.000485       1.        1.        1.         0         0         0     -0.05     518.00    4528.00

FLOW DISTRIBUTION FOR SECNO=  34413.00          CWSEL=    596.05

STA=     4006.     4528.
  PER Q=     100.0
   AREA=    5515.4
    VEL=       4.0

1490 NH CARD USED
*SECNO 34835.000

3255 DIVIDED FLOW

        SECTION 4  STATE ST. BRIDGE, WIDTH= 18.2 FT, LENGTH=250 FT

 34835.00     20.25     596.05      0.0       0.0     596.43      0.39      0.08      0.05     596.00
   22030.      217.     21813.       0.      187.      4357.       0.     2762.      321.     597.40
     1.18      1.16      5.01      0.0      0.050     0.036     0.050     0.049    575.80    4078.09
 0.000225      240.      250.      270.         2         0         0     -0.02     305.91    4395.00

FLOW DISTRIBUTION FOR SECNO=  34835.00          CWSEL=    596.05

STA=     4078.     4118.     4396.
  PER Q=       1.0      99.0
   AREA=     186.8    4356.8
    VEL=       1.2       5.0

*SECNO 34836.000

3255 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  6 MIN ELTRD=  596.00 MAX ELLC=  597.40

 34836.00     20.25     596.05      0.0       0.0     596.43      0.39      0.00      0.00     596.00
   22030.      218.     21812.       0.      187.      4350.       0.     2762.      321.     597.40
     1.18      1.17      5.01      0.0      0.050     0.036     0.050     0.049    575.80    4078.09
 0.000227        1.        1.        1.         0         0         0     -6.89     305.91    4396.00

FLOW DISTRIBUTION FOR SECNO=  34835.00          CWSEL=    596.05

STA=     4078.     4118.     4396.
  PER Q=       1.0      99.0
   AREA=     186.8    4350.0
    VEL=       1.2       5.0
```

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*SECNO 34837.000

3265 DIVIDED FLOW


3370 NORMAL BRIDGE,NRD=  6 MIN ELTRD=  596.00 MAX SLLC=  597.40

 34837.00    20.25   596.05      0.0       0.0    596.44      0.38      0.00      0.00   596.00
   22030.      255.   21775.       0.      218.    4351.        0.     2764.      321.   597.40
     1.18      1.17     5.00      0.0     0.050    0.036     0.050     0.049    575.80  4022.38
 0.000226       13.      18.       18.         0        0         0     -5.93    351.92  4396.00

FLOW DISTRIBUTION FOR SECNO=  34837.00          CWSEL=    596.05

STA=     4022.     4118.     4396.
  PER Q=       1.2      98.8
   AREA=     217.5    4350.7
    VEL=       1.2       5.0

*SECNO 34838.000

3265 DIVIDED FLOW

 34838.00    20.25   596.05      0.0       0.0    596.44      0.38      0.00      0.00   596.00
   22030.      254.   21776.       0.      218.    4358.        0.     2764.      321.   597.40
     1.18      1.17     5.00      0.0     0.050    0.036     0.050     0.049    575.80  4022.37
 0.000224        1.       1.        1.         0        0         0    -0.02    351.93  4395.00

FLOW DISTRIBUTION FOR SECNO=  34838.00          CWSEL=    596.05

STA=     4022.     4118.     4396.
  PER Q=       1.2      98.8
   AREA=     217.9    4358.3
    VEL=       1.2       5.0

*SECNO 34885.000
3280 CROSS SECTION  34885.00 EXTENDED      1.35 FEET

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


        SECTION 1  MANUFACTURED SECTION

 34885.00    21.25   596.35      0.0       0.0    596.58      0.22      0.11      0.03   592.80
   22030.     1087.   10950.    9992.      484.    2385.     3533.     2805.      325.   593.50
     1.20      2.25     4.59      2.83     0.050    0.050     0.050     0.049    575.10  1009.11
 0.000542      240.      300.      400.         2        0         0    -0.01    690.89  1700.00

FLOW DISTRIBUTION FOR SECNO=  34885.00          CWSEL=    596.35

STA=     1009.     1069.     1094.     1228.     1260.     1550.     1700.
  PER Q=       4.4       0.5      49.7       6.4      34.5       4.4
   AREA=     405.2      78.8    2384.7     387.3    2567.5     578.1
    VEL=       2.4       1.5       4.5       3.6       3.0       1.7

1490 NH CARD USED
*SECNO 35885.000
3280 CROSS SECTION  35885.00 EXTENDED      4.46 FEET
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SECTION J

35885.00     21.57    596.67      0.0       0.0    596.91      0.24      0.33      0.01    590.40
   22030.     1144.    12340.    8545.     601.     2447.     4939.     2945.      343.    583.50
    1.26      1.90      5.04      1.73    0.050     0.035     0.050     0.047    575.10      7.70
0.000306     740.      760.      900.        0         0         0     -0.05   1120.30   1128.00


FLOW DISTRIBUTION FOR SECNO=  35885.00          DWSEL=    596.67

STA=        8.       69.       94.      228.      253.      309.      600.      530.      746.      984.     1128.
  PER Q=     4.1       1.1      56.0       4.2       4.2       6.5       3.2       5.6      10.5       4.6
   AREA=   456.7     144.0    2447.3     321.5     451.3    1095.8     297.3     697.0    1378.3     697.5
    VEL=     2.0       1.7       5.0       2.9       2.1       1.3       2.4       1.8       1.7       1.5
```

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*****************************************************
  HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
  ERROR CORR -  01.02.03
  MODIFICATION -  50.51.52.53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.0         0.0       0.0       0.   595.100    0.0

J2  NPROF     IPLOT     PREVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    15.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
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MOORE BUSINESS FORMS INC 27

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*PROF 2

CCHV=   0.200 CEHV=   0.400
*SECNO 24860.000

3255 DIVIDED FLOW

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XVL       XNCH      XVR       WTV       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS=    2200.0    5300.0  TYPE=     1  TARGET=    3100.000

        SECTION 4  4.7 RIVER MILES FROM MOUTH

 24860.00    18.00   595.10      0.0   595.10   595.12     0.02      0.0       0.0    583.70
   22030.    19361.    2609.     359.  19409.    1574.     785.       0.        0.    592.60
     0.0      0.98      1.65     0.46    0.050    0.040    0.050      0.0    577.10   2200.00
0.000056    24860.    24850.   24860.        0        0        0    -0.07   2871.58   5300.00

*SECNO 28610.000

3470 ENCROACHMENT STATIONS=    2200.0    4860.0  TYPE=     1  TARGET=    2560.000

        SECTION 3

 28610.00    20.55   595.25      0.0      0.0   595.28     0.03      0.16      0.01    588.50
   22030.    6398.     4894.   10738.    6759.    2040.    9681.     885.      113.    587.90
     0.43      0.95      2.40     1.11    0.080    0.040    0.050     0.071   574.70   2200.00
0.000112     1720.     3675.    1800.        1        0        0    -0.14   2514.54   4714.54

*SECNO 30735.000

3470 ENCROACHMENT STATIONS=    2400.0    4480.0  TYPE=     1  TARGET=    2080.000

        SECTION 2


                HIGH WATER  MARK = 594 FT FOR Q=14150 CFS 3-5-75

 30735.00    19.32   595.42      0.0      0.0   595.45     0.03      0.16      0.00    587.20
   22030.    16927.    4934.     169.  17494.    2145.     325.    1539.     189.    587.80
     0.77      0.97      2.30     0.52    0.070    0.040    0.100     0.054   576.10   2400.00
0.000097     1380.     2200.    1430.        2        0        0    -0.04   2030.00   4480.00

*SECNO 31900.000

3470 ENCROACHMENT STATIONS=    3170.0    5170.0  TYPE=     1  TARGET=    2000.000

        SECTION 0

 31900.00    19.43   595.53      0.0      0.0   595.60     0.05      0.13      0.01    587.20
   22030.    6798.     7087.    8144.   10550.    2225.    5495.    2065.      244.    595.10
     0.95      0.54      3.19     1.25    0.120    0.035    0.060     0.057   576.10   3170.00
0.000139     1190.     1155.    1080.        0        0        0    -0.08   2030.00   5170.00


CCHV=   0.200 CEHV=   0.400
*SECNO 33200.000
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         DLOB      QCH       DROB      ALOB      ACH       AROB      VOL       TWA       LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=        0.0     4750.0  TYPE=     1  TARGET=    4749.995

        SECTION E

33200.00     17.82    595.72      0.0       0.0    595.90      0.17      0.26      0.04    589.50
  22030.     6569.    11553.    3893.     7117.    2591.     2704.     2545.      297.    588.30
    1.09      0.92      4.45      1.44     0.120    0.035     0.060     0.053    577.90   3260.00
0.000306     1390.     1300.     1190.         2        0         0     -0.08   1490.00   4750.00

*SECNO 33880.000
3280 CROSS SECTION  33880.00 EXTENDED      7.90 FEET

        SECTION F  MANUFACTURED SECTION

33880.00     18.00    595.90      0.0       0.0    596.15      0.25      0.22      0.03    589.50
  22030.     7058.    13001.    1972.     3515.    2521.     1308.     2587.      315.    588.30
    1.14      2.01      4.95      1.51     0.050    0.035     0.050     0.051    577.90   3540.00
0.000372      580.      680.      660.         2        0         0     -0.03   1070.75   4510.75

CCHV=   0.200 CEHV=   0.400
1490 NH CARD USED
*SECNO 34410.000

3265 DIVIDED FLOW

        SECTION G  C & O R. R. BRIDGE, WIDTH=17.7 FT, LENGTH= 134 FT

34410.00     24.31    596.11      0.0       0.0    596.35      0.25      0.21      0.00    598.50
  22030.        0.    22030.       0.        0.    5545.       0.     2760.      324.    602.20
    1.17      0.0      3.97      0.0     0.050    0.047     0.050     0.050    571.80   4005.00
0.000478      450.      500.      540.         2        0         0     -0.05    518.00   4528.00

*SECNO 34411.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 13 MIN ELTRD=  598.50 MAX ELLC=  602.70

34411.00     24.31    596.11      0.0       0.0    596.35      0.25      0.00      0.00    598.50
  22030.        0.    22030.       0.        0.    5546.       0.     2760.      324.    602.20
    1.17      0.0      3.97      0.0     0.050    0.047     0.050     0.050    571.80   4005.00
0.000478        1.        1.        1.         0        0         0     -0.05    518.00   4528.00

*SECNO 34412.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 13 MIN ELTRD=  598.50 MAX ELLC=  602.70

34412.00     24.32    596.12      0.0       0.0    596.36      0.24      0.01      0.00    598.50
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   22030.       0.    22030.       0.       0.     5550.       0.     2762.      324.     602.20
     1.17      0.0      3.97      0.0     0.050     0.047     0.050     0.050    571.80   4005.00
 0.000477      18.      18.       18.        0         0         0     -0.05    518.00   4528.00

*SECNO 34413.000

3265 DIVIDED FLOW

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

 34413.00    24.32    596.12      0.0       0.0     596.36      0.24      0.00      0.00     598.50
   22030.       0.    22030.       0.        0.     5550.       0.     2763.      324.     602.20
     1.17      0.0      3.97      0.0     0.050     0.047     0.050     0.050    571.80   4005.00
 0.000477       1.       1.        1.        0         0         0     -0.05    518.00   4528.00

1490 NH CARD USED
*SECNO 34835.000

3265 DIVIDED FLOW

        SECTION H  STATE ST. BRIDGE, WIDTH= 18.2 FT, LENGTH=250 FT

 34835.00    20.31    596.11      0.0       0.0     596.50      0.38      0.08      0.05     596.00
   22030.     220.    21810.       0.      189.     4374.       0.     2792.      327.     597.40
     1.19      1.16      4.99      0.0     0.050     0.036     0.050     0.049    575.80   4077.89
 0.000222     240.      250.      270.        2         0         0     -0.02    306.11   4396.00

*SECNO 34836.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  6 MIN ELTRD=  596.00 MAX ELLC=  597.40

 34836.00    20.31    596.11      0.0       0.0     596.50      0.38      0.00      0.00     596.00
   22030.     221.    21809.       0.      189.     4365.       0.     2792.      327.     597.40
     1.19      1.17      4.99      0.0     0.050     0.036     0.050     0.049    575.80   4077.89
 0.000224       1.       1.        1.        0         0         0     -7.92    306.11   4396.00

*SECNO 34837.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD=  6 MIN ELTRD=  596.00 MAX ELLC=  597.40

 34837.00    20.32    596.12      0.0       0.0     596.50      0.38      0.00      0.00     596.00
   22030.     260.    21770.       0.      224.     4367.       0.     2794.      327.     597.40
     1.19      1.16      4.98      0.0     0.050     0.036     0.050     0.049    575.80   4021.88
 0.000223      18.      18.       18.        0         0         0     -7.97    352.12   4396.00

*SECNO 34838.000

3265 DIVIDED FLOW

 34838.00    20.32    596.12      0.0       0.0     596.50      0.38      0.00      0.00     596.00
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   22030.     259.    21771.       0.     224.    4375.       0.    2794.     327.    597.40
     1.19      1.15      4.98      0.0    0.050    0.036    0.050    0.049   575.80  4021.87
 0.000221        1.        1.       1.        0        0        0    -0.02   352.13  4395.00


*SECNO 34885.000
3280 CROSS SECTION  34885.00 EXTENDED      1.42 FEET


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


        SECTION I  MANUFACTURED SECTION

 34885.00    21.32    596.42      0.0       0.0    596.54      0.22      0.10      0.03    592.80
   22030.    1095.    10909.    10025.     490.     2393.     3554.     2835.     331.     583.50
     1.21     2.24      4.55      2.81    0.050    0.050     0.050     0.049   575.10  1008.91
 0.000531     240.      300.      400.        2        0        0    -0.01   691.10  1700.00


1490 NH CARD USED
*SECNO 35885.000
3280 CROSS SECTION  35885.00 EXTENDED      4.52 FEET


        SECTION J

 35885.00    21.63    596.73      0.0       0.0    596.97      0.24      0.32      0.01    590.40
   22030.    1148.    12281.     8501.     606.     2455.     4993.     2975.     349.     583.50
     1.28     1.89      5.00      1.72    0.050    0.035     0.050     0.047   575.10      7.40
 0.000299     740.      750.      900.        0        0        0    -0.05  1120.60  1128.00
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**********************************************
 HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
 ERROR CORR -  01.02.03
 MODIFICATION -  50.51.52.53
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CASS RIVER

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENO	STENCL	STCHL	STCHR	STENCR
24860.000	595.00	0.0	595.02	2508.45	19055.25	2528.11	346.54	3100.00	2200.00	4495.00	4596.00	5300.00
24860.000	595.10	0.0	595.12	2871.58	19061.29	2509.40	359.30	3100.00	2200.00	4495.00	4596.00	5300.00
28610.000	595.16	0.0	595.19	2508.85	6417.48	4935.86	10575.64	2560.00	2200.00	2997.00	3123.00	4850.00
28610.000	595.25	0.0	595.28	2514.54	6398.29	4893.53	10738.07	2560.00	2200.00	2997.00	3123.00	4850.00
30735.000	595.33	0.0	595.36	2080.00	16903.86	4957.64	168.50	2080.00	2400.00	4309.00	4440.00	4480.00
30735.000	595.42	0.0	595.45	2080.00	16925.72	4934.21	169.06	2080.00	2400.00	4309.00	4440.00	4480.00
31900.000	595.45	0.0	595.51	2000.00	6785.66	7119.34	8124.48	2000.00	3170.00	4309.00	4445.00	5170.00
31900.000	595.53	0.0	595.60	2000.00	6798.39	7087.41	8144.19	2000.00	3170.00	4309.00	4445.00	5170.00
33200.000	595.64	0.0	595.82	1490.00	6556.41	11512.34	3361.25	4750.00	0.00	4070.00	4241.00	4750.00
33200.000	595.72	0.0	595.90	1490.00	6569.29	11563.20	3397.52	4750.00	0.00	4070.00	4241.00	4750.00
33880.000	595.82	0.0	596.08	1069.85	7020.65	13070.91	1938.44	0.0	0.0	4070.00	4241.00	0.0
33880.000	595.90	0.0	596.15	1070.75	7057.73	13000.50	1971.56	0.0	0.0	4070.00	4241.00	0.0
34410.000	596.04	0.0	596.29	518.00	0.0	22029.98	0.0	0.0	0.0	4006.00	4528.00	0.0
34410.000	596.11	0.0	596.35	518.00	0.0	22029.99	0.0	0.0	0.0	4006.00	4528.00	0.0
34411.000	596.04	0.0	596.29	518.00	0.0	22029.99	0.0	0.0	0.0	4006.00	4528.00	0.0
34411.000	596.11	0.0	596.35	518.00	0.0	22029.99	0.0	0.0	0.0	4006.00	4528.00	0.0
34412.000	596.05	0.0	596.30	518.00	0.0	22029.99	0.0	0.0	0.0	4006.00	4528.00	0.0
34412.000	596.12	0.0	596.36	518.00	0.0	22029.98	0.0	0.0	0.0	4006.00	4528.00	0.0
34413.000	596.05	0.0	596.30	518.00	0.0	22029.98	0.0	0.0	0.0	4006.00	4528.00	0.0
34413.000	596.12	0.0	596.36	518.00	0.0	22029.99	0.0	0.0	0.0	4006.00	4528.00	0.0
34835.000	596.05	0.0	596.43	305.91	215.87	21813.11	0.0	0.0	0.0	4118.00	4395.00	0.0
34835.000	596.11	0.0	596.50	305.11	219.86	21810.13	0.0	0.0	0.0	4118.00	4395.00	0.0
34836.000	596.05	0.0	596.43	305.91	217.73	21812.25	0.0	0.0	0.0	4118.00	4395.00	0.0
34836.000	596.11	0.0	596.50	305.11	220.85	21809.14	0.0	0.0	0.0	4118.00	4395.00	0.0
34837.000	596.05	0.0	596.44	361.92	255.29	21774.69	0.0	0.0	0.0	4118.00	4396.00	0.0
34837.000	596.12	0.0	596.50	362.12	259.53	21770.45	0.0	0.0	0.0	4118.00	4396.00	0.0

SECNJ	CWSEL	DIFRWS	ES	TOPWID	QLJB	QCH	QRJB	PERENC	STENCL	STCHL	STCHR	STENCR
34838.000	596.05	0.0	596.44	361.93	254.43	21775.55	0.0	0.0	0.0	4118.00	4395.00	0.0
34838.000	596.12	0.0	596.50	362.13	253.55	21771.45	0.0	0.0	0.0	4118.00	4395.00	0.0
34885.000	595.35	0.0	595.58	590.99	1087.31	10950.23	9992.45	0.0	0.0	1094.00	1228.00	0.0
34885.000	595.42	0.0	595.54	591.10	1094.97	10908.55	10025.37	0.0	0.0	1094.00	1228.00	0.0
35885.000	595.57	0.0	596.91	1120.30	1143.95	12339.78	8546.28	0.0	0.0	94.00	228.00	0.0
35885.000	595.73	0.0	595.97	1120.50	1148.03	12281.14	8500.82	0.0	0.0	94.00	228.00	0.0

MOORE BUSINESS FORMS INC 27

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	IC*S	VCH	AREA	.01K
24850.000	24360.00	0.0	0.0	577.10	22030.00	595.00	0.0	595.02	0.58	1.58	21488.70	28914.42
24850.000	24360.00	0.0	0.0	577.10	22030.00	595.10	0.0	595.12	0.56	1.56	21767.97	29436.15
28610.000	3575.00	0.0	0.0	574.70	22030.00	595.16	0.0	595.19	1.17	2.43	18241.00	20399.20
28610.000	3575.00	0.0	0.0	574.70	22030.00	595.25	0.0	595.28	1.12	2.40	18479.23	20731.91
30735.000	2200.00	0.0	0.0	576.10	22030.00	595.33	0.0	595.36	1.00	2.32	19779.43	22018.18
30735.000	2200.00	0.0	0.0	576.10	22030.00	595.42	0.0	595.45	0.97	2.30	19964.23	22324.25
31900.000	1165.00	0.0	0.0	575.10	22030.00	595.45	0.0	595.51	1.43	3.22	19110.36	18452.31
31900.000	1165.00	0.0	0.0	575.10	22030.00	595.53	0.0	595.60	1.39	3.19	19279.31	13697.38
33200.000	1300.00	0.0	0.0	577.90	22030.00	595.64	0.0	595.82	3.14	4.50	12293.46	12434.61
33200.000	1300.00	0.0	0.0	577.90	22030.00	595.72	0.0	595.90	3.06	4.46	12412.42	12597.87
33880.000	580.00	0.0	0.0	577.90	22030.00	595.82	0.0	595.08	3.83	5.01	7363.16	11253.18
33880.000	580.00	0.0	0.0	577.90	22030.00	595.90	0.0	595.15	3.72	4.96	7443.54	11417.31
34410.000	500.00	0.0	0.0	571.80	22030.00	596.04	0.0	596.29	4.86	4.00	5510.52	9988.06
34410.000	500.00	0.0	0.0	571.80	22030.00	596.11	0.0	596.35	4.78	3.97	5545.42	10071.30
34411.000	1.00	598.50	602.70	571.80	22030.00	596.04	0.0	595.29	4.86	4.00	5510.52	9938.30
34411.000	1.00	598.50	602.70	571.80	22030.00	596.11	0.0	595.35	4.78	3.97	5545.52	10071.53
34412.000	17.50	598.50	602.70	571.80	22030.00	596.05	0.0	596.30	4.85	3.99	5514.92	9998.53
34412.000	17.50	598.50	602.70	571.80	22030.00	596.12	0.0	595.36	4.77	3.97	5549.82	10081.80
34413.000	1.00	0.0	0.0	571.80	22030.00	596.05	0.0	596.30	4.85	3.99	5515.42	9999.74
34413.000	1.00	0.0	0.0	571.80	22030.00	596.12	0.0	596.36	4.77	3.97	5550.37	10082.41
34835.000	250.00	0.0	0.0	575.80	22030.00	596.05	0.0	596.43	2.25	5.01	4543.61	14637.65
34835.000	250.00	0.0	0.0	575.80	22030.00	596.11	0.0	596.50	2.22	4.99	4563.70	14777.30
34836.000	1.00	595.00	597.40	575.80	22030.00	596.05	0.0	596.43	2.27	5.01	4536.75	14629.11
34836.000	1.00	595.00	597.40	575.80	22030.00	596.11	0.0	595.50	2.24	4.99	4555.99	14712.11
34837.000	18.00	596.00	597.40	575.80	22030.00	596.05	0.0	596.44	2.26	5.00	4568.32	14657.93
34837.000	18.00	595.00	597.40	575.80	22030.00	596.12	0.0	596.50	2.23	4.98	4591.24	14742.14
34838.000	1.00	0.0	0.0	575.80	22030.00	596.05	0.0	596.44	2.24	5.00	4575.20	14720.53
34838.000	1.00	0.0	0.0	575.80	22030.00	596.12	0.0	596.50	2.21	4.98	4600.16	14811.77
34885.000	300.00	0.0	0.0	575.10	22030.00	596.35	0.0	596.58	5.42	4.59	6401.70	9451.84
34885.000	300.00	0.0	0.0	575.10	22030.00	596.42	0.0	596.54	5.31	4.56	6445.74	9555.95
35885.000	760.00	0.0	0.0	575.10	22030.00	596.57	0.0	596.91	3.06	5.04	7985.50	12601.95
35885.000	760.00	0.0	0.0	575.10	22030.00	596.73	0.0	596.97	2.99	5.00	8053.39	12731.61

MOORE BUSINESS FORMS INC 27

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSK	DIFKWS	TOPWID	XLOB
24860.000	22030.00	595.00	0.0	0.0	0.0	2508.45	2486.00
24850.000	22030.00	595.10	0.10	0.0	0.0	2871.58	2486.00
28610.000	22030.00	595.16	0.0	0.16	0.0	2508.85	3575.00
28610.000	22030.00	595.25	0.09	0.15	0.0	2514.54	3575.00
30735.000	22030.00	595.33	0.0	0.17	0.0	2080.00	2200.00
30735.000	22030.00	595.42	0.09	0.17	0.0	2080.00	2200.00
31900.000	22030.00	595.45	0.0	0.12	0.0	2000.00	1165.00
31900.000	22030.00	595.53	0.09	0.11	0.0	2000.00	1165.00
33200.000	22030.00	595.64	0.0	0.20	0.0	1490.00	1300.00
33200.000	22030.00	595.72	0.08	0.19	0.0	1490.00	1300.00
33880.000	22030.00	595.82	0.0	0.18	0.0	1069.85	580.00
33880.000	22030.00	595.90	0.08	0.17	0.0	1070.75	580.00
34410.000	22030.00	595.04	0.0	0.22	0.0	518.00	500.00
34410.000	22030.00	595.11	0.07	0.21	0.0	518.00	500.00
34411.000	22030.00	596.04	0.0	0.00	0.0	518.00	1.00
34411.000	22030.00	595.11	0.07	0.00	0.0	518.00	1.00
34412.000	22030.00	596.05	0.0	0.01	0.0	518.00	17.50
34412.000	22030.00	596.12	0.07	0.01	0.0	518.00	17.50
34413.000	22030.00	596.05	0.0	0.00	0.0	518.00	1.00
34413.000	22030.00	596.12	0.07	0.00	0.0	518.00	1.00
34835.000	22030.00	596.05	0.0	-0.00	0.0	305.91	250.00
34835.000	22030.00	596.11	0.07	-0.00	0.0	305.11	250.00
34836.000	22030.00	596.05	0.0	-0.00	0.0	305.91	1.00
34836.000	22030.00	596.11	0.07	-0.00	0.0	305.11	1.00
34837.000	22030.00	596.05	0.0	0.01	0.0	361.92	18.00
34837.000	22030.00	596.12	0.07	0.01	0.0	362.12	18.00
34838.000	22030.00	596.05	0.0	0.00	0.0	361.93	1.00
34838.000	22030.00	596.12	0.07	0.00	0.0	362.13	1.00
34885.000	22030.00	596.35	0.0	0.30	0.0	590.89	300.00
34885.000	22030.00	596.42	0.07	0.30	0.0	591.10	300.00
35885.000	22030.00	596.67	0.0	0.31	0.0	1120.30	760.00
35885.000	22030.00	596.73	0.06	0.31	0.0	1120.60	760.00

SUMMARY OF ERRORS

MOORE BUSINESS FORMS INC 27

FLOODWAY DATA. CASS RIVER
PROFILE NO. 2

STATION	FLOODWAY WIDTH (FT)	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
24860.000	3100.	21758.	1.0	595.1	595.0	0.1
28610.000	2515.	18479.	1.2	595.3	595.2	0.1
30735.000	2080.	19954.	1.1	595.4	595.3	0.1
31900.000	2000.	19230.	1.1	595.5	595.4	0.1
33200.000	1490.	12412.	1.8	595.7	595.6	0.1
33880.000	1071.	7444.	3.0	595.9	595.8	0.1
34410.000	522.	5545.	4.0	596.1	596.0	0.1
34411.000	522.	5546.	4.0	596.1	596.0	0.1
34412.000	522.	5550.	4.0	596.2	596.1	0.1
34413.000	522.	5550.	4.0	596.2	596.1	0.1
34835.000	318.	4554.	4.8	596.1	596.0	0.1
34836.000	318.	4556.	4.8	596.1	596.0	0.1
34837.000	374.	4591.	4.8	596.2	596.1	0.1
34838.000	374.	4600.	4.9	596.2	596.1	0.1
34885.000	591.	5447.	3.4	596.5	596.4	0.1
35885.000	1121.	8054.	2.7	596.8	596.7	0.1

MOORE BUSINESS FORMS INC 27

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

CASS RIVER, BRIDGEPORT TOWNSHIP

SAGINAW COUNTY, MICHIGAN

HYDRAULIC ANALYSIS

1. INTRODUCTION

The stream being studied is the Cass River, which is within the corporate limits of Bridgeport Township, Saginaw County, Michigan. The drainage area of Cass River at Bridgeport is 897.6 square miles. The approved flows for the gage at Frankenmuth were prorated to Bridgeport by Regional Analysis. The equation is expressed as:

$$Q_{Bridgeport} = Q_{Frankenmuth} \left(\frac{A_{Bridgeport}}{A_{Frankenmuth}} \right)^{0.839}$$

A summary of the peak discharges is presented in Table 1.

TABLE 1

PEAK DISCHARGES

Location	10-year	50-year	100-year	500-year	
Mouth at Saginaw River	14,500	20,200	22,400	27,700	*
Bridgeport	14,260	19,820	22,030	27,270	
Frankenmuth	13,600	18,900	21,000	26,000	

*See Ref. 1.

The project managers for the Flood Insurance Studies are William McDonough and Duane Ellis.

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100-, and 500-year floods were computed through the HEC-2 computer program, developed by U.S. Army Corps of Engineers (Ref. 2). The model was developed based on the 100-year flood.

2.1 Cross Sections

Cross Sections used in this study were obtained from field survey which was made in May of 1979. The locations of the cross sections including two (2) bridges are shown in Table 2. These two bridges were coded by Normal Bridge Routine.

2.2 Roughness Coefficients and Variables

The Manning's Roughness Coefficients were established by field descriptions taken in May of 1979. Through comparison with the materials and photographs shown in page 101 to page 123 in Chow's Open Channel Hydraulics (Ref. 3), the roughness coefficients for channel and flood plains were determined. In this study, the roughness coefficients for channel and flood plains are in the range of 0.035 to 0.04 and 0.05 to 0.12, respectively. The contraction and expansion coefficients used in the study are 0.2 and 0.4, respectively.

2.3 Starting Elevation and High Water Calibration

There is a high water mark at the sewage disposal site in Bridgeport. This high water mark of 594 feet was due to a discharge of 14,160 cfs on March 5 of 1976. This high water mark was used in the model in order to establish the 1976 water surface profile as shown in Figure 1. After the 1976 profile was established, the starting elevation and starting energy slope of the 1976 profile were then used in the Slope-area Method for 10-, 50-, 100-, and 500-year floods.

The start has been reduced 1.22 ft — reanalysis due to our 7/17/80 + 10/14/80 letters

2.4 Floodway Determinations

From previous study (Ref. 1), we know that the flooding of Cass River in Spaulding Township was regarded as Lacustrine with a very wide flooding area. Since our downstream study limit is only 15,000 feet upstream from the upstream corporate limit of Spaulding, a wide flooding in Bridgeport is also expected. However, in Bridgeport, there is a C & O Railroad track with high embankment along the left overbank of Cass River. The railroad is high enough to prevent any overflow over the railroad. Therefore the natural floodway needs to be encroached to pass through the C & O Railroad Bridge and the Main Street Bridge as shown in Figure 2.

3. RESULTS AND DISCUSSION

(1) The channel of Cass River in Bridgeport is only about 100 feet wide. For a meandering channel and wide flood plain which is about 2,000 feet to 3,000 feet downstream of C & O Railroad Bridge, we expect that only a small amount of discharge will stay in the channel, and from one station to the next station, the discharge in the right overbank may go to the left overbank. It indeed is the result as shown in the computer printout.

(2) The 100-year flood from the mouth to the corporate limit of this study is shown in Figure 3. The continuity between the Spaulding Township of previous study (Ref. 1) and this report is very good.

Reference

1. Flood Insurance Study, Township of Spaulding, Saginaw County, Michigan, U.S. Department of Housing & Urban Development, Federal Insurance Administration, 1979.
2. HEC-2 water surface profiles, Users Manual, Hydrological Engineering Center, Corps of Engineers, U.S. Army, August 1979.
3. Open-Channel Hydraulics, Ven Te Chow, McGraw-Hill, 1959.

TABLE 2

LOCATIONS OF CROSS SECTIONS

CROSS SECTION	SECNO	LOCATION
A	24860	Starting point, 24860' U/S from river mouth (4.7 river miles)
B	28610	3675' U/S from Section A
C	30735	2200' U/S from Section B High water mark - 594' for Q = 14160 cfs, 3-5-76
D	31900	Manufactured, 1165' U/S from Section C
E	33200	1300' U/S from Section D
F	33880	Manufactured, 680' U/S from Section E
G	34410 34411 34412 34413	C & O Railraod Bridge, width = 17.7', Length = 134' Normal Bridge Routine
H	34835 34836 34837 34838	State Street Bridge, Width = 18.2', Length = 250' Normal Bridge Routine
I	34885	Manufactured, 300' U/S from U/S face of State Street Bridge
J	35885	760' U/S from Section I

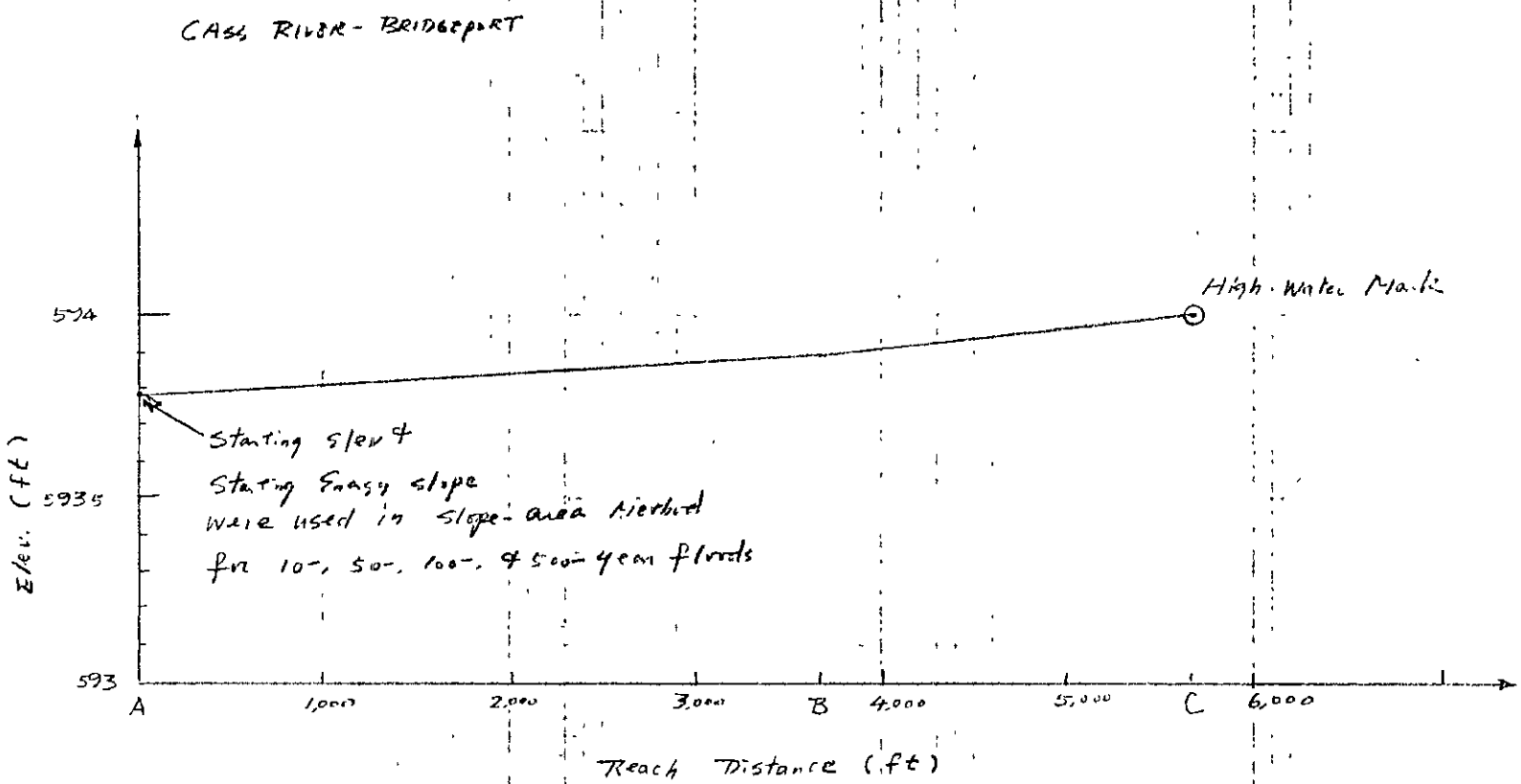


Fig 1. Water Surface Profile — Q = 14,160 cfs

E OF MICHIGAN

BRIDGEPORT QUADRANGLE
MICHIGAN—SAGINAW CO
7.5 MINUTE SERIES (TOPOGRAPHIC)

4270 IV NE (SAGINAW NE)

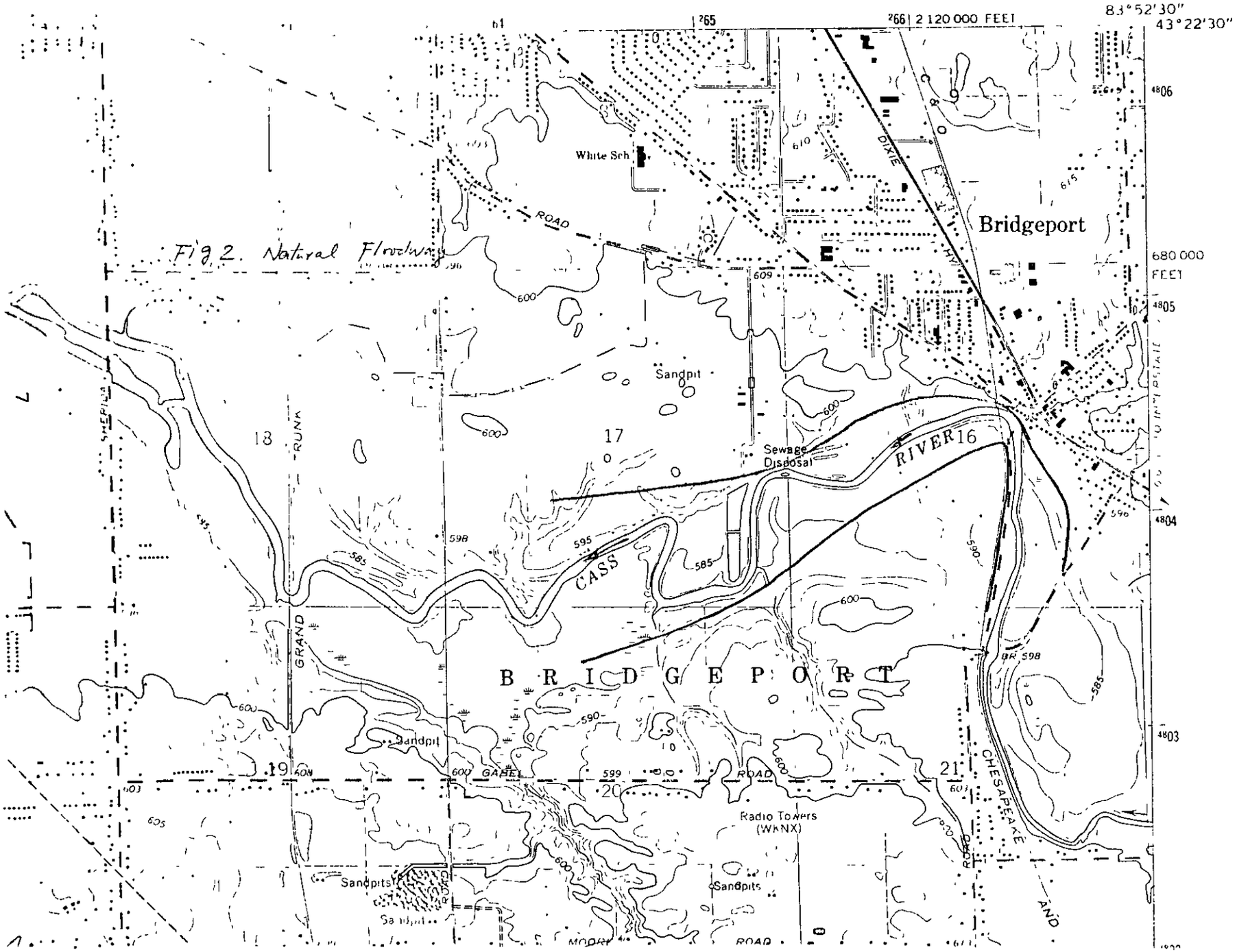


Fig 2. Natural Floodway

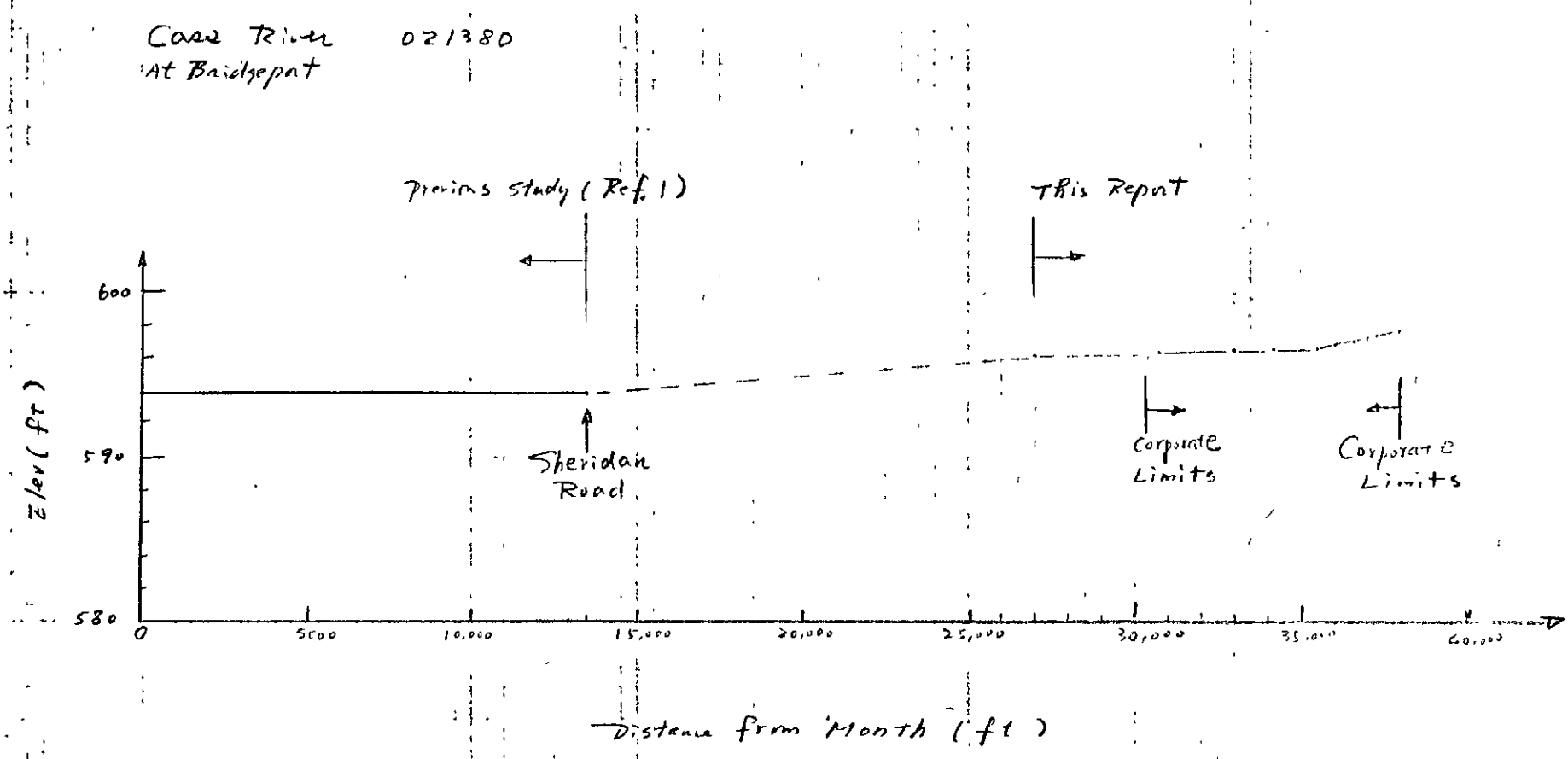
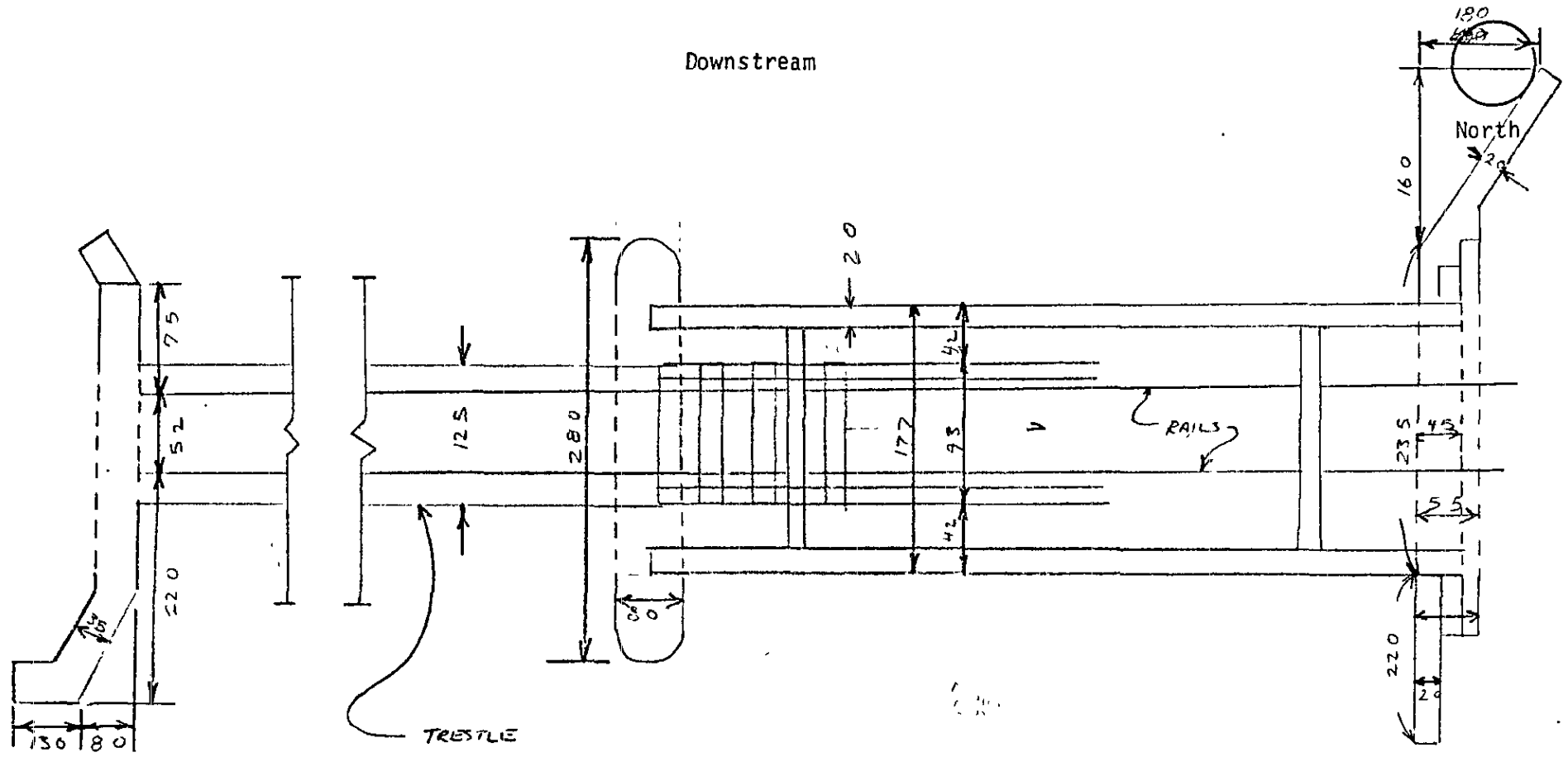


Fig 3. 100-year profile – Comparing with previous Study

BRIDGE DATA

Community:	Structure:	Type:	Station:

Downstream



Upstream

PLAN VIEW SKETCH

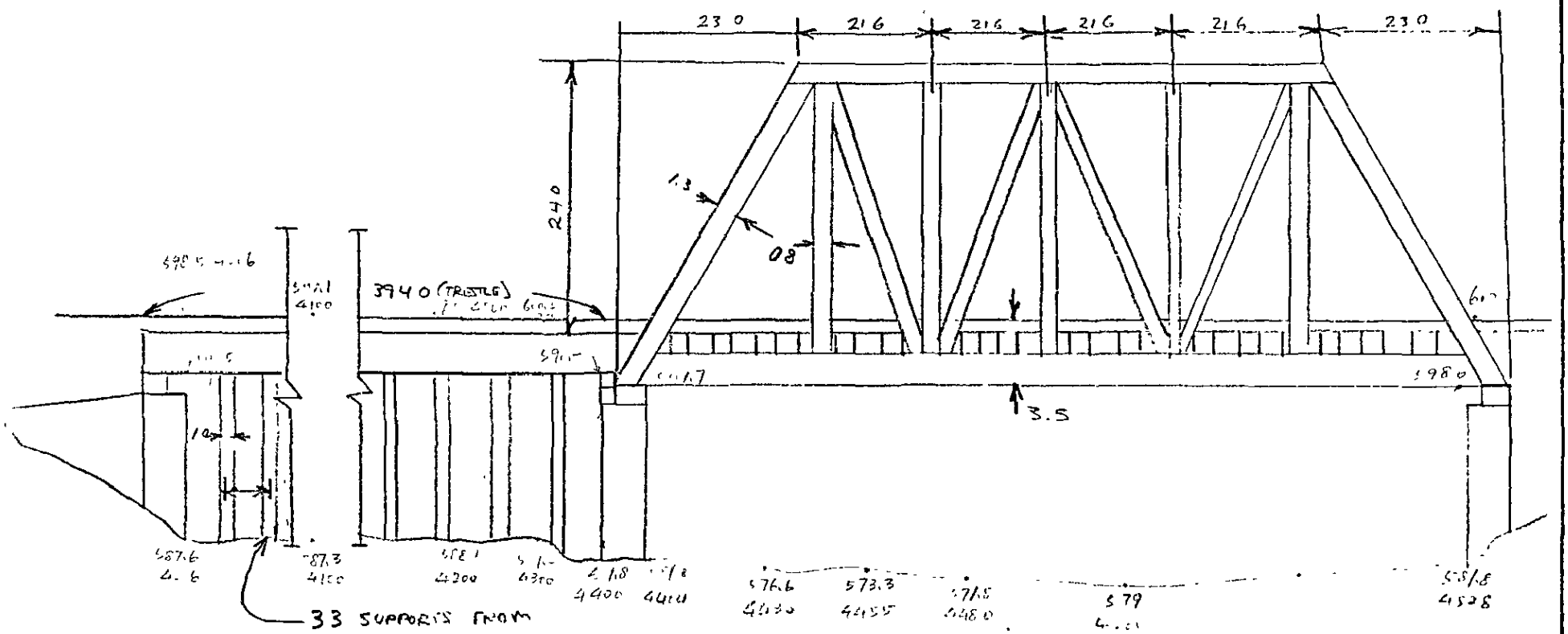
Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: _____

Date: _____

Sheet 2 of 2

Community: BRIDGEPORT	Structure: C&O RR BRIDGE OVER CASS RIVER	Type: STEEL TRUSS	Station: 344+10



PROFILE SKETCH
(Looking Downstream)

Length: 134 (BRIDGE) 394 TRESTLE	Width: 17.7	Skew: —	Water Elevation: 581.8
No. of Piers: -	Width of Piers: —	Shape of Piers: —	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

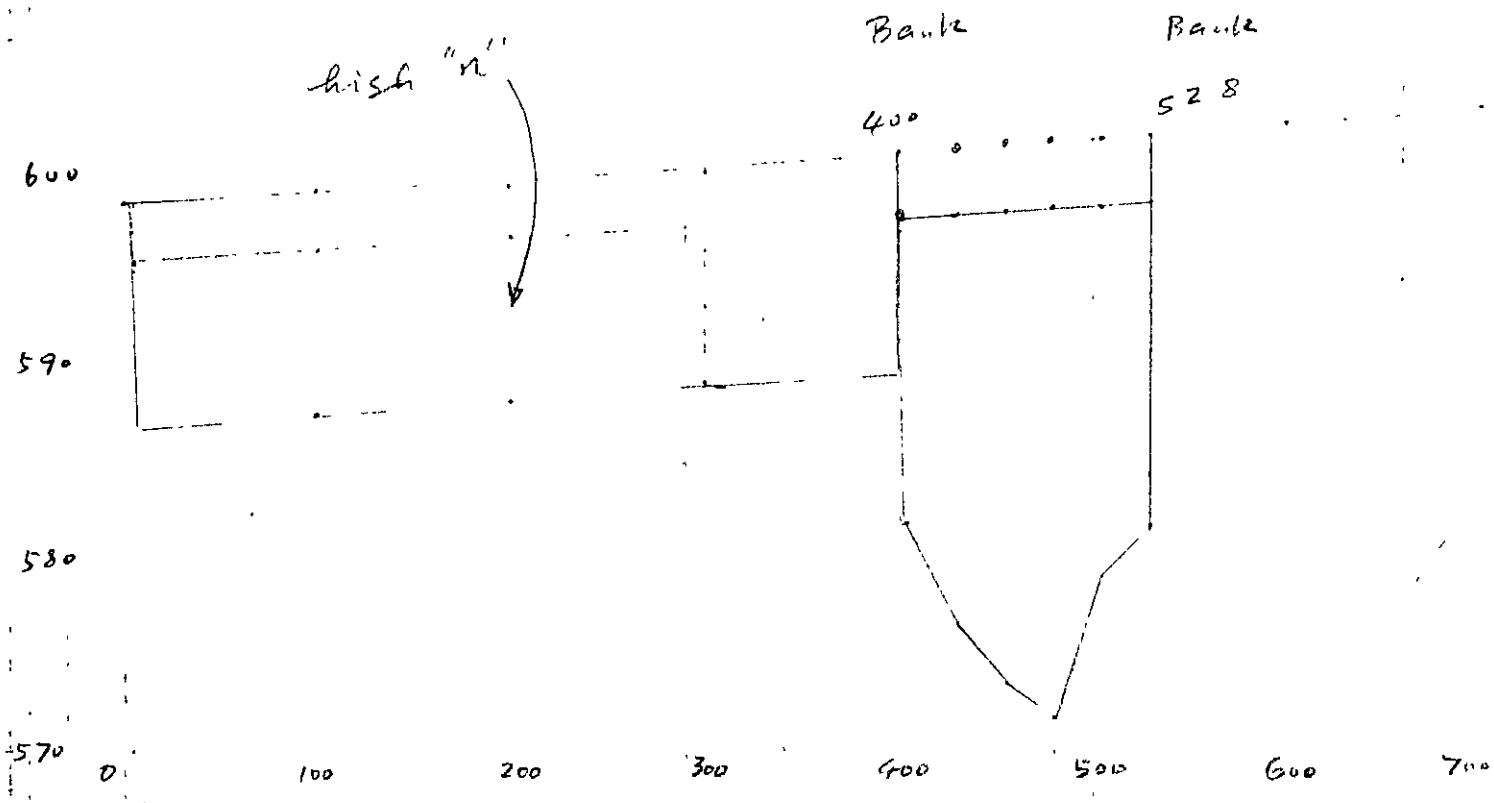
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC.

Date: 5/23/79

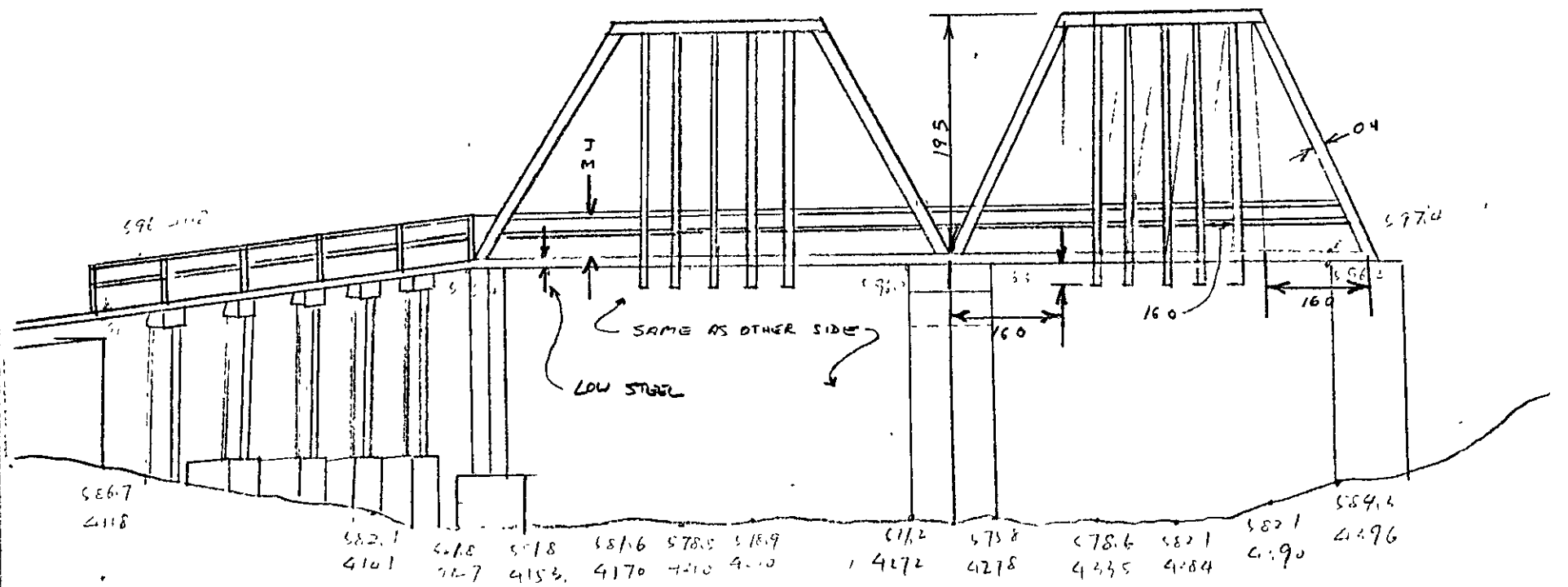
Sheet 1 of 2

C & O R.R. BRIDGE 344+10



By Normal Bridge Routine

Community: BRIDGEPORT	Structure: STATE ST BRIDGE (REMOVED)	Type: IRON TRUSS	Station: 348+35



PROFILE SKETCH
(Looking Downstream)

Length: 250.0	Width: 18.2	Skew: –	Water Elevation: 582.1
No. of Piers: 1	Width of Piers: 6.0	Shape of Piers: –	

Notes: PAVEMENT ON BRIDGE IS OVER WOOD PLANKS

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

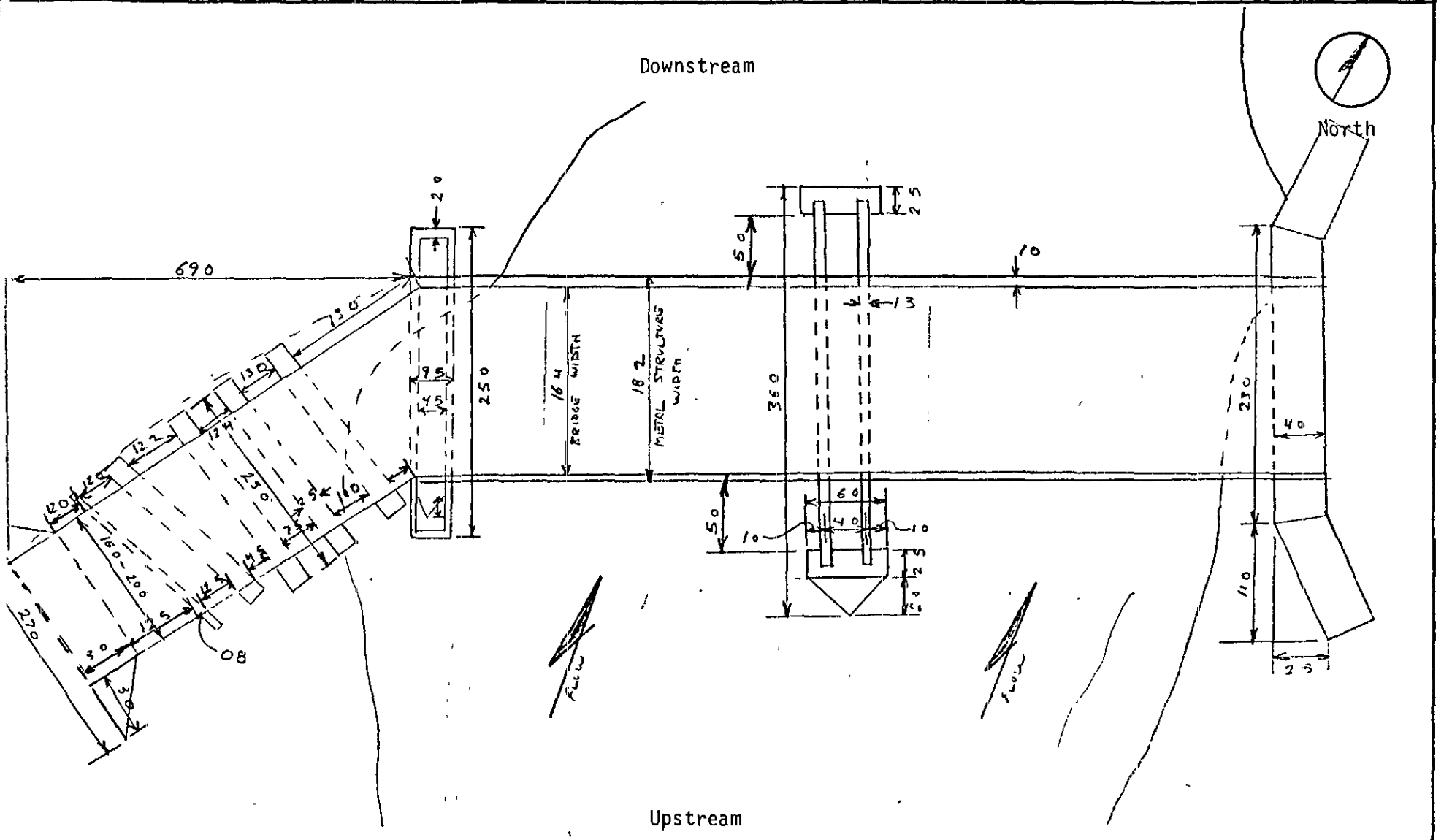
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 5/21/79

Sheet 1 of 2

Community: BRIDGEPORT	Structure: STATE ST BRIDGE	Type: [illegible] STEEL TRUSS	Station: [illegible]



PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485 0555

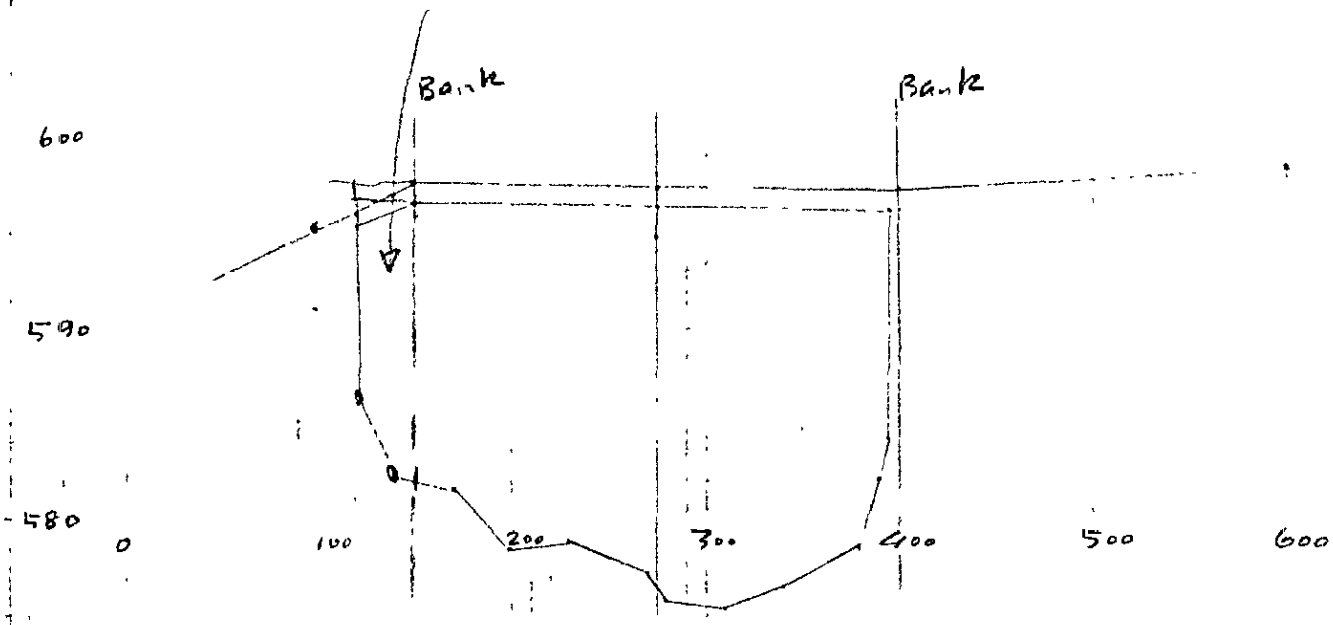
By: [illegible]

Date: 5/21/79

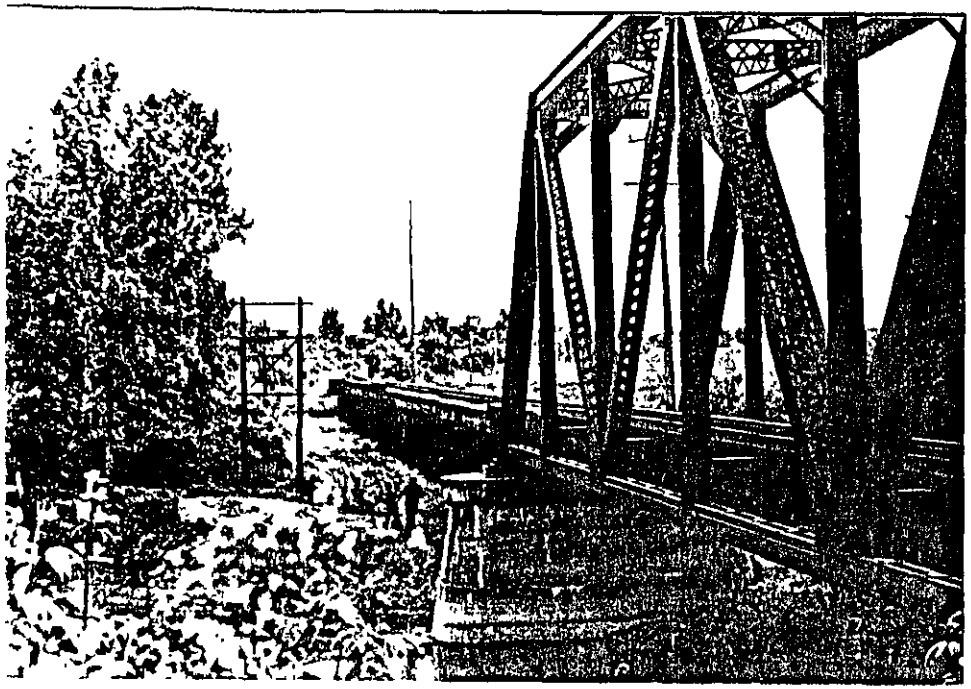
Sheet 2 of 2

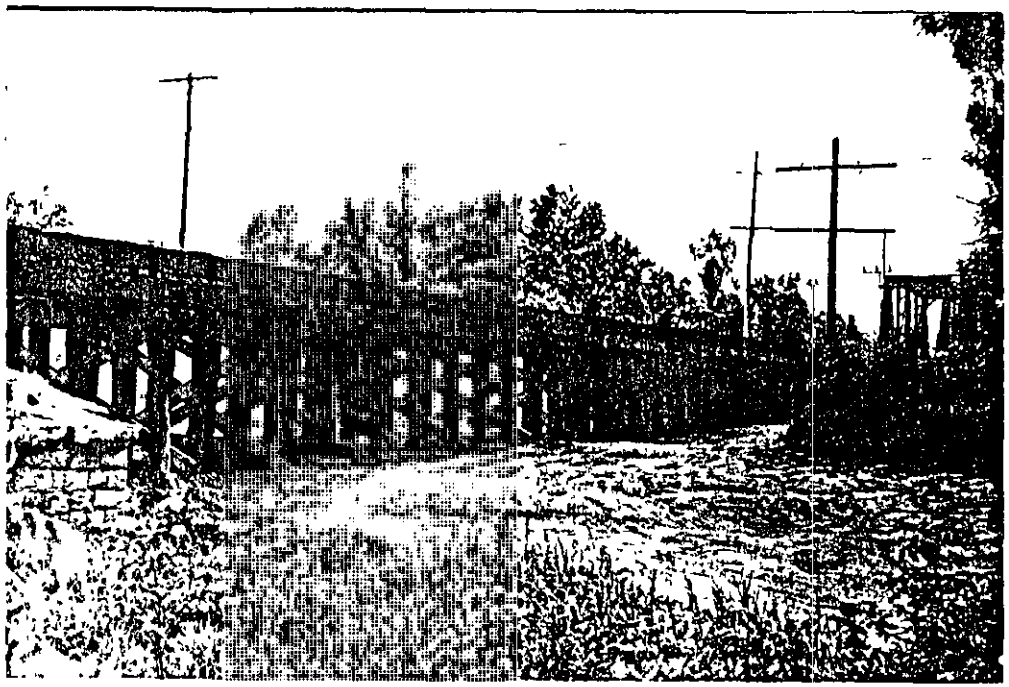
34835 STATE STREET BRIDGE

high "n" factor

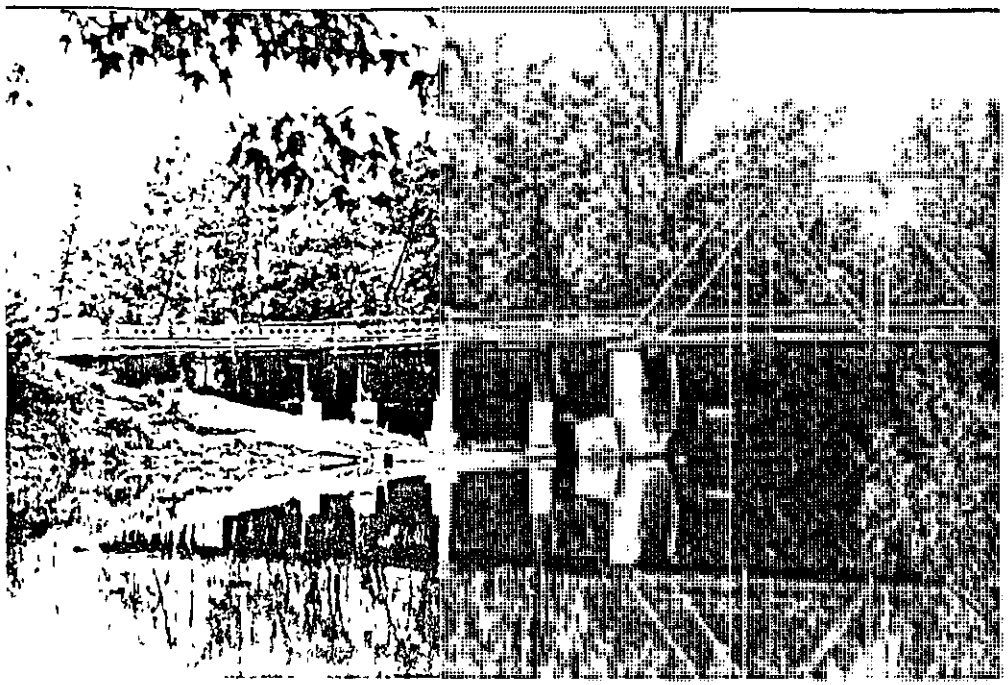


By Normal Bridge Routine





C & O
R.R. Bridge



State Street Bridge

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP.

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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**********************************************************
  HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**********************************************************
```

Summary printout 111880

```
C
T1      BRIDGEPORT  TOWNSHIP, PROJECT NO. 8558
T2      CASS RIVER
T3      CASS RIVER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
    -10.      2.        0.        0.   0.0          0.0       0.0       0.   593.810    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
    1.000     0.0       -1.000    0.0       0.0       0.0       0.0       0.0       0.0       0.0

J5  LPRNT     NUMSEC                        ********REQUESTED SECTION NUMBERS********
    -10.000   -10.000    0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

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**********************************************
 HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
**********************************************

T1
T2
T3

J1   ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        NSEL     FQ
       0.       3.       0.       0.     0.0        0.0      0.0      0.     594.680   0.0
J2   NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLOC    IBW      CHNIM    ITRACE
     2.000      0.0    -1.000     0.0      0.0      0.0      0.0      0.0      0.0      0.0
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MOORE BUSINESS FORMS INC 27

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.0         0.0       0.0       0.   595.000    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     3.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
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MOORE BUSINESS FORMS INC 27

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*****************************************************
  HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        5.        0.        0.  0.0           0.0       0.0       0.   595.880     0.0

J2  NPROF     IPLOT     PRFVS     KSECV     KSECH     FN        ALLOC     IBW       CHNIM     ITRACE

    15.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

MOORE BUSINESS FORMS INC 27

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*****************************************************
 HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
*****************************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	IOC*S	VCH	AREA	.01K
24850.000	24860.00	0.0	0.0	577.10	14260.00	593.81	0.0	593.82	0.38	1.29	18470.72	23139.03
24850.000	24860.00	0.0	0.0	577.10	19820.00	594.68	0.0	594.70	0.53	1.58	20560.03	27297.91
24850.000	24860.00	0.0	0.0	577.10	22030.00	595.00	0.0	595.02	0.58	1.68	21488.70	28914.42
24850.000	24860.00	0.0	0.0	577.10	27270.00	595.88	0.0	595.90	0.65	1.85	24154.20	33741.02
28610.000	3675.00	0.0	0.0	574.70	14260.00	593.92	0.0	593.94	0.82	1.93	15162.18	15771.11
28610.000	3675.00	0.0	0.0	574.70	19820.00	594.82	0.0	594.85	1.08	2.31	17408.37	19089.89
28610.000	3675.00	0.0	0.0	574.70	22030.00	595.16	0.0	595.19	1.17	2.43	18241.00	20399.20
28610.000	3675.00	0.0	0.0	574.70	27270.00	596.05	0.0	596.09	1.27	2.54	20513.95	24152.43
30735.000	2200.00	0.0	0.0	576.10	14260.00	594.04	0.0	594.05	0.54	1.76	17119.51	17811.35
30735.000	2200.00	0.0	0.0	576.10	19820.00	594.98	0.0	595.01	0.90	2.18	19059.57	20842.40
30735.000	2200.00	0.0	0.0	576.10	22030.00	595.33	0.0	595.36	1.00	2.32	19779.43	22018.18
30735.000	2200.00	0.0	0.0	576.10	27270.00	596.24	0.0	596.28	1.17	2.50	21580.57	25259.06
31900.000	1165.00	0.0	0.0	576.10	14260.00	594.11	0.0	594.15	0.93	2.46	16440.94	14754.48
31900.000	1165.00	0.0	0.0	576.10	19320.00	595.09	0.0	595.15	1.29	3.02	18395.53	17429.95
31900.000	1165.00	0.0	0.0	576.10	22030.00	595.45	0.0	595.51	1.43	3.22	19110.86	18452.31
31900.000	1165.00	0.0	0.0	576.10	27270.00	596.38	0.0	596.46	1.55	3.59	20970.23	21223.81
33200.000	1300.00	0.0	0.0	577.90	14260.00	594.24	0.0	594.36	2.13	3.48	10264.92	9750.84
33200.000	1300.00	0.0	0.0	577.90	19820.00	595.27	0.0	595.43	2.88	4.24	11738.80	11682.85
33200.000	1300.00	0.0	0.0	577.90	22030.00	595.64	0.0	595.82	3.14	4.50	12293.46	12434.61
33200.000	1300.00	0.0	0.0	577.90	27270.00	596.60	0.0	596.81	3.55	4.99	13723.81	14459.34
33880.000	680.00	0.0	0.0	577.90	14260.00	594.36	0.0	594.54	2.79	4.01	5830.83	8530.25
33880.000	680.00	0.0	0.0	577.90	19820.00	595.43	0.0	595.67	3.57	4.76	6945.93	10483.00
33880.000	680.00	0.0	0.0	577.90	22030.00	595.82	0.0	596.08	3.83	5.01	7363.16	11253.18
33880.000	680.00	0.0	0.0	577.90	27270.00	596.80	0.0	597.09	4.16	5.45	8420.25	13358.57
34410.000	500.00	0.0	0.0	571.80	14260.00	594.55	0.0	594.69	3.00	3.01	4737.68	8228.34
34410.000	500.00	0.0	0.0	571.80	19820.00	595.65	0.0	595.86	4.35	3.74	5306.13	9507.09
34410.000	500.00	0.0	0.0	571.80	22030.00	596.04	0.0	596.29	4.86	4.00	5510.52	9988.06
34410.000	500.00	0.0	0.0	571.80	27270.00	597.03	0.0	597.35	5.89	4.53	6022.16	11239.09
34411.000	1.00	598.50	602.70	571.80	14260.00	594.55	0.0	594.69	3.00	3.01	4737.79	8228.60
34411.000	1.00	598.50	602.70	571.80	19820.00	595.65	0.0	595.86	4.35	3.74	5306.37	9507.65
34411.000	1.00	598.50	602.70	571.80	22030.00	596.04	0.0	596.29	4.86	4.00	5510.52	9938.30
34411.000	1.00	598.50	602.70	571.80	27270.00	597.03	0.0	597.35	7.20	4.56	5973.74	10150.46

MOORE BUSINESS FORMS, INC 27

SECND	XLCH	ELTRD	ELLC	ELPIN	Q	CWSEL	CRIWS	ES	10K*S	VCH	AREA	.01K
34412.000	17.50	598.50	602.70	571.80	14260.00	594.55	0.0	594.70	3.00	3.01	4740.45	8234.37
34412.000	17.50	598.50	602.70	571.80	19820.00	595.65	0.0	595.87	4.34	3.73	5310.30	9516.78
34412.000	17.50	598.50	602.70	571.80	22030.00	596.05	0.0	596.30	4.85	3.99	5514.92	9998.53
34412.000	17.50	598.50	602.70	571.80	27270.00	597.04	0.0	597.36	7.21	4.56	5975.34	10157.51
34413.000	1.00	0.0	0.0	571.80	14260.00	594.55	0.0	594.70	3.00	3.01	4740.70	8234.92
34413.000	1.00	0.0	0.0	571.80	19820.00	595.66	0.0	595.87	4.34	3.73	5310.58	9517.65
34413.000	1.00	0.0	0.0	571.80	22030.00	596.05	0.0	596.30	4.85	3.99	5515.42	9999.74
34413.000	1.00	0.0	0.0	571.80	27270.00	597.05	0.0	597.36	5.87	4.52	6027.73	11253.05
34835.000	250.00	0.0	0.0	575.80	14260.00	594.57	0.0	594.76	1.26	3.57	4095.41	12724.79
34835.000	250.00	0.0	0.0	575.80	19820.00	595.66	0.0	595.99	1.96	4.52	4424.71	14151.68
34835.000	250.00	0.0	0.0	575.80	22030.00	596.05	0.0	596.43	2.25	5.01	4543.51	14637.65
34835.000	250.00	0.0	0.0	575.80	27270.00	597.09	0.0	597.59	5.49	5.77	4872.33	10708.15
34836.000	1.00	596.00	597.40	575.80	14260.00	594.57	0.0	594.76	1.26	3.57	4095.34	12724.45
34836.000	1.00	596.00	597.40	575.80	19820.00	595.66	0.0	595.99	1.97	4.52	4422.79	14131.71
34836.000	1.00	596.00	597.40	575.80	22030.00	596.05	0.0	596.43	2.27	5.01	4536.75	14629.11
34836.000	1.00	596.00	597.40	575.80	27270.00	597.07	0.0	597.50	13.56	5.39	4732.12	7378.25
34837.000	18.00	596.00	597.40	575.80	14260.00	594.57	0.0	594.77	1.25	3.57	4115.97	12743.06
34837.000	18.00	596.00	597.40	575.80	19820.00	595.66	0.0	595.99	1.96	4.51	4449.54	14158.05
34837.000	18.00	596.00	597.40	575.80	22030.00	596.05	0.0	596.44	2.26	5.00	4568.32	14657.93
34837.000	18.00	596.00	597.40	575.80	27270.00	597.11	0.0	597.63	13.58	5.35	4825.55	7399.45
34838.000	1.00	0.0	0.0	575.80	14260.00	594.57	0.0	594.77	1.25	3.57	4115.27	12744.32
34838.000	1.00	0.0	0.0	575.80	19820.00	595.66	0.0	595.99	1.95	4.51	4452.28	14191.21
34838.000	1.00	0.0	0.0	575.80	22030.00	596.05	0.0	596.44	2.24	5.00	4575.20	14720.53
34838.000	1.00	0.0	0.0	575.80	27270.00	597.14	0.0	597.64	5.36	5.72	4980.56	10816.30
34885.000	300.00	0.0	0.0	575.10	14260.00	594.70	0.0	594.84	3.37	3.53	5262.34	7250.15
34885.000	300.00	0.0	0.0	575.10	19820.00	595.91	0.0	596.11	5.03	4.35	6395.02	8834.50
34885.000	300.00	0.0	0.0	575.10	22030.00	596.35	0.0	596.58	5.42	4.59	6401.70	9451.84
34885.000	300.00	0.0	0.0	575.10	27270.00	597.52	0.0	597.88	5.74	4.95	7280.52	11383.10
35885.000	760.00	0.0	0.0	575.10	14260.00	594.92	0.0	595.10	2.41	4.18	6032.48	9192.92
35885.000	760.00	0.0	0.0	575.10	19820.00	596.20	0.0	596.43	2.91	4.83	7465.39	11624.04
35885.000	760.00	0.0	0.0	575.10	22030.00	596.57	0.0	596.91	3.06	5.04	7985.50	12601.95
35885.000	760.00	0.0	0.0	575.10	27270.00	597.96	0.0	598.21	3.06	5.28	9453.79	15587.10

MOORE BUSINESS FORMS, INC.

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
24860.000	14260.00	593.81	0.0	0.0	0.0	2464.04	24860.00
24860.000	19820.00	594.58	0.87	0.0	0.0	2569.61	24860.00
24860.000	22030.00	595.00	0.32	0.0	0.0	2608.45	24860.00
24860.000	27270.00	595.88	0.88	0.0	0.0	3100.00	24860.00
28610.000	14260.00	593.92	0.0	0.11	0.0	2465.08	3575.00
28610.000	19820.00	594.02	0.91	0.14	0.0	2494.06	3575.00
28610.000	22030.00	595.16	0.33	0.16	0.0	2508.85	3575.00
28610.000	27270.00	596.05	0.90	0.17	0.0	2562.54	3575.00
30735.000	14260.00	594.04	0.0	0.12	0.0	2027.59	2200.00
30735.000	19820.00	594.98	0.95	0.16	0.0	2069.27	2200.00
30735.000	22030.00	595.33	0.35	0.17	0.0	2080.00	2200.00
30735.000	27270.00	596.24	0.91	0.19	0.0	2080.00	2200.00
31900.000	14260.00	594.11	0.0	0.08	0.0	2000.00	1165.00
31900.000	19820.00	595.09	0.98	0.11	0.0	2000.00	1165.00
31900.000	22030.00	595.45	0.36	0.12	0.0	2000.00	1165.00
31900.000	27270.00	596.38	0.93	0.14	0.0	2000.00	1165.00
33200.000	14260.00	594.24	0.0	0.13	0.0	1424.88	1300.00
33200.000	19820.00	595.27	1.03	0.18	0.0	1462.54	1300.00
33200.000	22030.00	595.64	0.37	0.20	0.0	1490.00	1300.00
33200.000	27270.00	596.60	0.96	0.22	0.0	1490.00	1300.00
33880.000	14260.00	594.36	0.0	0.12	0.0	1009.12	580.00
33880.000	19820.00	595.43	1.07	0.16	0.0	1065.17	580.00
33880.000	22030.00	595.82	0.39	0.18	0.0	1069.85	580.00
33880.000	27270.00	596.80	0.98	0.20	0.0	1081.54	580.00
34410.000	14260.00	594.55	0.0	0.18	0.0	518.00	500.00
34410.000	19820.00	595.65	1.10	0.22	0.0	518.00	500.00
34410.000	22030.00	596.04	0.39	0.22	0.0	518.00	500.00
34410.000	27270.00	597.03	0.99	0.22	0.0	518.00	500.00
34411.000	14260.00	594.55	0.0	0.00	0.0	518.00	1.00
34411.000	19820.00	595.65	1.10	0.00	0.0	518.00	1.00
34411.000	22030.00	596.04	0.39	0.00	0.0	518.00	1.00
34411.000	27270.00	597.03	0.99	-0.00	0.0	518.00	1.00
34412.000	14260.00	594.55	0.0	0.01	0.0	518.00	17.50
34412.000	19820.00	595.65	1.10	0.01	0.0	518.00	17.50
34412.000	22030.00	596.05	0.40	0.01	0.0	518.00	17.50
34412.000	27270.00	597.04	0.99	0.01	0.0	518.00	17.50
34413.000	14260.00	594.55	0.0	0.00	0.0	518.00	1.00
34413.000	19820.00	595.66	1.10	0.00	0.0	518.00	1.00
34413.000	22030.00	596.05	0.40	0.00	0.0	518.00	1.00
34413.000	27270.00	597.05	1.00	0.01	0.0	518.00	1.00
34835.000	14260.00	594.57	0.0	0.01	0.0	299.63	250.00
34835.000	19820.00	595.66	1.09	0.00	0.0	304.30	250.00
34835.000	22030.00	596.05	0.39	-0.00	0.0	305.91	250.00
34835.000	27270.00	597.09	1.04	0.04	0.0	322.43	250.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
34836.000	14260.00	594.57	0.0	0.0	0.0	299.63	1.00
34836.000	19820.00	595.66	1.09	0.0	0.0	304.30	1.00
34836.000	22030.00	596.05	0.39	-0.00	0.0	305.91	1.00
34836.000	27270.00	597.07	1.03	-0.01	0.0	322.40	1.00
34837.000	14260.00	594.57	0.0	0.00	0.0	304.72	18.00
34837.000	19820.00	595.66	1.09	0.01	0.0	310.10	18.00
34837.000	22030.00	596.05	0.39	0.01	0.0	361.92	18.00
34837.000	27270.00	597.11	1.06	0.04	0.0	378.56	18.00
34838.000	14260.00	594.57	0.0	0.0	0.0	304.73	1.00
34838.000	19820.00	595.66	1.09	0.00	0.0	310.11	1.00
34838.000	22030.00	596.05	0.39	0.00	0.0	361.93	1.00
34838.000	27270.00	597.14	1.08	0.02	0.0	378.69	1.00
34885.000	14260.00	594.70	0.0	0.13	0.0	677.77	300.00
34885.000	19520.00	595.91	1.21	0.25	0.0	689.79	300.00
34885.000	22030.00	596.35	0.44	0.30	0.0	590.89	300.00
34885.000	27270.00	597.52	1.27	0.48	0.0	597.10	300.00
35835.000	14260.00	594.92	0.0	0.22	0.0	1098.94	760.00
35885.000	19820.00	596.20	1.28	0.29	0.0	1118.49	760.00
35885.000	22030.00	596.67	0.47	0.31	0.0	1120.30	760.00
35885.000	27270.00	597.96	1.30	0.34	0.0	1125.83	760.00

SUMMARY OF ERRORS

MOORE BUSINESS FORMS INC

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: KING DRAIN

4) DOCUMENT TYPE: 100YR

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************
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RECEIVED
FEB 3 1982
WATER MANAGEMENT

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C
T1      BRIDGEPORT TOWNSHIP, PROJECT NO 3558,KING5
T2      KING DRAIN
T3      KING DRAIN

J1  ICHECK    INC       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.000410      0.0       0.0       0.  582.000     0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     0.0       0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   150.000   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

QT      4.000    430.000    640.000    720.000    830.000    720.000      0.0       0.0       0.0       0.0
NC      0.035      0.035      0.030      0.100      0.300      0.0        0.0       0.0       0.0       0.0

        A   BACKWATER OF SAGINAW RIVER FOR 100-YEAR IS 593.86

            FOOT BRIDGE  IN WICKES PARK, TR 583.4, LC 583.0

X1    300.000     15.000    490.000    532.000    315.000    315.000    315.000      0.0       0.0       0.0
X3      0.0        0.0        0.0      490.000      0.0      532.000      0.0       0.0       0.0       0.0
GR    586.200      0.0      584.700    270.000    583.400    490.000    580.900    490.000    576.200    505.000
GR    577.200    518.000    579.900    529.000    580.900    532.000    583.400    532.000    583.000    573.000
GR    586.700    632.000    584.300    587.000    582.300    838.000    585.300    900.000    591.500   1430.000

X1    301.000      0.0        0.0        0.0        1.000      1.000      1.000      0.0       0.0       0.0
X3      0.0        0.0        0.0      490.000      0.0      532.000      0.0       0.0       0.0       0.0
BT     15.000      0.0      586.200    586.200    270.000    584.700    584.700    490.000    583.400    580.900
BT    490.000    585.800    580.900    505.000    587.500    582.700    518.000    587.500    582.700    529.000
BT    586.100    531.100    532.000    585.800    580.900    532.000    583.400    580.900    573.000    583.000
BT    583.000    632.000    586.700    586.700    587.000    584.300    584.300    838.000    582.300    582.800
BT    900.000    585.300    535.300   1430.000    591.500    591.500      0.0       0.0       0.0       0.0

X1    302.000      0.0        0.0        0.0        5.200      5.200      5.200      0.0       0.0       0.0
X2      0.0        0.0        0.0        0.0        0.0        0.0        1.000      0.0       0.0       0.0
X3      0.0        0.0        0.0      490.000      0.0      532.000      0.0       0.0       0.0       0.0

X1    303.000      0.0        0.0        0.0        1.000      1.000      1.000      0.0       0.0       0.0
X3      0.0        0.0        0.0      490.000      0.0      532.000      0.0       0.0       0.0       0.0

        B

X1    400.000     10.000    425.000    530.000     80.000     80.000     80.000      0.0       0.0       0.0
X3      0.0        0.0        0.0      425.000      0.0      530.000      0.0       0.0       0.0       0.0
GR    584.300    270.000    582.600    425.000    580.900    430.000    576.900    460.000    575.300    490.000
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GR	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
NC	0.030	0.030	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

C

X1	1120.000	13.000	1004.000	1053.000	720.000	720.000	720.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1004.000	0.0	1053.000	0.0	0.0	0.0	0.0
GR	587.300	0.0	587.100	400.000	583.400	800.000	584.900	1004.000	581.000	1007.000
GR	578.300	1020.000	577.900	1035.000	581.000	1051.000	582.600	1053.000	584.300	1200.000
GR	586.500	1340.000	590.400	1400.000	593.400	1440.000	0.0	0.0	0.0	0.0

D FOOT BRIDGE IN EASTMOST NICKES PARK, LC 584.1, TR 584.5

X1	1200.000	13.000	1000.000	1042.000	90.000	90.000	90.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1000.000	0.0	1042.000	0.0	0.0	0.0	0.0
GR	586.600	0.0	586.600	400.000	586.200	600.000	583.800	800.000	584.500	1000.000
GR	581.000	1002.000	577.900	1021.000	581.000	1040.000	584.500	1042.000	584.400	1200.000
GR	587.700	1342.000	589.300	1400.000	593.900	1440.000	0.0	0.0	0.0	0.0

X1	1201.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1000.000	0.0	1042.000	0.0	0.0	0.0	0.0
BT	7.000	800.000	583.300	583.800	1000.000	584.500	584.500	1002.000	587.300	582.500
BT	1021.000	588.700	584.100	1040.000	587.200	582.300	1042.000	584.500	584.500	1200.000
BT	584.400	584.400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	1202.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1000.000	0.0	1042.000	0.0	0.0	0.0	0.0

X1	1203.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1000.000	0.0	1042.000	0.0	0.0	0.0	0.0

E

X1	1300.000	13.000	993.000	1038.000	85.000	85.000	85.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	993.000	0.0	1038.000	0.0	0.0	0.0	0.0
GR	586.200	0.0	586.700	400.000	583.700	800.000	585.100	993.000	581.000	994.000
GR	578.300	1010.000	578.100	1025.000	581.000	1036.000	582.500	1038.000	584.500	1200.000
GR	588.200	1340.000	591.700	1400.000	593.600	1440.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

F

X1	2100.000	10.000	480.000	519.000	300.000	300.000	300.000	0.0	0.0	0.0
GR	589.700	0.0	590.400	300.000	587.100	480.000	581.000	482.000	580.300	495.000
GR	580.400	507.000	581.000	518.000	586.600	519.000	587.400	600.000	591.800	650.000

G

X1	2800.000	6.000	108.500	149.000	700.000	700.000	700.000	0.0	0.0	0.0
GR	589.700	0.0	590.400	108.500	578.100	120.000	578.100	140.000	588.000	149.000
GR	591.800	350.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.030	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

H CULVERT WEST OF EAST ST., TR 586.6, CROWN 584.9, INVERT 577.9

6.9X20X25 CMP

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X1   2926.000     15.000    490.000    510.000    114.000    114.000    114.000      0.0        0.0        0.0
GR   589.700      0.0      590.400    300.000    586.600    490.000    579.500    490.000    578.800    490.300
GR   586.400    491.000    577.900    492.500    577.900    507.500    570.400    509.000    578.800    509.700
GR   579.500    510.000    586.600    510.000    586.600    519.000    587.400    600.000    591.800    650.000
SB     0.0        2.590      2.500      0.0       20.000      0.0      136.000      0.0      578.000    573.000

X1   2927.000      0.0        0.0        0.0       25.000     25.000     25.000      0.0        0.0        0.0
X2     0.0        0.0        1.000    584.900    586.600      0.0        0.0        0.0        0.0        0.0
BT    10.000    300.000    590.400    590.400    490.000    586.600    583.500    490.500    586.600    584.200
BT   491.000    536.600    584.600    492.500    586.600    584.900    507.500    586.600    584.900    509.000
BT   586.600    584.600    509.700    586.600    584.200    510.000    536.600    583.500    519.000    586.600
BT   586.600      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

I   EAST ST. BRIDGE  M-13 , LC 536.4, TR 589.7

X1   3319.000      9.000   1001.000   1022.000    359.000    359.000    359.000      0.0        0.0        0.0
X3    10.000      0.0        0.0        0.0        0.0        0.0        0.0      589.700    589.700      0.0
GR   589.600    800.000    589.700   1001.000    579.400   1001.000    579.300   1003.000    579.200   1015.000
GR   580.100   1022.000    589.700   1022.000    589.700   1200.000    590.000   1400.000      0.0        0.0

X1   3320.000      0.0        0.0        0.0       1.000      1.000      1.000      0.0        0.0        0.0
X3    10.000      0.0        0.0        0.0        0.0        0.0        0.0      589.700    589.700      0.0
BT     7.000    300.000    589.600    589.600   1001.000    592.700    586.400   1003.000    592.700    586.400
BT   1015.000    592.700    586.400   1022.000    592.700    586.400   1200.000    589.500    589.500   1400.000
BT   590.000    590.000      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

X1   3321.000      0.0        0.0        0.0       42.000     42.000     42.000      0.0        0.0        0.0
X2     0.0        0.0        0.0        0.0        0.0        0.0       1.000      0.0        0.0        0.0
X3    10.000      0.0        0.0        0.0        0.0        0.0        0.0      589.700    589.700      0.0

X1   3322.000      0.0        0.0        0.0       1.000      1.000      1.000      0.0        0.0        0.0
X3    10.000      0.0        0.0        0.0        0.0        0.0        0.0      589.700    589.700      0.0

J   DITCH BOTTOM 20 FT

X1   3400.000      6.000    110.500    149.500     65.000     65.000     65.000      0.0        0.0        0.0
GR   588.900      0.0      587.500    110.500    579.700    120.000    579.700    140.000    587.400    149.500
GR   589.100    250.000      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0

K   STATION 36+64-CONFLUENCE PT WITH LULL DRAIN

X1   3600.000      0.0        0.0        0.0      200.000    200.000    200.000      0.0       0.200       0.0
NC     0.030      0.050      0.030      0.100      0.300      0.0        0.0        0.0        0.0        0.0
QT     4.000    290.000    400.000    435.000    560.000    435.000      0.0        0.0        0.0        0.0

L   U/S FROM THE CONFLUENCE WITH LULL DRAIN

X1   3750.000      8.000    983.000   1018.000    145.000    145.000    145.000      0.0        0.0        0.0
GR   590.000    940.000    585.000    983.000    581.000    987.000    579.000    995.000    579.100   1005.000
GR   581.000   1014.000    585.000   1018.000    585.000   1030.000      0.0        0.0        0.0        0.0

M

X1   3800.000     10.000    490.000    518.000    455.000    455.000    455.000      0.0        0.0        0.0
X3     0.0        0.0        0.0      483.000      0.0      533.000      0.0        0.0        0.0        0.0
GR   587.300      0.0      539.200    300.000    584.200    490.000    581.400    501.000    580.600    505.000
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NC      0.0       0.0       0.0       0.300     0.500     0.0       0.0       0.0       0.0       0.0

        N   BANNER ST BRIDGE, TR 588.1, LC 587.0

X1   3350.000     15.000   502.000   519.000   100.000   100.000   100.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     410.000     0.0     610.000     0.0       0.0       0.0       0.0
GR    588.200     0.0     583.300   328.000   589.400   346.000   588.100   502.000   582.700   502.000
GR    581.400   505.000   580.300   510.000   580.600   514.000   581.400   518.000   582.400   519.000
GR    588.300   519.000   589.300   600.000   590.400   790.000   589.800   315.000   589.600   900.000

X1   3851.000     0.0       0.0       0.0       5.000     5.000     5.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     410.000     0.0     610.000     0.0       0.0       0.0       0.0
BT      4.000   346.000   589.400   589.400   502.300   588.100   587.000   519.000   588.300   587.000
BT    600.000   589.800   589.300     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1   3852.000     0.0       0.0       0.0      25.000    25.000    25.000     0.0       0.0       0.0
X2      0.0       0.0       0.0       0.0       0.0       0.0       1.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     410.000     0.0     610.000     0.0       0.0       0.0       0.0

X1   3853.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     410.000     0.0     610.000     0.0       0.0       0.0       0.0

        O

X1   3900.000    11.000   509.000   526.000   100.000   100.000   100.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     492.000     0.0     542.000     0.0       0.0       0.0       0.0
GR    587.800     0.0     587.800   300.000   584.200   509.000   581.400   510.000   580.600   515.000
GR    580.500   520.000   581.400   524.000   584.400   526.000   589.500   790.000   590.000   900.000
GR    589.900  1000.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.030     0.100     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        P

X1   4000.000    16.000   599.000   628.000   480.000   480.000   480.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     563.000     0.0     663.000     0.0       0.0       0.0       0.0
GR    589.100     0.0     583.000   139.000   583.300   184.000   584.100   463.000   589.600   503.000
GR    585.200   599.000   581.500   606.000   580.700   610.000   580.500   615.000   581.500   621.000
GR    585.800   628.000   586.400   634.000   585.000   660.000   584.300   785.000   591.800   896.000
GR    593.200  1116.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0

        Q

X1   5575.000    13.000   991.000  1019.000  1470.000  1470.000  1470.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     930.000     0.0    1030.000     0.0       0.0       0.0       0.0
GR    589.500     0.0     589.900   500.000   589.500   900.000   586.600   991.000   582.400   996.000
GR    581.700  1000.000   581.900  1004.000   582.400  1008.000   582.400  1012.000   587.700  1019.000
GR    587.900  1100.000   592.900  1300.000   593.000  1645.000     0.0       0.0       0.0       0.0
NC      0.035     0.040     0.035     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        R   CASEY RD. BRIDGE, 83X128X40 CMP, TR 590.5, CROWN 588.8, INVERT 581.9

X1   5625.000    17.000   990.000  1002.000   100.000   100.000   100.000     0.0       0.0       0.0
X3     10.000     0.0       0.0       0.0       0.0       0.0       0.0     589.000   589.000     0.0
GR    590.400     0.0     590.600   500.000   590.000   900.000   539.100   976.000   584.200   990.000
GR    582.700   991.000   582.300   992.000   582.100   994.000   581.900   996.000   582.100   998.000
GR    582.300  1000.000   582.700  1001.000   584.200  1002.000   586.500  1010.000   590.700  1100.000
GR    593.200  1300.000   593.600  1645.000     0.0       0.0       0.0       0.0       0.0       0.0
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NC	0.030	0.030	0.032	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	5626.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	895.000	0.0	1095.000	0.0	589.000	589.000	0.0
BT	17.000	0.0	590.400	590.400	590.000	590.600	590.600	900.000	590.000	390.000
BT	976.000	589.100	589.100	990.000	590.000	584.200	991.000	590.100	536.500	992.000
BT	590.200	587.700	991.000	590.300	583.500	995.000	590.500	588.900	998.000	590.500
BT	586.500	1000.000	589.500	587.700	1001.000	589.500	586.500	1002.000	587.500	584.200
BT	1010.000	586.500	586.500	1100.000	590.700	590.700	1300.000	593.200	593.200	1645.000
BT	593.600	593.600	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	5627.000	0.0	0.0	0.0	40.000	40.000	40.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	895.000	0.0	1095.000	0.0	590.500	590.500	0.0
NC	0.035	0.040	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	5628.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	590.500	0.0	1095.000	0.0	590.500	590.500	0.0

S

X1	5675.000	12.000	957.000	992.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	955.000	0.0	1005.000	0.0	0.0	0.0	0.0
GR	589.200	0.0	589.500	500.000	588.500	900.000	587.100	967.000	582.400	970.000
GR	581.900	975.000	581.600	980.000	582.400	985.000	587.700	992.000	589.200	1100.000
GR	594.000	1300.000	593.100	1645.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.040	0.050	0.100	0.300	0.0	0.0	0.0	0.0	0.0

T

X1	6075.000	12.000	477.000	510.000	1170.000	1170.000	1170.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	477.000	0.0	510.000	0.0	0.0	0.0	0.0
GR	593.400	0.0	592.600	200.000	589.700	400.000	589.600	477.000	583.900	485.000
GR	583.100	490.000	583.100	497.000	583.900	503.000	592.000	510.000	595.000	600.000
GR	594.500	800.000	595.600	1006.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.200	0.400	0.0	0.0	0.0	0.0	0.0

U WASHINGTON ST. CULVERT, 13-11X8-7X20 CMP, TR 593.6, CROWN 591.4

INVERT 582.8

X1	6125.000	21.000	492.500	507.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	593.500	593.500	0.0
GR	595.100	0.0	593.400	200.000	593.100	400.000	585.800	475.000	585.000	490.000
GR	585.000	492.500	584.000	493.000	583.300	494.000	583.000	496.000	582.900	498.000
GR	582.800	500.000	582.900	502.000	583.000	504.000	583.300	506.000	584.000	507.000
GR	585.000	507.500	586.300	510.000	590.900	510.000	594.100	600.000	595.300	800.000
GR	596.000	1000.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.032	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	6126.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	593.800	593.800	0.0
BT	20.000	0.0	595.100	595.100	200.000	593.400	593.400	400.000	593.100	593.100
BT	475.000	593.800	585.300	490.000	593.400	585.000	492.500	593.800	585.000	493.000
BT	593.800	588.200	494.000	593.300	590.200	496.000	593.800	590.400	498.000	593.800
BT	591.000	500.000	593.300	591.400	502.000	593.800	591.000	504.000	593.300	590.400
BT	506.000	593.800	589.200	507.000	593.300	588.200	507.500	593.800	585.000	510.000
BT	593.300	590.900	600.000	594.100	594.100	800.000	595.300	595.300	1000.000	596.000
BT	596.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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X1    6127.000      0.0       0.0       0.0      50.000    50.000    50.000     0.0       0.0       0.0
X2       0.0        0.0       0.0       0.0       0.0       0.0      1.000      0.0       0.0       0.0
X3      10.000      0.0       0.0       0.0       0.0       0.0       0.0     593.300   593.800     0.0
NC       0.040      0.040     0.050     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1    6128.000      0.0       0.0       0.0       5.000     5.000     5.000     0.0       0.0       0.0
X3      10.000      0.0       0.0       0.0       0.0       0.0       0.0     593.800   593.800     0.0

      V

X1    6175.000     12.000   463.000   514.000   100.000   100.000   100.000     0.0       0.0       0.0
X3       0.0        0.0       0.0     463.000     0.0     514.000     0.0       0.0       0.0       0.0
GR     593.200      0.0     591.200   200.000   589.600   400.000   590.900   468.000   583.900   475.000
GR     583.000    485.000   583.300   494.000   583.900   504.000   591.300   514.000   594.000   500.000
GR     595.200    800.000   596.000  1000.000     0.0       0.0       0.0       0.0       0.0       0.0
NC       0.035      0.040     0.075     0.100     0.300     0.0       0.0       0.0       0.0       0.0

      W

X1    7050.000     11.000   437.000   479.000   795.000   795.000   795.000     0.0       0.0       0.0
X3       0.0        0.0       0.0     410.000     0.0     510.000     0.0       0.0       0.0       0.0
GR     594.300      0.0     593.300   170.000   595.100   200.000   591.100   437.000   584.500   453.000
GR     584.200    457.000   584.000   461.000   584.500   464.000   592.000   479.000   595.900   989.000
GR     594.600   1290.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC       0.040      0.040     0.075     0.0       0.0       0.0       0.0       0.0       0.0       0.0

      X

X1    8125.000     13.000   996.000  1025.000  1030.000  1030.000  1030.000     0.0       0.0       0.0
X3       0.0        0.0       0.0     960.000     0.0    1035.000     0.0       0.0       0.0       0.0
GR     596.300      0.0     594.100   500.000   593.300   900.000   592.700   995.000   586.800  1001.000
GR     586.100   1007.000   585.500  1010.000   585.400  1012.000   586.100  1015.000   592.400  1025.000
GR     593.100   1100.000   595.000  1600.000   595.700  2000.000     0.0       0.0       0.0       0.0

      Y  SHERIDAN RD. CULVERT, 6-7X9-9X44 CMP, TR 594.7, CROWN 591.5

           INVERT 584.9

X1    8175.000     15.000   995.000  1005.000   100.000   100.000   100.000     0.0       0.0       0.0
X3       0.0        0.0       0.0     930.000     0.0    1025.000     0.0       0.0       0.0       0.0
GR     597.300      0.0     596.400   500.000   594.300   900.000   591.800   984.000   587.000   995.000
GR     585.500    996.000   585.000   998.000   584.900  1000.000   585.000  1002.000   585.500  1004.000
GR     587.000   1005.000   591.800  1017.000   594.700  1100.000   596.500  1500.000   597.700  2000.000
SB       0.0        2.380     2.500   100.000    10.000     0.0      51.000     0.0      586.000   596.000

X1    8176.000      0.0       0.0       0.0      44.000    44.000    44.000     0.0       0.0       0.0
X2       0.0        0.0       1.000   591.500   594.700     0.0       0.0       0.0       0.0       0.0
X3       0.0        0.0       0.0     950.000     0.0    1025.000     0.0       0.0       0.0       0.0
BT      11.000    930.000   594.800   594.800   984.000   594.800   591.800   995.000   594.800   587.000
BT     996.000    594.800   589.400   998.000   594.800   591.000  1000.000   594.800   591.500  1002.000
BT     594.800    591.000  1004.000   594.800   589.500  1005.000   594.800   587.000  1017.000   594.700
BT     591.800   1025.000   594.800   594.800     0.0       0.0       0.0       0.0       0.0       0.0
QT       4.000    250.000   340.000   375.000   450.000   375.000     0.0       0.0       0.0       0.0

      Z

X1    8225.000     12.000   979.000  1013.000   100.000   100.000   100.000     0.0       0.0       0.0
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[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GR	595.300	0.0	594.100	500.000	593.600	900.000	591.400	979.000	586.100	990.000
GR	585.000	996.000	585.100	1002.000	586.100	1007.000	591.400	1013.000	594.000	1100.000
GR	594.900	1600.000	596.500	2000.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.040	0.070	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AA

X1	9880.000	10.000	984.000	1019.000	1500.000	1500.000	1500.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	900.000	0.0	1100.000	0.0	0.0	0.0	0.0
GR	597.400	0.0	595.600	500.000	594.000	984.000	587.800	993.000	587.000	990.000
GR	586.700	1002.000	587.800	1006.000	594.000	1019.000	596.400	1590.000	597.500	2000.000
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AB FARM CULVERT,9-6X6-5X40 CMP, TR 594.7, CROWN 593.9, INVERT 587.5

X1	9930.000	15.000	995.000	1005.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	950.000	0.0	1050.000	0.0	594.700	594.700	0.0
GR	596.700	0.0	595.300	500.000	594.500	983.000	589.000	994.000	589.000	995.000
GR	587.800	996.000	587.400	998.000	587.300	1000.000	587.400	1002.000	587.800	1004.000
GR	589.000	1005.000	589.000	1006.000	594.300	1019.000	596.000	1590.000	597.100	2000.000
NC	0.035	0.035	0.032	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	9931.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	950.000	0.0	1050.000	0.0	594.700	594.700	0.0
BT	15.000	0.0	596.700	596.700	500.000	595.300	595.300	983.000	594.500	594.500
BT	994.000	594.500	589.000	995.000	594.500	589.000	995.000	594.600	591.800	998.000
BT	594.700	593.500	1000.000	594.700	593.900	1002.000	594.700	593.500	1004.000	594.600
BT	591.300	1005.000	594.500	589.000	1006.000	594.500	589.000	1019.000	594.300	594.300
BT	1590.000	596.000	596.000	2000.000	597.100	597.100	0.0	0.0	0.0	0.0

X1	9932.000	0.0	0.0	0.0	45.000	45.000	45.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	950.000	0.0	1050.000	0.0	0.0	0.0	0.0
NC	0.040	0.040	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	9933.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	950.000	0.0	1050.000	0.0	0.0	0.0	0.0

AC

X1	9980.000	12.000	980.000	1017.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	900.000	0.0	1100.000	0.0	0.0	0.0	0.0
GR	596.400	0.0	595.500	500.000	594.600	980.000	587.900	993.000	587.800	997.000
GR	587.400	999.000	587.300	1001.000	587.800	1002.000	583.600	1006.000	594.300	1017.000
GR	595.700	1590.000	597.400	2000.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.045	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AD

X1	10800.000	12.000	1007.000	1037.000	660.000	660.000	660.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	960.000	0.0	1080.000	0.0	0.0	0.0	0.0
GR	597.600	0.0	598.500	500.000	596.100	900.000	593.600	1007.000	588.800	1013.000
GR	587.800	1016.000	583.000	1019.000	588.800	1021.000	593.300	1037.000	593.800	1100.000
GR	598.400	1600.000	596.500	2000.000	0.0	0.0	0.0	0.0	0.0	0.0

AE G.T.W.R.R. BRIDGE, TR 600.4, LC 596.4

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	600.400	600.400	0.0
GR	600.300	0.0	600.300	500.000	600.500	900.000	600.400	1000.000	591.100	1000.000
GR	588.800	1012.000	588.400	1014.000	583.600	1017.000	583.800	1020.000	593.300	1033.000
GR	600.300	1033.000	600.300	1100.000	600.300	1500.000	600.300	2000.000	0.0	0.0
X1	10851.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	596.400	600.300	0.0	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	600.400	600.400	0.0
X1	10852.000	0.0	0.0	0.0	12.000	12.000	12.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	596.400	600.300	0.0	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	600.400	600.400	0.0
X1	10853.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	600.400	600.400	0.0

AF

X1	10900.000	12.000	998.000	1025.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	986.500	0.0	1036.500	0.0	0.0	0.0	0.0
GR	598.200	0.0	597.300	500.000	595.900	900.000	594.500	998.000	588.300	1005.000
GR	587.900	1008.000	588.200	1011.000	588.800	1014.000	593.300	1025.000	594.700	1100.000
GR	597.900	1600.000	596.900	2000.000	0.0	0.0	0.0	0.0	0.0	0.0

AG

X1	11150.000	0.0	0.0	0.0	195.000	195.000	195.000	0.0	0.300	0.0
X3	0.0	0.0	0.0	940.000	0.0	1080.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AH

X1	12150.000	0.0	0.0	0.0	1060.000	1060.000	1060.000	0.0	1.300	0.0
X3	0.0	0.0	0.0	946.500	0.0	1060.000	0.0	0.0	0.0	0.0
NC	0.035	0.035	0.080	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AI

X1	13225.000	13.000	801.000	828.000	905.000	905.000	905.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	778.000	0.0	828.000	0.0	0.0	0.0	0.0
GR	599.900	0.0	598.300	300.000	598.300	700.000	598.200	801.000	591.300	810.000
GR	590.900	812.000	590.800	813.000	591.300	817.000	598.200	828.000	596.200	900.000
GR	599.600	1200.000	599.800	1600.000	599.300	1300.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AJ WILLIAMSON RD. BOX CULVERT, TR 599.2, LC 596.8

X1	13275.000	15.000	793.000	806.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	780.000	0.0	840.000	0.0	599.200	599.200	0.0
GR	601.100	0.0	600.400	300.000	599.700	700.000	597.600	778.000	598.000	793.000
GR	592.000	793.000	591.300	794.000	590.700	797.000	590.700	805.000	591.300	806.000
GR	598.100	806.000	599.100	900.000	600.300	1200.000	600.900	1600.000	601.000	1300.000
SB	0.0	2.070	2.500	100.000	13.000	0.0	57.300	0.0	590.700	590.700
X1	13276.000	0.0	0.0	0.0	40.000	40.000	40.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	596.800	599.200	0.0	0.0	0.0	0.0	0.0

X3	19.000	0.0	0.0	19.000	0.0	190.000	0.0	599.200	599.200	0.0
BT	4.000	760.000	599.200	599.200	793.000	599.200	595.900	803.000	599.200	596.700
BT	840.000	599.100	599.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AK

X1	13325.000	13.000	758.000	734.000	55.000	55.000	55.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	725.000	0.0	825.000	0.0	0.0	0.0	0.0
GR	600.600	0.0	597.500	300.000	596.700	700.000	597.600	758.000	591.300	768.000
GR	590.700	771.000	590.300	773.000	591.300	775.000	596.900	784.000	597.000	900.000
GR	599.300	1200.000	593.800	1600.000	597.900	1800.000	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.070	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AL

X1	13700.000	13.000	185.000	220.000	280.000	280.000	280.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	112.500	0.0	287.500	0.0	0.0	0.0	0.0
GR	598.100	0.0	597.200	100.000	596.700	185.000	592.100	194.000	591.500	200.000
GR	591.600	205.000	592.100	210.000	597.900	220.000	597.000	300.000	597.100	400.000
GR	597.800	570.000	601.500	870.000	601.600	950.000	0.0	0.0	0.0	0.0

AM STUDER RD. CULVERT, 9-9X6-7X100 CMP, TR 596.7, CROWN 596.9

INVERT 590.3

X1	13750.000	19.000	195.500	204.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	350.000	0.0	0.0	0.0	0.0
GR	598.500	0.0	598.300	100.000	597.600	180.000	592.300	193.000	592.300	195.500
GR	591.000	196.000	590.500	198.000	590.300	200.000	590.500	202.000	591.000	204.000
GR	592.300	204.500	592.300	207.000	597.900	219.000	598.700	298.000	597.700	304.000
GR	597.300	400.000	599.100	520.000	601.200	870.000	601.600	950.000	0.0	0.0

X1	13751.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	350.000	0.0	0.0	0.0	0.0
BT	14.000	0.0	590.500	598.500	100.000	598.800	598.800	180.000	598.800	597.600
BT	193.000	598.700	592.300	195.500	598.700	592.300	196.000	598.700	595.000	198.000
BT	598.700	596.500	200.000	598.700	596.900	202.000	598.700	596.500	204.000	598.700
BT	595.000	204.500	598.700	592.300	207.000	598.700	592.300	219.000	598.700	597.900
BT	298.000	598.700	598.700	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	13752.000	0.0	0.0	0.0	100.000	100.000	100.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	350.000	0.0	0.0	0.0	0.0

X1	13753.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	350.000	0.0	0.0	0.0	0.0

AN

X1	13800.000	13.000	130.000	203.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	350.000	0.0	0.0	0.0	0.0
GR	599.100	0.0	598.900	100.000	597.600	180.000	592.100	193.000	591.500	197.000
GR	591.400	200.000	592.100	204.000	597.600	208.000	598.800	300.000	597.300	400.000
GR	599.100	570.000	601.400	870.000	601.700	950.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AO

X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
X3	0.0	0.0	0.0	50.000	0.0	250.000	0.0	0.0	0.0	0.0
GR	600.000	0.0	597.000	105.000	593.000	194.000	592.400	200.000	592.500	205.000
GR	593.000	210.000	596.000	220.000	600.000	290.000	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.075	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AP

X1	15800.000	13.000	1003.000	1037.000	810.000	810.000	310.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	995.000	0.0	1045.000	0.0	0.0	0.0	0.0
GR	604.600	0.0	601.900	500.000	600.400	900.000	600.200	1003.000	594.200	1013.000
GR	593.200	1015.000	594.200	1017.000	594.400	1022.000	600.500	1037.000	602.300	1100.000
GR	600.900	1500.000	601.200	1800.000	600.600	2000.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AQ KING ST. CULVERT, 9-4X6-3X60 CMP TR 601.7, CROWN 598.8, INVERT 592.6

X1	15850.000	16.000	995.500	1004.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	950.000	0.0	1050.000	0.0	607.100	607.100	0.0
GR	604.700	0.0	603.600	500.000	601.700	900.000	601.000	985.000	594.500	995.500
GR	593.400	996.000	592.700	998.000	592.600	1000.000	592.700	1002.000	593.400	1004.000
GR	594.500	1004.500	601.100	1016.000	602.000	1100.000	602.600	1500.000	602.300	1800.000
GR	601.300	2000.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.0	2.470	2.500	50.000	9.000	0.0	45.000	0.0	593.600	593.600

X1	15851.000	0.0	0.0	0.0	60.000	60.000	60.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	598.800	601.700	0.0	0.0	0.0	0.0	0.0
X3	10.000	0.0	0.0	950.000	0.0	1050.000	0.0	607.100	607.100	0.0
ST	13.000	950.000	601.400	601.400	981.000	601.700	601.700	982.000	601.700	601.700
BT	985.000	601.700	601.000	995.500	601.700	594.500	996.000	601.700	596.700	998.000
BT	601.700	598.400	1000.000	601.700	598.800	1002.000	601.700	598.400	1004.000	601.700
BT	596.700	1004.500	601.700	594.500	1016.000	602.000	601.100	1050.000	601.700	601.700
NC	0.040	0.040	0.075	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AR

X1	15900.000	13.000	983.000	1017.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	975.000	0.0	1025.000	0.0	0.0	0.0	0.0
GR	603.700	0.0	602.400	500.000	600.400	900.000	601.300	983.000	594.200	983.000
GR	593.600	994.000	593.300	1000.000	594.200	1007.000	600.400	1017.000	599.900	1100.000
GR	602.300	1500.000	601.900	1800.000	601.300	2000.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AS

X1	17030.000	0.0	0.0	0.0	1140.000	1140.000	1140.000	0.0	1.200	0.0
X3	0.0	0.0	0.0	875.000	0.0	1100.000	0.0	0.0	0.0	0.0

AT

X1	18100.000	12.000	287.000	333.000	365.000	865.000	865.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	200.000	0.0	400.000	0.0	0.0	0.0	0.0
GR	605.000	0.0	604.500	100.000	603.500	287.000	596.300	290.000	595.800	296.000
GR	595.700	302.000	596.600	307.000	601.500	333.000	603.300	343.000	604.000	400.000
GR	602.200	600.000	602.500	750.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.050	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AU KANSAS ST CULVERT, 8-7X5-11X55 CMP TR 604.1 CROWN 601, INVERT 595.

X1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

X1	18150.000	15.000	245.500	245.500	0.0	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	245.500	0.0	254.500	0.0	0.0	0.0	0.0
GR	605.000	0.0	604.900	100.000	604.320	200.000	603.900	236.000	597.000	245.500
GR	595.800	246.000	595.200	243.000	595.100	250.000	595.200	252.000	595.300	254.000
GR	597.000	254.500	603.800	260.000	605.100	400.000	602.700	600.000	603.600	750.000
NC	0.035	0.035	0.032	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	18151.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	245.500	0.0	254.500	0.0	0.0	0.0	0.0
BT	15.000	0.0	605.000	605.000	100.000	604.900	604.900	200.000	604.300	604.300
BT	236.000	603.900	603.900	245.500	604.100	597.000	246.000	604.100	598.500	248.000
BT	604.100	600.600	250.000	604.100	601.000	252.000	604.100	600.600	254.000	604.100
BT	598.500	254.500	604.100	597.000	260.000	603.800	603.800	400.000	605.100	605.100
BT	600.000	602.700	602.700	750.000	603.900	603.900	0.0	0.0	0.0	0.0
X1	18152.000	0.0	0.0	0.0	55.000	55.000	55.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	245.500	0.0	254.500	0.0	0.0	0.0	0.0
X1	18153.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	245.500	0.0	254.500	0.0	0.0	0.0	0.0
AV										
X1	18210.000	11.000	220.000	246.000	45.000	45.000	45.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	203.000	0.0	253.000	0.0	0.0	0.0	0.0
GR	604.500	0.0	603.800	100.000	603.200	220.000	596.600	226.000	594.900	230.000
GR	595.500	234.000	596.600	239.000	602.000	245.000	604.900	400.000	602.300	500.000
GR	603.900	750.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0
AW										
X1	18700.000	12.000	236.000	269.000	370.000	370.000	370.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	236.000	0.0	269.000	0.0	0.0	0.0	0.0
GR	605.600	0.0	604.300	100.000	603.800	200.000	604.100	236.000	596.600	240.000
GR	595.500	245.000	595.800	250.000	596.600	256.000	604.800	269.000	604.300	300.000
GR	605.500	400.000	604.100	500.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AX KANSAS ST. CULVERT,7-3X5-3X63 CMP TR 605.1, CROWN 600.9,INVERT 595.8

X1	18750.000	15.000	298.300	305.700	60.000	60.000	60.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	298.300	0.0	305.700	0.0	0.0	0.0	0.0
GR	606.000	0.0	605.900	100.000	605.000	200.000	603.300	296.000	597.400	298.300
GR	596.400	298.500	596.000	300.000	595.800	302.000	596.000	304.000	596.400	305.500
GR	597.400	305.700	597.400	309.000	605.000	321.000	605.200	400.000	604.500	800.000
SB	0.0	2.490	2.500	7.400	7.400	0.0	30.000	0.0	597.000	597.000
X1	18751.000	0.0	0.0	0.0	60.000	63.000	63.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	600.900	605.100	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	298.300	0.0	305.700	0.0	0.0	0.0	0.0
BT	13.000	290.000	606.000	606.000	291.000	605.900	605.900	292.000	605.000	605.000
BT	296.000	605.000	603.800	298.300	605.000	597.400	298.500	605.000	598.800	300.000
BT	605.000	600.000	302.000	605.000	600.900	304.000	605.000	600.000	305.500	605.000
BT	598.300	305.700	605.000	597.400	309.000	605.000	597.400	315.000	605.000	605.000
QT	4.000	135.000	225.000	280.000	350.000	280.000	0.0	0.0	0.0	0.0

X1	18800.000	11.000	291.000	324.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	282.500	0.0	332.500	0.0	0.0	0.0	0.0
GR	605.200	0.0	605.300	100.000	604.700	200.000	603.500	291.000	596.600	306.000
GR	595.300	303.000	595.400	312.000	596.600	315.000	605.100	324.000	605.300	400.000
GR	603.400	600.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AZ

X1	19950.000	9.000	253.000	292.000	1005.000	1005.000	1005.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	200.000	0.0	375.000	0.0	0.0	0.0	0.0
GR	605.700	0.0	604.700	75.000	604.300	175.000	604.300	253.000	597.000	269.000
GR	596.400	273.000	597.000	277.000	604.700	292.000	605.600	355.000	0.0	0.0
EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 300.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS       490.0     532.0  TYPE       1  TARGET       42.000

        A   BACKWATER OF SAGINAW RIVER FOR 100-YEAR IS 593.86


            FOOT BRIDGE  IN HICKES PARK, TR 583.49, LC 583.0

   300.00      7.30   584.00      0.0    532.00   584.13      0.13      0.0       0.0    583.40
    720.        0.     720.        0.       0.     247.        0.        0.        0. 100000.00
     0.0       0.0      2.91      0.0     0.035    0.030     0.035     0.0     576.20    490.00
 0.000403      315.     315.      315.        0         0         2    -0.00     42.00    532.00

*SECNO 301.000

3370 NORMAL BRIDGE,NRD  15 MIN ELTRD   582.80 MAX ELLC   591.50

3470 ENCROACHMENT STATIONS       490.0     532.0  TYPE       1  TARGET       42.000
   301.00      7.69   533.89      0.0       0.0   584.18      0.29      0.00      0.05    583.40
    720.        0.     720.        0.       0.     165.        0.        0.        0. 100000.00
     0.00      0.0      4.35      0.0     0.035    0.030     0.035     0.015   576.20    490.00
 0.003300       1.       1.        1.        2         0         0    -77.23     42.00    532.00

*SECNO 302.000

3370 NORMAL BRIDGE,NRD  15 MIN ELTRD   582.80 MAX ELLC   591.50

3470 ENCROACHMENT STATIONS       490.0     532.0  TYPE       1  TARGET       42.000
   302.00      7.70   583.90      0.0       0.0   584.20      0.29      0.02      0.00    583.40
    720.        0.     720.        0.       0.     165.        0.        0.        0. 100000.00
     0.00      0.0      4.35      0.0     0.035    0.030     0.035     0.023   576.20    490.00
 0.003302       5.       5.        5.        0         0         0    -77.63     42.00    532.00

*SECNO 303.000

3470 ENCROACHMENT STATIONS       490.0     532.0  TYPE       1  TARGET       42.000
   303.00      7.89   534.09      0.0       0.0   584.22      0.13      0.00      0.02    583.40
    720.        0.     720.        0.       0.     251.        0.        0.        0. 100000.00
     0.00      0.0      2.87      0.0     0.035    0.030     0.035     0.021   576.20    490.00
 0.000386       1.       1.        1.        2         0         0    -0.00     42.00    532.00

*SECNO 400.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST
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3470 ENCROACHMENT STATIONS      425.0     530.0  TYPE      1  TARGET      105.000

        B

   400.00     7.31   584.21     0.0      0.0    584.24     0.03     0.01     0.01   582.60
     720.       0.     720.       0.       0.     539.       0.       1.       0.  100000.00
     0.02      0.0     1.34     0.0     0.035    0.030    0.035    0.029   576.90   425.00
 0.000087      80.      30.      80.        2        0        0    -0.01   135.00   530.00

*SECNO 1120.000

3470 ENCROACHMENT STATIONS     1004.0    1053.0  TYPE      1  TARGET       49.000

        C

  1120.00     6.35   584.25     0.0      0.0    584.40     0.14     0.12     0.03   584.80
     720.       0.     720.       0.       0.     238.       0.       7.       1.  100000.00
     0.08      0.0     3.02     0.0     0.030    0.030    0.030    0.030   577.90  1004.43
 0.000502     720.     720.     720.        2        0        0    -0.00    48.57  1053.00

*SECNO 1200.000

3470 ENCROACHMENT STATIONS     1000.0    1042.0  TYPE      1  TARGET       42.000

        D   FOOT BRIDGE IN EASTMOST WICKES PARK, LC 584.1, TR 584.5

  1200.00     6.35   584.25     0.0      0.0    584.48     0.23     0.06     0.03   584.50
     720.       0.     720.       0.       0.     189.       0.       8.       2.  100000.00
     0.09      0.0     3.82     0.0     0.030    0.030    0.030    0.030   577.90  1000.14
 0.000905      90.      90.      90.        2        0        0    -0.00    41.72  1041.86

*SECNO 1201.000

3370 NORMAL BRIDGE,NRD   7 MIN ELTRD   533.80 MAX ELLC   584.50

3470 ENCROACHMENT STATIONS     1000.0    1042.0  TYPE      1  TARGET       42.000
  1201.00     6.25   584.15     0.0      0.0    584.53     0.37     0.00     0.04   584.50
     720.       0.     720.       0.       0.     147.       0.       8.       2.  100000.00
     0.09      0.0     4.89     0.0     0.030    0.030    0.030    0.030   577.90  1000.20
 0.004973       1.       1.       1.        2        0        0   -37.29    41.60  1041.30

*SECNO 1202.000

3370 NORMAL BRIDGE,NRD   7 MIN ELTRD   533.80 MAX ELLC   584.50

3470 ENCROACHMENT STATIONS     1000.0    1042.0  TYPE      1  TARGET       42.000
  1202.00     6.28   584.18     0.0      0.0    584.55     0.37     0.02     0.00   584.50
     720.       0.     720.       0.       0.     147.       0.       8.       2.  100000.00
     0.09      0.0     4.89     0.0     0.030    0.030    0.030    0.030   577.90  1000.19
 0.004979       5.       5.       5.        1        0        0   -36.12    41.63  1041.31

*SECNO 1203.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        GLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       THA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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3470 ENCROACHMENT STATIONS      1000.0     1062.0  TYPE      1  TARGET      42.000
  1203.00      6.45    584.35      0.0       0.0     584.57      0.22      0.00      0.02    584.50
     720.       0.     720.       0.        0.       193.       0.        3.        2.  100000.00
    0.09       0.0      3.74      0.0      0.030     0.030     0.030     0.030    577.90   1000.08
 0.000848       1.       1.        1.        2         0         0      -0.00     41.83   1041.91


*SECNO 1300.000

3470 ENCROACHMENT STATIONS       993.0     1038.0  TYPE      1  TARGET      45.000

        E

  1300.00      6.38    584.43      0.0       0.0     584.53      0.15      0.06      0.01    585.10
     720.       0.     720.       0.        0.       233.       0.        3.        2.  100000.00
    0.10       0.0      3.09      0.0      0.030     0.030     0.030     0.030    578.10    993.15
 0.000511       85.      35.       35.        2         0         0      -0.00     44.35   1038.00


CCHV    0.100 CEHV    0.300
*SECNO 2100.000

        F

  2100.00      4.71    585.01      0.0       0.0     585.30      0.30      0.63      0.04    587.10
     720.       0.     720.       0.        0.       164.       0.        12.       2.     586.60
    0.15       0.0      4.33      0.0      0.030     0.030     0.030     0.030    580.30    480.68
 0.001366      300.     300.      300.        1         0         0      -0.00     38.03    518.72


*SECNO 2800.000

        G

  2800.00      7.62    585.72      0.0       0.0     585.91      0.19      0.59      0.01    590.40
     720.       0.     720.       0.        0.       206.       0.        15.       3.     588.00
    0.20       0.0      3.53      0.0      0.030     0.030     0.030     0.030    578.10    112.38
 0.000575      700.     700.      700.        2         0         0      -0.00     34.05    146.92


*SECNO 2926.000

        H   CULVERT WEST OF EAST ST., TR 586.6, CROWN 584.9, INVERT 577.9

            6.9X20X25 CMP

  2926.00      7.80    585.70      0.0       0.0     586.04      0.34      0.09      0.05    586.50
     720.       0.     720.       0.        0.       154.       0.        15.       3.     586.60
    0.21       0.0      4.69      0.0      0.040     0.030     0.030     0.030    577.90    490.00
 0.001186      114.     114.      114.        2         0         0      -0.00     20.00    510.00


SPECIAL BRIDGE

SB  XK        XKOR      COFC      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    0.0       2.59      2.50      0.0       20.00     0.0      136.00     0.0      576.00    578.00

*SECNO 2927.000
   SECNO     DEPTH     CHSEL     CRINS     WSELK     EG        HV        HL        DLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       VTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
536.83	536.13	0.0	7.	710.	136.	136.	504.90	586.60

2927.00	3.62	506.52	0.0	0.0	586.00	0.28	0.75	0.0	586.60
720.	0.	720.	0.	0.	170.	0.	13.	3.	586.60
0.21	0.0	4.24	0.0	0.040	0.030	0.030	0.030	577.90	490.00
0.000903	25.	25.	25.	2	0	2	-0.00	20.00	510.00

*SECNO 3319.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 589.70 ELREA 589.70

I EAST ST. BRIDGE M-13 , LC 586.49 TR 589.7

3319.00	7.65	586.85	0.0	0.0	587.18	0.33	0.37	0.02	589.70
720.	0.	720.	0.	0.	156.	0.	17.	3.	589.70
0.23	0.0	4.61	0.0	0.040	0.030	0.030	0.030	579.20	1001.00
0.001192	359.	359.	359.	2	0	0	-0.00	21.00	1022.00

*SECNO 3320.000

3370 NORMAL BRIDGE,NRD 7 MIN ELTRD 589.50 MAX ELLC 590.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 589.70 ELREA 589.70

3320.00	7.62	586.82	0.0	0.0	587.20	0.37	0.00	0.01	589.70
720.	0.	720.	0.	0.	147.	0.	17.	3.	589.70
0.23	0.0	4.91	0.0	0.040	0.030	0.030	0.030	579.20	1001.00
0.002680	1.	1.	1.	2	0	0	-8.39	21.00	1022.00

*SECNO 3321.000

3370 NORMAL BRIDGE,NRD 7 MIN ELTRD 589.50 MAX ELLC 590.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 589.70 ELREA 589.70

3321.00	7.74	586.94	0.0	0.0	587.31	0.37	0.11	0.0	589.70
720.	0.	720.	0.	0.	147.	0.	17.	3.	589.70
0.24	0.0	4.91	0.0	0.040	0.030	0.030	0.030	579.20	1001.00
0.002680	42.	42.	42.	2	0	0	-11.25	21.00	1022.00

*SECNO 3322.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 589.70 ELREA 589.70

3322.00	7.80	587.00	0.0	0.0	587.32	0.32	0.00	0.01	589.70
720.	0.	720.	0.	0.	159.	0.	17.	3.	589.70
0.24	0.0	4.52	0.0	0.040	0.030	0.030	0.030	579.20	1001.00
0.001129	1.	1.	1.	2	0	0	-0.00	21.00	1022.00

*SECNO 3400.000

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV

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  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      ATN      ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   ICC      ICONT    CORAR    TOPWID    ENDST


        J   DITCH BOTTOM 20 FT

 3400.00     7.51   587.21     0.0      0.0    587.38     0.17     0.05     0.02   587.50
    720.       0.     720.       0.       0.     219.       0.      17.       3.    587.40
    0.24      0.0     3.28      0.0    0.040    0.030    0.030    0.030   579.70   110.85
0.000511      65.      65.      65.        2        0        0    -0.00    38.42   149.27

*SECNO 3600.000

        K   STATION 36+64-CONFLUENCE PT WITH LULL DRAIN

 3600.00     7.41   587.31     0.0      0.0    587.49     0.17     0.10     0.00   587.70
    720.       0.     720.       0.       0.     216.       0.      18.       3.    587.60
    0.26      0.0     3.34      0.0    0.040    0.030    0.030    0.030   579.90   110.97
0.000537     200.     200.     200.        2        0        0    -0.00    38.17   149.15

CCHV    0.100 CEHV    0.300
*SECNO 3750.000
3260 CROSS SECTION   3750.00 EXTENDED      2.49 FEET


        L   U/S FROM THE CONFLUENCE WITH LULL DRAIN

 3750.00     8.49   587.49     0.0      0.0    587.53     0.04     0.03     0.01   585.00
    435.      15.     409.      12.      27.     247.      30.      19.       4.    585.00
    0.28      0.55     1.65     0.39    0.030    0.030    0.060    0.030   579.00   961.56
0.000094     145.     145.     145.        2        0        0    -0.00    68.44  1030.00

*SECNO 3800.000

3470 ENCROACHMENT STATIONS      483.0     533.0  TYPE      1  TARGET       50.000

        M

 3800.00     6.93   587.53     0.0      0.0    587.61     0.08     0.07     0.01   584.20
    435.      73.     319.      43.      47.     125.      52.      22.       4.    583.90
    0.34      1.56     2.54     0.82    0.030    0.030    0.060    0.030   580.60   483.00
0.000273     455.     455.     455.        2        0        0    -0.00    50.00   533.00

CCHV    0.300 CEHV    0.500
*SECNO 3850.000

3470 ENCROACHMENT STATIONS      410.0     610.0  TYPE      1  TARGET      200.000

        N   BANNER ST BRIDGE, TR 588.1, LC 587.0

 3850.00     6.89   587.49     0.0      0.0    587.75     0.25     0.05     0.09   588.10
    435.       0.     435.       0.       0.     107.       0.      22.       4.    588.30
    0.35      0.0     4.05      0.0    0.030    0.030    0.060    0.030   580.60   502.00
0.001110     100.     100.     100.        2        0        0    -0.00    17.00   519.00

*SECNO 3851.000
  SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VCL      TWA    LEFT/RIGHT
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   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   588.10 MAX ELLC   589.80


3470 ENCROACHMENT STATIONS       410.0      610.0  TYPE       1  TARGET       200.000
  3851.00      6.88    587.43      0.0       0.0    587.78      0.30      0.01      0.02    588.10
     435.        0.      435.        0.        0.      99.        0.       22.        4.    588.30
     0.35      0.0      4.41      0.0     0.030    0.030     0.060     0.030    530.60    502.00
 0.002676        5.        5.        5.         1        0         0     -8.29     17.00    519.00

*SECNO 3852.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   588.10 MAX ELLC   589.80


3470 ENCROACHMENT STATIONS       410.0      610.0  TYPE       1  TARGET       200.000
  3852.00      6.95    587.55      0.0       0.0    587.85      0.30      0.07      0.0    588.10
     435.        0.      435.        0.        0.      99.        0.       22.        4.    588.30
     0.35      0.0      4.41      0.0     0.030    0.030     0.060     0.030    530.60    502.00
 0.002676       25.       25.       25.         1        0         0     -9.10     17.00    519.00

*SECNO 3853.000

3470 ENCROACHMENT STATIONS       410.0      610.0  TYPE       1  TARGET       200.000
  3853.00      7.02    587.62      0.0       0.0    587.87      0.25      0.00      0.02    588.10
     435.        0.      435.        0.        0.     109.        0.       22.        4.    588.30
     0.35      0.0      3.90      0.0     0.030    0.030     0.060     0.030    530.60    502.00
 0.001052        1.        1.        1.         2        0         0     -0.00     17.00    519.00


*SECNO 3900.000

3470 ENCROACHMENT STATIONS       492.0      542.0  TYPE       1  TARGET        50.000

        0

  3900.00      7.38    587.83      0.0       0.0    587.96      0.08      0.05      0.05    584.20
     435.       101.      290.       43.       60.     114.       53.       22.        4.    584.40
     0.36      1.69      2.55      0.81     0.030    0.030     0.060     0.030    580.50    492.00
 0.000274      100.      100.      100.         2        0         0     -0.00     50.00    542.00

*SECNO 4000.000

3470 ENCROACHMENT STATIONS       563.0      663.0  TYPE       1  TARGET       100.000

        P

  4000.00      7.56    588.05      0.0       0.0    588.10      0.04      0.13      0.01    585.20
     435.        90.      312.       33.       73.     171.       32.       26.        5.    585.80
     0.45      1.23      1.82      0.40     0.030    0.040     0.100     0.031    530.50    563.00
 0.000250      480.      480.      480.         2        0         0     -0.00    100.00    663.00

*SECNO 5575.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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3470 ENCROACHMENT STATIONS       980.0     1030.0  TYPE       1  TARGET        50.000

        Q

  5575.00      6.39    538.59      0.0       0.0    538.59      0.10      0.56      0.03    586.60
     435.       34.      398.       3.       20.     149.       10.       34.       8.     587.70
     0.61      1.71      2.67      0.33     0.030    0.040     0.100     0.033    581.70    980.00
 0.000649     1470.     1470.     1470.         2        0         0     -0.00     50.00   1030.00

*SECNO 5625.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        589.00 ELREA        589.00

        R   CASEY RD. BRIDGE, 83X123X40 CMP, TR 590.5, CROWN 538.8, INVERT 581.9

  5625.00      6.57    588.47      0.0       0.0    589.02      0.55      0.11      0.22    584.20
     435.        0.     435.        0.        0.      73.        0.       34.       8.     584.20
     0.61       0.0      5.96      0.0     0.035    0.035     0.040     0.033    581.90    990.00
 0.002142      100.     100.      100.         2        0         0     -0.00     12.00   1002.00

*SECNO 5626.000

3370 NORMAL BRIDGE,NRD  17 MIN ELTRD   586.50 MAX ELLC   593.60

3470 ENCROACHMENT STATIONS       895.0     1095.0  TYPE       1  TARGET       200.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        589.00 ELREA        589.00

  5626.00      6.49    538.39      0.0       0.0    589.14      0.75      0.02      0.10    584.20
     435.        0.     435.        0.        0.      63.        0.       34.       8.     584.20
     0.61       0.0      6.96      0.0     0.030    0.032     0.030     0.033    581.90    990.00
 0.007294        5.       5.        5.         2        0         0    -22.64     12.00   1002.00

*SECNO 5627.000

3370 NORMAL BRIDGE,NRD  17 MIN ELTRD   586.50 MAX ELLC   593.60

3470 ENCROACHMENT STATIONS       895.0     1095.0  TYPE       1  TARGET       200.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        590.50 ELREA        590.50

  5627.00      6.84    588.74      0.0       0.0    589.45      0.72      0.30      0.01    584.20
     435.        0.     435.        0.        0.      64.        0.       34.       8.     584.20
     0.61       0.0      6.79      0.0     0.030    0.032     0.030     0.033    581.90    990.00
 0.007939       40.      40.       40.         2        0         0    -25.34     12.00   1002.00

*SECNO 5628.000

3470 ENCROACHMENT STATIONS       590.5     1095.0  TYPE       1  TARGET       504.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        590.50 ELREA        590.50

  5628.00      7.19    589.09      0.0       0.0    589.55      0.45      0.01      0.00    584.20
     435.        0.     435.        0.        0.      80.        0.       34.       8.     584.20
     0.61       0.0      5.41      0.0     0.035    0.035     0.040     0.033    581.90    990.00
 0.001545        5.       5.        5.         2        0         0     -0.00     12.00   1002.00
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*SECNO 5675.000
   SECNO     DEPTH     C.SEL     CRINS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       THA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTM       ELMIN        SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IOC       ICONT     CORAR     TOPWID       ENDST


3470 ENCROACHMENT STATIONS       955.0     1005.0  TYPE      1  TARGET       50.000

        S

  5675.00      3.05    589.65      0.0       0.0    589.72      0.07      0.06      0.11    587.10
     435.       34.      379.      21.       29.     165.       24.       35.        8.    587.70
     0.62      1.17      2.30      0.89     0.035    0.035     0.040     0.033    531.60    955.00
 0.000297      100.      100.      100.         2         0         0     -0.00     50.00   1005.00

CCHV    0.100 CEHV    0.300
*SECNO 6075.000

3470 ENCROACHMENT STATIONS       477.0      510.0  TYPE      1  TARGET       33.000

        T

  6075.00      7.11    590.21      0.0       0.0    590.31      0.10      0.58      0.01    589.60
     435.       0.      435.       0.        0.     169.       0.        40.        9.  100000.00
     0.75      0.0      2.58      0.0     0.040    0.050     0.040     0.036    583.10    477.00
 0.000998     1170.    1170.     1170.         2         0         0     -0.00     31.45    508.45

CCHV    0.200 CEHV    0.400
*SECNO 6125.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       593.80 ELREA       593.80

        U   WASHINGTON ST. CULVERT, 13-11X8-7X20 CMP, TR 593.8, CRCHN 591.4

            INVERT 582.8

  6125.00      7.44    590.24      0.0       0.0    590.50      0.26      0.13      0.06    585.00
     435.       0.      435.       0.        0.     106.       0.        40.        9.    535.00
     0.76      0.0      4.11      0.0     0.040    0.050     0.040     0.036    532.80    492.50
 0.001628      100.      100.      100.         2         0         0     -0.00     15.00    507.50

*SECNO 6126.000

3370 NORMAL BRIDGE,NRD  20 MIN ELTRD   593.10 MAX ELLC   596.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       593.80 ELREA       593.80

  6126.00      7.42    590.22      0.0       0.0    590.53      0.31      0.01      0.02    585.00
     435.       0.      435.       0.        0.      97.       0.        40.        9.    535.00
     0.76      0.0      4.47      0.0     0.030    0.032     0.030     0.036    532.80    492.50
 0.001931        5.       5.        5.         2         0         0    -14.14     15.00    507.50

*SECNO 6127.000

3370 NORMAL BRIDGE,NRD  20 MIN ELTRD   593.10 MAX ELLC   596.00
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        593.80 ELREA        593.80

  6127.00      7.52    590.32      0.0       0.0    590.62      0.31      0.10      0.00    585.00
     435.        0.      435.       0.        0.       93.        0.       40.        9.    585.00
     0.76       0.0      4.43      0.0     0.030     0.032     0.030     0.036    582.80    492.50
 0.001910        50.       50.       50.         1         0         0    -14.98     15.00    507.50

*SECNO 6128.000
   SECNO     DEPTH     CWSEL     CRIMS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       VTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        593.80 ELREA        593.80

  6128.00      7.59    590.39      0.0       0.0    590.64      0.25      0.01      0.01    585.00
     435.        0.      435.       0.        0.      108.        0.       40.        9.    585.00
     0.76       0.0      4.02      0.0     0.040     0.050     0.040     0.036    582.80    492.50
 0.001514        5.        5.        5.         2         0         0     -0.00     15.00    507.50

*SECNO 6175.000

3470 ENCROACHMENT STATIONS       463.0      514.0  TYPE       1  TARGET        45.000

        V

  6175.00      7.70    590.70      0.0       0.0    590.75      0.04      0.06      0.04    590.90
     435.        0.      435.       0.        0.      266.        0.       41.        9. 100000.00
     0.78       0.0      1.64      0.0     0.040     0.050     0.040     0.036    583.00    468.20
 0.000327       100.      100.      100.         2         0         0     -0.00     45.00    513.19

CCHV    0.100 CEHV    0.300
*SECNO 7050.000

3470 ENCROACHMENT STATIONS       410.0      510.0  TYPE       1  TARGET       100.000

        W

  7050.00      7.22    591.22      0.0       0.0    591.31      0.09      0.55      0.02    591.10
     435.        0.      435.       0.        0.      177.        0.       45.       10.    592.00
     0.87       0.32      2.46      0.0     0.035     0.075     0.040     0.040    584.00    429.85
 0.002369       795.      795.      795.         2         0         0     -0.00     47.59    477.44

*SECNO 8125.000

3470 ENCROACHMENT STATIONS       960.0     1035.0  TYPE       1  TARGET        75.000

        X

  8125.00      7.99    593.39      0.0       0.0    593.47      0.09      2.16      0.00    592.70
     435.       23.      398.       14.       21.      163.        9.       49.       11.    592.40
     0.99       1.10      2.45      1.46     0.040     0.075     0.040     0.043    585.40    960.00
 0.001869      1030.     1030.     1030.         1         0         0     -0.01     75.00   1035.00

*SECNO 8175.000

3470 ENCROACHMENT STATIONS       930.0     1025.0  TYPE       1  TARGET        95.000
```

INVERT 584.9

8175.00	8.63	593.53	0.0	0.0	593.58	0.06	0.11	0.00	587.00
435.	145.	156.	134.	87.	82.	62.	50.	12.	537.00
1.00	1.66	1.91	2.15	0.040	0.075	0.040	0.044	534.90	935.60
0.000693	100.	100.	100.	2	0	0	-0.01	89.40	1025.00

SPECIAL BRIDGE

SB	XK	XKOR	CCFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	2.38	2.50	100.00	10.00	0.0	51.00	0.0	586.00	586.00

*SECNO 8176.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	PTN	ELMIN	SSTA
SLOPE	XLOEL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRC
596.22	594.66	0.0	39.	346.	51.	55.	591.50	594.70

3470 ENCROACHMENT STATIONS 950.0 1025.0 TYPE 1 TARGET 75.000

8176.00	10.30	595.23	0.0	0.0	595.23	0.02	1.64	0.0	587.00
435.	191.	111.	133.	159.	99.	96.	50.	12.	587.00
1.01	1.20	1.12	1.39	0.040	0.075	0.040	0.044	534.90	950.00
0.000183	44.	44.	44.	2	0	4	-0.01	75.00	1025.00

*SECNO 8225.000

3470 ENCROACHMENT STATIONS 956.0 1031.0 TYPE 1 TARGET 75.000

Z

8225.00	10.23	595.23	0.0	0.0	595.24	0.01	0.02	0.00	591.40
375.	74.	243.	58.	81.	278.	64.	51.	12.	591.40
1.05	0.91	0.88	0.90	0.040	0.075	0.040	0.044	535.00	956.00
0.000135	100.	100.	100.	1	0	0	-0.01	75.00	1031.00

CCHV 0.200 CEHV 0.400

*SECNO 9880.000

3470 ENCROACHMENT STATIONS 900.0 1100.0 TYPE 1 TARGET 200.000

AA

9880.00	8.80	595.50	0.0	0.0	595.51	0.01	0.27	0.00	594.00
375.	82.	217.	76.	114.	209.	108.	66.	17.	594.00
1.51	0.72	1.04	0.70	0.040	0.070	0.040	0.043	586.70	900.00
0.000251	1500.	1500.	1500.	2	0	0	-0.01	200.00	1100.00

CCHV 0.100 CEHV 0.300

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3470 ENCROACHMENT STATIONS        950.0     1050.0  TYPE       1  TARGET       100.000

        AB  FARM CULVERT,9-6X6-5X40 CMP, TR 594.7, CROWN 593.9, INVERT 587.5

  9930.00      8.22    595.52      0.0       0.0     595.55      0.03      0.03      0.01    589.00
     375.      113.      125.      137.       81.       79.       93.       66.       17.    589.00
     1.53      1.40      1.59      1.47     0.040     0.070     0.040     0.048    587.30    950.00
 0.000420      100.      100.      100.         0         0         0     -0.01    100.00   1050.00

*SECNO 9931.000

3370 NORMAL BRIDGE,NRD  15 MIN ELTRD   594.30 MAX ELLC   597.10

3470 ENCROACHMENT STATIONS        950.0     1050.0  TYPE       1  TARGET       100.000
  9931.00      8.17    595.47      0.0       0.0     595.58      0.11      0.00      0.02    589.00
     375.       85.      130.      110.       43.       58.       50.       66.       17.    589.00
     1.53      2.00      3.12      2.21     0.035     0.032     0.035     0.048    587.30    950.00
 0.002439        5.        5.        5.         2         0         0    -97.31    100.00   1050.00

*SECNO 9932.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

3370 NORMAL BRIDGE,NRD  15 MIN ELTRD   594.30 MAX ELLC   597.10

3470 ENCROACHMENT STATIONS        950.0     1050.0  TYPE       1  TARGET       100.000
  9932.00      8.29    595.59      0.0       0.0     595.68      0.09      0.10      0.00    589.00
     375.       93.      167.      116.       48.       59.       55.       67.       17.    589.00
     1.53      1.93      2.82      2.11     0.035     0.032     0.035     0.048    587.30    950.00
 0.001952       45.       45.       45.         2         0         0    -97.31    100.00   1050.00

*SECNO 9933.000

3470 ENCROACHMENT STATIONS        950.0     1050.0  TYPE       1  TARGET       100.000
  9933.00      8.35    595.65      0.0       0.0     595.69      0.04      0.00      0.01    589.00
     375.       98.      159.      113.       86.       80.       99.       67.       17.    589.00
     1.53      1.13      2.00      1.19     0.040     0.045     0.040     0.048    587.30    950.00
 0.000266        5.        5.        5.         2         0         0     -0.01    100.00   1050.00

*SECNO 9980.000

3470 ENCROACHMENT STATIONS        900.0     1100.0  TYPE       1  TARGET       200.000

        AC

  9980.00      8.39    595.69      0.0       0.0     595.71      0.02      0.02      0.00    594.60
     375.       40.      272.       62.       81.      207.      107.       67.       17.    594.30
     1.56      0.50      1.32      0.58     0.040     0.045     0.040     0.048    587.30    900.00
 0.000180      100.      100.      100.         2         0         0     -0.00    200.00   1100.00

CCHV    0.200 CEHV    0.400
*SECNO 10800.000
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3470 ENCROACHMENT STATIONS 9800 10000 TYPE 1 TARGET 120000

AD

10800.00	8.00	595.80	0.0	0.0	595.82	0.02	0.11	0.00	593.60
375.	67.	202.	107.	78.	165.	100.	73.	20.	593.30
1.72	0.85	1.23	1.06	0.030	0.045	0.030	0.048	537.80	960.00
0.000159	560.	560.	560.	2	0	0	-0.01	120.00	1080.00

*SECNO 10850.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 600.40 ELREA 600.40

AE G.T...R.R. BRIDGE, TR 500.4, LC 596.4

10850.00	7.40	595.80	0.0	0.0	595.86	0.06	0.03	0.02	600.40
375.	0.	375.	0.	0.	187.	0.	74.	20.	600.30
1.74	0.0	2.01	0.0	0.030	0.045	0.030	0.047	538.40	1000.00
0.000490	100.	100.	100.	1	0	0	-0.00	33.00	1033.00

*SECNO 10851.000

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	CLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	ATN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3370 NORMAL BRIDGE,NRD 0 MIN ELTRD 600.30 MAX ELLC 596.40

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 600.40 ELREA 600.40

10851.00	7.40	595.80	0.0	0.0	595.86	0.06	0.00	0.00	600.40
375.	0.	375.	0.	0.	186.	0.	74.	20.	600.30
1.74	0.0	2.01	0.0	0.030	0.045	0.030	0.047	538.40	1000.00
0.000492	1.	1.	1.	0	0	0	-0.00	33.00	1033.00

*SECNO 10852.000

3370 NORMAL BRIDGE,NRD 0 MIN ELTRD 600.30 MAX ELLC 596.40

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 600.40 ELREA 600.40

10852.00	7.41	595.81	0.0	0.0	595.87	0.06	0.01	0.00	600.40
375.	0.	375.	0.	0.	187.	0.	74.	20.	600.30
1.74	0.0	2.01	0.0	0.030	0.045	0.030	0.047	588.40	1000.00
0.000490	12.	12.	12.	0	0	0	-0.00	33.00	1033.00

*SECNO 10853.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 600.40 ELREA 600.40

10853.00	7.41	595.81	0.0	0.0	595.87	0.06	0.00	0.00	600.40
375.	0.	375.	0.	0.	187.	0.	74.	20.	600.30
1.74	0.0	2.01	0.0	0.030	0.045	0.030	0.047	588.40	1000.00
0.000490	1.	1.	1.	0	0	0	-0.00	33.00	1033.00

*SECNO 10900.000

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3470 ENCROACHMENT STATIONS      985.5    1036.5  TYPE      1  TARGET       50.000

        AF

 10900.00      7.96    595.86      0.0       0.0    595.92      0.05      0.05      0.00    594.50
     375.       17.      310.      48.       15.     150.      28.       74.       20.     593.30
     1.75      1.17     2.06      1.70     0.030    0.045    0.030     0.047    537.90    986.50
 0.000457      100.     100.      100.         0        0        0     -0.00     50.00   1036.50

*SECNO 11150.000

3470 ENCROACHMENT STATIONS      940.0    1080.0  TYPE      1  TARGET      140.000

        AG

 11150.00      7.76    595.96      0.0       0.0    595.99      0.03      0.07      0.01    594.30
     375.       29.      224.     122.       43.     145.     101.       75.       21.     593.60
     1.79      0.66     1.55     1.21     0.030    0.045    0.030     0.047    588.20    940.00
 0.000271      195.     195.      195.         1        0        0     -0.01    140.00   1080.00

CCHV    0.100 CEHV    0.300
*SECNO 12150.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
   Q         SLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      946.5    1060.0  TYPE      1  TARGET      113.500

        AH

 12150.00      6.90    596.40      0.0       0.0    596.49      0.09      0.48      0.02    596.10
     375.       1.      307.      67.        3.     122.      41.       81.       23.     594.90
     1.92      0.42     2.52     1.63     0.030    0.045    0.030     0.047    589.50    976.96
 0.000902     1060.    1060.     1060.        2        0        0     -0.01     83.03   1060.00

*SECNO 13225.000

3470 ENCROACHMENT STATIONS      778.0     828.0  TYPE      1  TARGET       50.000

        A1

 13225.00      7.20    598.00      0.0       0.0    598.16      0.17      1.65      0.02    598.20
     375.       0.      375.       0.        0.     114.       0.       84.       24.  100000.00
     1.99      0.0      3.29      0.0     0.035    0.080    0.035     0.049    590.80    801.26
 0.005476      905.     905.      905.         2        0        0     -0.00     26.43    827.68

CCHV    0.200 CEHV    0.400
*SECNO 13275.000

3470 ENCROACHMENT STATIONS      780.0     840.0  TYPE      1  TARGET       60.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       599.20 ELREA       599.20

        AJ  WILLIAMSON RD. BOX CULVERT, TR 599.2, LC 596.8

 13275.00      7.87    598.57      0.0       0.0    598.79      0.22      0.61      0.02    598.30
     375.       0.      375.       0.        0.     100.       0.       84.       24.     598.10
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 2850      0.0      3.14      0.0      0.035     0.030     0.035     0.040    590.70    775.00
0.006799   100.     100.      100.       2         0         0      -0.00     13.00    806.00


SPECIAL BRIDGE

SB  XK        XKOR      COEQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    0.0       2.07      2.50    100.00     13.00      0.0      67.30      0.0     590.70    590.70

*SECNO 13276.000
PRESSURE AND WEIR FLOW


 EGPRS      EGLWC       HB        QWEIR      QPR       BAREA   TRAPEZOID     ELLC      ELTRD
                                                                 AREA
  599.57    598.79      0.0        25.       347.       67.       79.      596.80    599.20


3470 ENCROACHMENT STATIONS      775.0     850.0  TYPE      1  TARGET      75.000
 13276.00     8.66   599.35      0.0       0.0    599.43     0.07      0.64      0.0    598.00
    375.      67.      226.      82.       29.      110.      45.       84.       24.    598.10
    2.01      2.33     2.05     1.81     0.035    0.080    0.035     0.050    590.70   775.00
 0.001790     40.      40.      40.        2         0         2      -0.01     75.00   850.00


*SECNO 13325.000
3280 CROSS SECTION  13325.00 EXTENDED      1.55 FEET


3470 ENCROACHMENT STATIONS      725.0     825.0  TYPE      1  TARGET     100.000

        AK

 13325.00     8.75   599.45      0.0       0.0    599.47     0.02      0.03      0.01   597.60
    375.      81.      156.     138.       69.      153.     104.       84.       25.    596.90
    2.02      1.16     0.99     1.33     0.035    0.030    0.035     0.050    590.70   725.00
 0.000306     55.      55.      55.        2         0         0      -0.00    100.00   825.00


CCHV    0.100 CEHV    0.300
*SECNO 13700.000
   SECNO     DEPTH     CHSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS      112.5     287.5  TYPE      1  TARGET     175.000

        AL

 13700.00     3.00   599.50      0.0       0.0    599.51     0.01      0.04      0.00   596.70
    375.      153.     130.      91.      138.      215.     134.       87.       25.    597.90
    2.13      0.82     0.61     0.68     0.030    0.070    0.030     0.050    591.50   112.50
 0.000080     280.     280.     280.        2         0         0      -0.01    175.00   287.50


*SECNO 13750.000

3470 ENCROACHMENT STATIONS      150.0     350.0  TYPE      1  TARGET     200.000

        AM  STUDER RD. CULVERT, 9-9X6-7X100 CMP, TR 593.7, CROWN 596.9
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          INVERT 590.3

 13750.00      9.21    599.51      0.0       0.0    599.52      0.01      0.01      0.00    592.30
     375.      126.      55.      194.      128.      79.      263.      86.      26.     592.30
     2.16      0.98      0.69      0.74     0.030     0.070     0.030     0.050    590.30    150.00
 0.000075      100.      100.      100.         1         0         0     -0.02    200.00    350.00

*SECNO 13751.000

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   598.50 MAX ELLC   598.80

3470 ENCROACHMENT STATIONS       150.0     350.0  TYPE       1  TARGET       200.000
 13751.00      9.19    599.49      0.0       0.0    599.53      0.04      0.00      0.01    592.30
     375.       37.      46.      292.       32.      54.      168.      83.      26.     592.30
     2.16      1.15      0.84      1.74     0.030     0.070     0.030     0.050    590.30    150.00
 0.000365        1.        1.        1.         2         0         0   -210.32    200.00    350.00

*SECNO 13752.000

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   598.50 MAX ELLC   598.80

3470 ENCROACHMENT STATIONS       150.0     350.0  TYPE       1  TARGET       200.000
 13752.00      9.27    599.57      0.0       0.0    599.61      0.03      0.08      0.00    592.30
     375.       40.      42.      293.       36.      55.      180.      89.      26.     592.30
     2.18      1.11      0.77      1.52     0.030     0.070     0.030     0.050    590.30    150.00
 0.000704      100.      100.      100.         2         0         0   -210.32    200.00    350.00

*SECNO 13753.000

3470 ENCROACHMENT STATIONS       150.0     350.0  TYPE       1  TARGET       200.000
 13753.00      9.30    599.60      0.0       0.0    599.61      0.01      0.00      0.00    592.30
     375.      125.      53.      197.      132.      80.      275.      89.      26.     592.30
     2.18      0.95      0.66      0.72     0.030     0.070     0.030     0.050    590.30    150.00
 0.000069        1.        1.        1.         2         0         0     -0.02    200.00    350.00

*SECNO 13800.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       HTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS       150.0     350.0  TYPE       1  TARGET       200.000

         AN

 13800.00      8.21    599.61      0.0       0.0    599.62      0.01      0.01      0.00    597.60
     375.       54.     157.      164.       53.     168.      139.      90.      27.     597.60
     2.21      1.02      0.93      0.87     0.030     0.070     0.030     0.050    591.40    150.00
 0.000212      100.      100.      100.         2         0         0     -0.01    200.00    350.00

CCHV    0.200 CEHV    0.400
*SECNO 14850.000

3470 ENCROACHMENT STATIONS        50.0     250.0  TYPE       1  TARGET       200.000
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 14850.00      7.43    599.83      0.0       0.0     599.35      0.01      0.22      0.00    597.60
    375.       170.     190.       15.      183.      195.       23.       99.       31.     598.80
    2.51      0.93      0.97      0.63     0.030     0.070     0.030     0.052    592.40     50.00
 0.000235    1005.     1005.     1005.        2         0         0     -0.02    200.00    250.00


*SECNO 15800.000

3470 ENCROACHMENT STATIONS       995.0     1045.0  TYPE      1  TARGET       50.000

        AP

 15800.00      7.06    600.26      0.0       0.0     600.39      0.13      0.50      0.05    600.20
    375.        0.     375.        0.        0.      129.        0.       104.       34.     600.50
    2.59      0.42      2.91      0.0      0.030     0.075     0.030     0.053    593.20    995.00
 0.004047     810.     810.      810.        2         0         0     -0.00     41.40   1036.40


CCHV    0.300 CEHV    0.500
*SECNO 15850.000

3470 ENCROACHMENT STATIONS       950.0     1050.0  TYPE      1  TARGET      100.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       607.10 ELREA       607.10

        AQ  KING ST. CULVERT, 9-4X6-3X60 CMP TR 601.7, CROWN 598.8, INVERT 592.6

 15850.00      7.99    600.59      0.0       0.0     601.06      0.46      0.50      0.17    594.50
    375.        0.     375.        0.        0.       69.        0.       104.       34.     594.50
    2.59      0.0       5.47      0.0      0.030     0.075     0.030     0.053    592.60    995.50
 0.006368     100.     100.      100.        2         0         0     -0.00      9.00   1004.50


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BEP       BAREA     SS        ELCHU     ELCHD
    0.0       2.47      2.50      50.00     9.00      0.0       45.00     0.0      593.60    593.60

*SECNO 15851.000
3230 CROSS SECTION  15851.00 EXTENDED      0.05 FEET


PRESSURE AND WEIR FLOW

 EGPRS      EGLWC       H3        QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                 AREA
   603.25    601.95      0.0        84.      291.       45.       47.      598.80    601.70


3470 ENCROACHMENT STATIONS       950.0     1050.0  TYPE      1  TARGET      100.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       607.10 ELREA       607.10

 15851.00      9.25    601.85      0.0       0.0     602.20      0.34      1.14      0.0     594.50
    375.        0.     375.        0.        0.       80.        0.       105.       34.     594.50
    2.60      0.0       4.69      0.0      0.030     0.075     0.030     0.053    592.60    995.50
 0.003817      60.      60.       60.        2         0         4     -0.00      9.00   1004.50


*SECNO 15900.000
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3280 CROSS SECTION  15900.00 EXTENDED      1.08 FEET

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


3470 ENCROACHMENT STATIONS       975.0     1025.0  TYPE       1  TARGET        50.000

        AR

 15900.00      9.06    602.36      0.0       0.0    602.40      0.03      0.11      0.09    601.30
     375.        7.      350.       18.        9.     238.       16.      105.       34.    600.40
     2.62      0.81      1.47      1.13     0.040     0.075     0.040     0.053    593.30    975.00
 0.000501      100.      100.      100.         0         0         0     -0.00     50.00   1025.00

CCHV    0.100 CEHV    0.300
*SECNO 17030.000
3280 CROSS SECTION  17030.00 EXTENDED      0.32 FEET


3470 ENCROACHMENT STATIONS       875.0     1100.0  TYPE       1  TARGET       225.000

        AS

 17030.00      8.32    602.82      0.0       0.0    602.33      0.01      0.43      0.00    602.50
     375.       54.      223.       99.       92.     213.      122.      114.       37.    601.60
     2.96      0.53      1.05      0.81     0.040     0.075     0.040     0.054    594.50    375.00
 0.000295     1140.     1140.     1140.         4         0         0     -0.01    225.00   1100.00

*SECNO 18100.000
3280 CROSS SECTION  18100.00 EXTENDED      0.69 FEET


3470 ENCROACHMENT STATIONS       200.0      400.0  TYPE       1  TARGET       200.000

        AT

 18100.00      7.49    603.19      0.0       0.0    603.22      0.04      0.39      0.01    603.50
     375.        0.      369.        6.        0.     240.        6.      121.       40.    601.50
     3.12      0.0       1.54      0.90     0.040     0.075     0.040     0.055    595.70    287.13
 0.000764      865.      865.      865.         2         0         0     -0.00     53.21    340.34

CCHV    0.300 CEHV    0.500
*SECNO 18150.000

3470 ENCROACHMENT STATIONS       245.5      254.5  TYPE       1  TARGET         9.000

        AU  KANSAS ST CULVERT, 8-7X5-11X55 CMP TR 604.1 CROWN 601, INVERT 595.

 18150.00      8.05    603.15      0.0       0.0    603.60      0.45      0.17      0.21    597.00
     375.        0.      375.        0.        0.      69.        0.      121.       40.  100000.00
     3.12      0.0       5.41      0.0     0.030     0.050     0.030     0.055    595.10    245.50
 0.007644       95.       95.       95.         2         0         0     -0.00      9.00    254.50

*SECNO 18151.000
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3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE,NRD 15 MIN ELTRD 602.70 MAX ELLC 605.10

3470 ENCROACHMENT STATIONS			245.5	254.5	TYPE	1	TARGET	9.000	
18151.00	7.65	602.75	0.0	0.0	604.11	1.35	0.06	0.45	597.00
375.	0.	375.	0.	0.	40.	0.	121.	40.	100000.00
3.12	0.0	9.34	0.0	0.035	0.032	0.035	0.055	595.10	245.50
0.020169	5.	5.	5.	2	0	0	-25.64	9.00	254.50

*SECNO 18152.000
3280 CROSS SECTION 18152.00 EXTENDED 0.26 FEET

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST

3370 NORMAL BRIDGE,NRD 15 MIN ELTRD 602.70 MAX ELLC 605.10

3470 ENCROACHMENT STATIONS			245.5	254.5	TYPE	1	TARGET	9.000	
18152.00	8.76	603.86	0.0	0.0	605.22	1.35	1.11	0.0	597.00
375.	0.	375.	0.	0.	40.	0.	121.	40.	100000.00
3.12	0.0	9.34	0.0	0.035	0.032	0.035	0.055	595.10	245.50
0.020169	55.	55.	55.	2	0	0	-35.62	9.00	254.50

*SECNO 18153.000
3280 CROSS SECTION 18153.00 EXTENDED 1.68 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS			245.5	254.5	TYPE	1	TARGET	9.000	
18153.00	10.18	605.28	0.0	0.0	605.56	0.28	0.02	0.32	597.00
375.	0.	375.	0.	0.	89.	0.	121.	40.	100000.00
3.13	0.0	4.24	0.0	0.035	0.032	0.035	0.055	595.10	245.50
0.001737	5.	5.	5.	3	0	0	-0.00	9.00	254.50

*SECNO 18210.000
3280 CROSS SECTION 18210.00 EXTENDED 1.71 FEET

3470 ENCROACHMENT STATIONS			203.0	258.0	TYPE	1	TARGET	50.000	
AV									
18210.00	10.71	605.61	0.0	0.0	605.65	0.03	0.01	0.07	603.20
375.	18.	324.	33.	29.	207.	42.	121.	40.	602.00
3.13	0.64	1.55	0.79	0.035	0.032	0.035	0.055	594.90	208.00
0.000091	45.	45.	45.	2	0	0	-0.00	50.00	258.00

CCHV 0.100 CEHV 0.300
*SECNO 13700.000

3280 CROSS SECTION 18750.00 EXTENDED 1.33 FEET

3470 ENCROACHMENT STATIONS 236.0 269.0 TYPE 1 TARGET 33.000

AH

18700.00	10.15	605.65	0.0	0.0	605.68	0.04	0.04	0.00	604.10
375.	0.	375.	0.	0.	240.	0.	123.	41.	100000.00
3.20	0.0	1.55	0.0	0.035	0.032	0.035	0.055	595.50	236.00
0.000112	370.	370.	370.	2	0	0	-0.00	33.00	269.00

CCHV 0.300 CEHV 0.500
*SECNO 18750.000
3280 CROSS SECTION 18750.00 EXTENDED 0.96 FEET

3470 ENCROACHMENT STATIONS 298.3 305.7 TYPE 1 TARGET 7.400

AX KANSAS ST. CULVERT,7-3X5-3X63 CMP TR 605.1, CROWN 600.9,INVERT 595.8

18750.00	9.66	605.45	0.0	0.0	605.91	0.45	0.02	0.21	597.40
375.	0.	375.	0.	0.	69.	0.	124.	41.	100000.00
3.20	0.0	5.40	0.0	0.035	0.032	0.035	0.055	595.80	298.30
0.003518	60.	60.	60.	2	0	0	-0.00	7.40	305.70

SPECIAL BRIDGE

SB	XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHJ	ELCHD
	0.0	2.49	2.50	7.40	7.40	0.0	30.00	0.0	597.00	597.00

*SECNO 18751.000
3280 CROSS SECTION 18751.00 EXTENDED 2.25 FEET

SECNO	DEPTH	CNSEL	CRIWS	WSELK	EG	HV	HL	DLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	JTV	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
611.50	607.11	0.0	182.	195.	30.	29.	600.90	605.10

3470 ENCROACHMENT STATIONS 293.3 305.7 TYPE 1 TARGET 7.400

18751.00	10.95	606.75	0.0	0.0	607.10	0.35	1.18	0.0	597.40
375.	0.	375.	0.	0.	79.	0.	124.	41.	100000.00
3.21	0.0	4.75	0.0	0.035	0.032	0.035	0.055	595.80	298.30
0.002608	60.	63.	68.	2	0	3	-0.00	7.40	305.70

*SECNO 18800.000
3280 CROSS SECTION 18800.00 EXTENDED 3.80 FEET

3470 ENCROACHMENT STATIONS 282.5 332.5 TYPE 1 TARGET 50.000

AY

18800.00	11.90	607.20	0.0	0.0	607.21	0.01	0.01	0.10	603.50
280.	14.	263.	5.	31.	269.	18.	124.	41.	605.10
3.24	0.46	0.97	0.34	0.035	0.032	0.035	0.054	595.30	282.50
0.000033	100.	100.	100.	2	0	0	-0.00	50.00	332.50

CCHV 0.100 CEHV 0.300
*SECNO 19950.000
3280 CROSS SECTION 19950.00 EXTENDED 1.63 FEET

3470 ENCROACHMENT STATIONS 200.0 375.0 TYPE 1 TARGET 175.000

AZ

19950.00	10.83	607.23	0.0	0.0	607.23	0.01	0.02	0.00	604.30
280.	53.	191.	36.	155.	285.	131.	134.	43.	604.70
3.74	0.34	0.67	0.28	0.035	0.032	0.035	0.053	596.40	200.00
0.000016	1005.	1005.	1005.	2	0	0	-0.01	155.00	355.00

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

KING DRAIN

SUMMARY PRINTOUT TABLE 110

SECNO	CHSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
300.000	584.00	2.00	584.13	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
300.000	584.00	2.00	584.13	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	583.39	0.0	584.18	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	583.39	0.0	584.18	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	583.90	0.0	584.20	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	583.90	0.0	584.20	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	584.09	0.0	584.22	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	584.09	0.0	584.22	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
400.000	584.21	0.0	584.24	105.00	0.0	720.00	0.0	105.00	425.00	425.00	530.00	530.00
400.000	584.21	0.0	584.24	105.00	0.0	720.00	0.0	105.00	425.00	425.00	530.00	530.00
1120.000	584.25	0.0	584.40	48.57	0.0	720.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1120.000	584.25	0.0	584.40	48.57	0.0	720.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1200.000	584.25	0.0	584.48	41.72	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1200.000	584.25	0.0	584.48	41.72	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1201.000	584.15	0.0	584.53	41.60	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1201.000	584.15	0.0	584.53	41.60	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1202.000	584.18	0.0	584.55	41.63	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1202.000	584.18	0.0	584.55	41.63	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	584.35	0.0	584.57	41.83	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	584.35	0.0	584.57	41.83	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1300.000	584.48	0.0	584.63	44.85	0.0	720.00	0.0	45.00	993.00	993.00	1038.00	1038.00
1300.000	584.48	0.0	584.63	44.85	0.0	720.00	0.0	45.00	993.00	993.00	1038.00	1038.00
2100.000	585.01	0.0	585.30	38.03	0.0	720.00	0.0	0.0	0.0	480.00	519.00	0.0
2100.000	585.01	0.0	585.30	38.03	0.0	720.00	0.0	0.0	0.0	480.00	519.00	0.0
2800.000	585.72	0.0	585.91	34.05	0.0	720.00	0.0	0.0	0.0	108.50	149.00	0.0
2800.000	585.72	0.0	585.91	34.05	0.0	720.00	0.0	0.0	0.0	108.50	149.00	0.0

SECNO	CNSEL	DIFKNS	SS	TOPWID	OLOB	CCH	OROB	PERENC	STENCL	STCHL	STCHR	STENCR
2926.000	585.70	0.0	586.04	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
2926.000	585.70	0.0	586.04	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	586.52	0.0	586.30	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	586.52	0.0	586.30	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
3319.000	586.85	0.0	587.18	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3319.000	586.85	0.0	587.18	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	586.82	0.0	587.20	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	586.82	0.0	587.20	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	586.94	0.0	587.31	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	586.94	0.0	587.31	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	587.00	0.0	587.32	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	587.00	0.0	587.32	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3400.000	587.21	0.0	587.38	33.42	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3400.000	587.21	0.0	587.38	38.42	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3600.000	587.31	0.0	587.49	38.17	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3600.000	587.31	0.0	587.49	38.17	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3750.000	587.49	0.0	587.53	63.44	14.79	408.56	11.64	0.0	0.0	983.00	1018.00	0.0
3750.000	587.49	0.0	587.53	68.44	14.79	408.56	11.64	0.0	0.0	983.00	1018.00	0.0
3800.000	587.53	0.0	587.61	50.00	73.37	318.74	42.89	50.00	483.00	498.00	518.00	533.00
3800.000	587.53	0.0	587.61	50.00	73.37	318.74	42.89	50.00	483.00	498.00	518.00	533.00
3850.000	587.49	0.0	587.75	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3850.000	587.49	0.0	587.75	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3851.000	587.48	0.0	587.78	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3851.000	587.48	0.0	587.78	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3852.000	587.55	0.0	587.85	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3852.000	587.55	0.0	587.85	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3853.000	587.62	0.0	587.87	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3853.000	587.62	0.0	587.87	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3900.000	587.88	0.0	587.96	50.00	101.38	290.47	43.15	50.00	492.00	509.00	526.00	542.00
3900.000	587.88	0.0	587.96	50.00	101.38	290.47	43.15	50.00	492.00	509.00	526.00	542.00
4000.000	588.06	0.0	588.10	100.00	89.91	312.44	32.64	100.00	563.00	599.00	628.00	663.00
4000.000	588.06	0.0	588.10	100.00	89.91	312.44	32.64	100.00	563.00	599.00	628.00	663.00
5575.000	588.59	0.0	588.69	50.00	34.02	397.83	3.15	50.00	980.00	991.00	1019.00	1030.00
5575.000	588.59	0.0	588.69	50.00	34.02	397.83	3.15	50.00	980.00	991.00	1019.00	1030.00
5625.000	588.47	0.0	589.02	12.00	0.0	435.00	0.0	0.0	0.0	990.00	1002.00	0.0
5625.000	588.47	0.0	589.02	12.00	0.0	435.00	0.0	0.0	0.0	990.00	1002.00	0.0
5626.000	588.39	0.0	589.14	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5626.000	588.39	0.0	589.14	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00

SECNO	CASEL	DIFKWS	SS	TOPWID	CLOB	GCH	BROB	PERENO	STENCL	STCHL	STCHR	STENCR
5627.000	588.74	0.0	589.45	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5627.000	588.74	0.0	589.45	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5628.000	589.09	0.0	589.55	12.00	0.0	435.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5628.000	589.09	0.0	589.55	12.00	0.0	435.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5675.000	589.65	0.0	589.72	50.00	34.09	379.49	21.42	50.00	955.00	967.00	992.00	1005.00
5675.000	589.65	0.0	589.72	50.00	34.09	379.49	21.42	50.00	955.00	967.00	992.00	1005.00
6075.000	590.21	0.0	590.31	31.45	0.0	435.00	0.0	33.00	477.00	477.00	510.00	510.00
6075.000	590.21	0.0	590.31	31.45	0.0	435.00	0.0	33.00	477.00	477.00	510.00	510.00
6125.000	590.24	0.0	590.50	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6125.000	590.24	0.0	590.50	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	590.22	0.0	590.53	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	590.22	0.0	590.53	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	590.32	0.0	590.62	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	590.32	0.0	590.62	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	590.39	0.0	590.64	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	590.39	0.0	590.64	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6175.000	590.70	0.0	590.75	45.00	0.0	435.00	0.0	46.00	468.00	468.00	514.00	514.00
6175.000	590.70	0.0	590.75	45.00	0.0	435.00	0.0	46.00	468.00	468.00	514.00	514.00
7050.000	591.22	0.0	591.31	47.59	0.14	434.86	0.0	100.00	410.00	437.00	479.00	510.00
7050.000	591.22	0.0	591.31	47.59	0.14	434.86	0.0	100.00	410.00	437.00	479.00	510.00
8125.000	593.39	0.0	593.47	75.00	22.97	398.26	13.76	75.00	960.00	996.00	1025.00	1035.00
8125.000	593.39	0.0	593.47	75.00	22.97	398.26	13.76	75.00	960.00	996.00	1025.00	1035.00
8175.000	593.53	0.0	593.58	89.40	144.93	156.27	133.79	95.00	930.00	995.00	1005.00	1025.00
8175.000	593.53	0.0	593.58	89.40	144.93	156.27	133.79	95.00	930.00	995.00	1005.00	1025.00
8176.000	595.20	0.0	595.23	75.00	191.35	111.06	132.59	75.00	950.00	995.00	1005.00	1025.00
8176.000	595.20	0.0	595.23	75.00	191.35	111.06	132.59	75.00	950.00	995.00	1005.00	1025.00
8225.000	595.23	0.0	595.24	75.00	74.01	243.15	57.84	75.00	956.00	979.00	1013.00	1031.00
8225.000	595.23	0.0	595.24	75.00	74.01	243.15	57.84	75.00	956.00	979.00	1013.00	1031.00
9880.000	595.50	0.0	595.51	200.00	81.79	217.33	75.87	200.00	900.00	984.00	1019.00	1100.00
9880.000	595.50	0.0	595.51	200.00	81.79	217.33	75.87	200.00	900.00	984.00	1019.00	1100.00
9930.000	595.52	0.0	595.55	100.00	112.62	125.31	137.07	100.00	950.00	995.00	1005.00	1050.00
9930.000	595.52	0.0	595.55	100.00	112.62	125.31	137.07	100.00	950.00	995.00	1005.00	1050.00
9931.000	595.47	0.0	595.58	100.00	85.39	180.06	109.55	100.00	950.00	995.00	1005.00	1050.00
9931.000	595.47	0.0	595.58	100.00	85.39	180.06	109.55	100.00	950.00	995.00	1005.00	1050.00
9932.000	595.59	0.0	595.68	100.00	92.63	165.58	115.79	100.00	950.00	995.00	1005.00	1050.00
9932.000	595.59	0.0	595.68	100.00	92.63	165.58	115.79	100.00	950.00	995.00	1005.00	1050.00
9933.000	595.65	0.0	595.69	100.00	97.61	159.41	117.97	100.00	950.00	995.00	1005.00	1050.00
9933.000	595.65	0.0	595.69	100.00	97.61	159.41	117.97	100.00	950.00	995.00	1005.00	1050.00

SECND	CHSEL	DIFKWS	EG	TOPVID	OLCB	OCH	OROB	PERENC	STENCL	STCHL	STCHR	STENCR
9980.000	595.69	0.0	595.71	200.00	40.37	272.31	62.31	200.00	900.00	980.00	1017.00	1100.00
9980.000	595.69	0.0	595.71	200.00	40.37	272.31	62.31	200.00	900.00	980.00	1017.00	1100.00
10800.000	595.80	0.0	595.82	120.00	65.72	201.77	105.51	120.00	960.00	1007.00	1037.00	1080.00
10800.000	595.80	0.0	595.82	120.00	65.72	201.77	105.51	120.00	960.00	1007.00	1037.00	1080.00
10850.000	595.30	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10850.000	595.80	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	595.30	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	595.30	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10900.000	595.86	0.0	595.92	50.00	17.08	310.03	47.39	50.00	986.50	998.00	1025.00	1036.50
10900.000	595.86	0.0	595.92	50.00	17.08	310.03	47.39	50.00	986.50	998.00	1025.00	1036.50
11150.000	595.96	0.0	595.99	140.00	28.56	224.36	122.08	140.00	940.00	998.00	1025.00	1080.00
11150.000	595.96	0.0	595.99	140.00	28.56	224.36	122.08	140.00	940.00	998.00	1025.00	1080.00
12150.000	596.40	0.0	596.49	83.03	1.33	306.73	66.94	113.50	946.50	998.00	1025.00	1060.00
12150.000	596.40	0.0	596.49	83.03	1.33	306.73	66.94	113.50	946.50	998.00	1025.00	1060.00
13225.000	598.00	0.0	598.16	25.43	0.0	375.00	0.0	50.00	778.00	801.00	828.00	828.00
13225.000	598.00	0.0	598.16	25.43	0.0	375.00	0.0	50.00	778.00	801.00	828.00	828.00
13275.000	598.57	0.0	598.79	13.00	0.0	375.00	0.0	60.00	780.00	793.00	806.00	840.00
13275.000	598.57	0.0	598.79	13.00	0.0	375.00	0.0	60.00	780.00	793.00	806.00	840.00
13276.000	599.36	0.0	599.43	75.00	66.56	226.36	81.98	75.00	775.00	793.00	806.00	850.00
13276.000	599.36	0.0	599.43	75.00	66.56	226.36	81.98	75.00	775.00	793.00	806.00	850.00
13325.000	599.45	0.0	599.47	100.00	80.94	156.44	137.03	100.00	725.00	758.00	784.00	825.00
13325.000	599.45	0.0	599.47	100.00	80.94	156.44	137.63	100.00	725.00	758.00	784.00	825.00
13700.000	599.50	0.0	599.51	175.00	153.36	130.29	91.36	175.00	112.50	185.00	220.00	287.50
13700.000	599.50	0.0	599.51	175.00	153.36	130.29	91.36	175.00	112.50	185.00	220.00	287.50
13750.000	599.51	0.0	599.52	200.00	125.79	54.92	194.28	200.00	150.00	195.50	204.50	350.00
13750.000	599.51	0.0	599.52	200.00	125.79	54.92	194.28	200.00	150.00	195.50	204.50	350.00
13751.000	599.49	0.0	599.53	200.00	36.98	45.87	292.16	200.00	150.00	195.50	204.50	350.00
13751.000	599.49	0.0	599.53	200.00	36.98	45.87	292.16	200.00	150.00	195.50	204.50	350.00
13752.000	599.57	0.0	599.61	200.00	40.12	42.35	292.53	200.00	150.00	195.50	204.50	350.00
13752.000	599.57	0.0	599.61	200.00	40.12	42.35	292.53	200.00	150.00	195.50	204.50	350.00
13753.000	599.60	0.0	599.61	200.00	124.75	53.19	197.06	200.00	150.00	195.50	204.50	350.00
13753.000	599.60	0.0	599.61	200.00	124.75	53.19	197.06	200.00	150.00	195.50	204.50	350.00
13800.000	599.61	0.0	599.62	200.00	53.95	155.84	164.21	200.00	150.00	180.00	208.00	350.00
13800.000	599.61	0.0	599.62	200.00	53.95	155.84	164.21	200.00	150.00	180.00	208.00	350.00

SECND	CHSEL	DIFKNS	EG	TOP.ID	QLOB	CCH	ORDB	PERENC	STENCL	STCHL	STCHR	STENCR
14850.000	599.83	0.0	599.85	200.00	170.04	190.23	14.73	200.00	50.00	185.00	220.00	250.00
14850.000	599.83	0.0	599.85	200.00	170.04	190.23	14.73	200.00	50.00	185.00	220.00	250.00
15800.000	600.26	0.0	600.39	41.40	0.17	374.83	0.0	50.00	995.00	1003.00	1037.00	1045.00
15800.000	600.26	0.0	600.39	41.40	0.17	374.83	0.0	50.00	995.00	1003.00	1037.00	1045.00
15850.000	600.59	0.0	601.06	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15850.000	600.59	0.0	601.06	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	601.85	0.0	602.20	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	601.85	0.0	602.20	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15900.000	602.36	0.0	602.40	50.00	7.20	349.81	17.99	50.00	975.00	983.00	1017.00	1025.00
15900.000	602.36	0.0	602.40	50.00	7.20	349.81	17.99	50.00	975.00	983.00	1017.00	1025.00
17030.000	602.82	0.0	602.83	225.00	53.63	222.52	98.85	225.00	875.00	983.00	1017.00	1100.00
17030.000	602.82	0.0	602.83	225.00	53.63	222.52	98.85	225.00	875.00	983.00	1017.00	1100.00
18100.000	603.19	0.0	603.22	53.21	0.0	369.41	5.59	200.00	200.00	287.00	333.00	400.00
18100.000	603.19	0.0	603.22	53.21	0.0	369.41	5.59	200.00	200.00	287.00	333.00	400.00
18150.000	603.15	0.0	603.50	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18150.000	603.15	0.0	603.50	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.75	0.0	604.11	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.75	0.0	604.11	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	603.86	0.0	605.22	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	603.86	0.0	605.22	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	605.28	0.0	605.56	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	605.28	0.0	605.56	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18210.000	605.61	0.0	605.65	50.00	13.29	323.57	33.14	50.00	209.00	220.00	246.00	258.00
18210.000	605.61	0.0	605.65	50.00	13.29	323.57	33.14	50.00	209.00	220.00	246.00	258.00
18700.000	605.65	0.0	605.68	33.00	0.0	375.00	0.0	33.00	236.00	236.00	269.00	269.00
18700.000	605.65	0.0	605.68	33.00	0.0	375.00	0.0	33.00	236.00	236.00	269.00	269.00
18750.000	605.46	0.0	605.91	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18750.000	605.46	0.0	605.91	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	606.75	0.0	607.10	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	606.75	0.0	607.10	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18800.000	607.20	0.0	607.21	50.00	14.10	259.81	6.09	50.00	282.50	291.00	324.00	332.50
18800.000	607.20	0.0	607.21	50.00	14.10	259.81	6.09	50.00	282.50	291.00	324.00	332.50
19950.000	607.23	0.0	607.23	155.00	52.81	191.07	36.12	175.00	200.00	253.00	292.00	375.00
19950.000	607.23	0.0	607.23	155.00	52.81	191.07	36.12	175.00	200.00	253.00	292.00	375.00

KING DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRINS	ES	10K*S	VCH	AREA	.01K
300.000	315.00	0.0	0.0	576.20	720.00	584.00	0.0	584.13	4.03	2.91	247.40	358.51
300.000	315.00	0.0	0.0	576.20	720.00	584.00	0.0	584.13	4.03	2.91	247.40	358.51
301.000	1.00	582.80	591.50	576.20	720.00	583.89	0.0	584.19	33.00	4.35	165.40	125.33
301.000	1.00	582.80	591.50	576.20	720.00	583.89	0.0	584.18	33.00	4.35	165.40	125.33
302.000	5.20	582.80	591.50	576.20	720.00	583.90	0.0	584.20	33.02	4.35	165.40	125.30
302.000	5.20	582.80	591.50	576.20	720.00	583.90	0.0	584.20	33.02	4.35	165.40	125.30
303.000	1.00	0.0	0.0	576.20	720.00	584.09	0.0	584.22	3.86	2.87	251.11	366.65
303.000	1.00	0.0	0.0	576.20	720.00	584.09	0.0	584.22	3.86	2.87	251.11	366.65
400.000	80.00	0.0	0.0	576.90	720.00	584.21	0.0	584.24	0.87	1.34	538.52	774.05
400.000	80.00	0.0	0.0	576.90	720.00	584.21	0.0	584.24	0.87	1.34	538.52	774.05
1120.000	720.00	0.0	0.0	577.90	720.00	584.25	0.0	584.40	5.02	3.02	238.14	321.45
1120.000	720.00	0.0	0.0	577.90	720.00	584.25	0.0	584.40	5.02	3.02	238.14	321.45
1200.000	90.00	0.0	0.0	577.90	720.00	584.25	0.0	584.48	9.05	3.82	188.63	239.33
1200.000	90.00	0.0	0.0	577.90	720.00	584.25	0.0	584.48	9.05	3.82	189.63	239.33
1201.000	1.00	583.80	584.50	577.90	720.00	584.15	0.0	584.53	49.73	4.39	147.16	102.10
1201.000	1.00	583.80	584.50	577.90	720.00	584.15	0.0	584.53	49.73	4.39	147.16	102.10
1202.000	5.00	583.80	584.50	577.90	720.00	584.18	0.0	584.55	49.79	4.89	147.16	102.03
1202.000	5.00	583.80	584.50	577.90	720.00	584.18	0.0	584.55	49.79	4.89	147.16	102.03
1203.000	1.00	0.0	0.0	577.90	720.00	584.35	0.0	584.57	8.48	3.74	192.71	247.27
1203.000	1.00	0.0	0.0	577.90	720.00	584.35	0.0	584.57	8.48	3.74	192.71	247.27
1300.000	85.00	0.0	0.0	578.10	720.00	584.48	0.0	584.63	5.11	3.09	232.71	318.51
1300.000	85.00	0.0	0.0	578.10	720.00	584.48	0.0	584.63	5.11	3.09	232.71	318.51
2100.000	800.00	0.0	0.0	580.30	720.00	585.01	0.0	585.30	13.66	4.38	164.27	194.83
2100.000	800.00	0.0	0.0	580.30	720.00	585.01	0.0	585.30	13.66	4.38	164.27	194.83
2800.000	700.00	0.0	0.0	578.10	720.00	585.72	0.0	585.91	5.75	3.50	205.83	300.29
2800.000	700.00	0.0	0.0	578.10	720.00	585.72	0.0	585.91	5.75	3.50	205.83	300.29
2926.000	114.00	0.0	0.0	577.90	720.00	585.70	0.0	586.04	11.86	4.69	153.56	209.06
2926.000	114.00	0.0	0.0	577.90	720.00	585.70	0.0	586.04	11.86	4.69	153.56	209.06
2927.000	25.00	586.60	584.90	577.90	720.00	586.52	0.0	586.80	9.03	4.24	169.85	239.67
2927.000	25.00	586.60	584.90	577.90	720.00	586.52	0.0	586.80	9.03	4.24	169.85	239.67
3319.000	359.00	0.0	0.0	579.20	720.00	586.85	0.0	587.18	11.92	4.61	156.15	208.57
3319.000	359.00	0.0	0.0	579.20	720.00	586.85	0.0	587.18	11.92	4.61	156.15	208.57
3320.000	1.00	589.50	590.00	579.20	720.00	586.82	0.0	587.20	26.80	4.91	146.65	139.07
3320.000	1.00	589.50	590.00	579.20	720.00	586.82	0.0	587.20	26.80	4.91	146.65	139.07
3321.000	42.00	589.50	590.00	579.20	720.00	586.94	0.0	587.31	26.80	4.91	146.65	139.07
3321.000	42.00	589.50	590.00	579.20	720.00	586.94	0.0	587.31	26.80	4.91	146.65	139.07

SECND	XLCH	ELTRO	ELLC	EL'IN	D	CWSEL	CRTWS	EG	10(*S	VCH	AREA	.01K
3322.000	1.00	0.0	0.0	579.20	720.00	587.00	0.0	587.32	11.29	4.52	159.24	214.31
3322.000	1.00	0.0	0.0	579.20	720.00	587.00	0.0	587.32	11.29	4.52	159.24	214.31
3400.000	65.00	0.0	0.0	579.70	720.00	587.21	0.0	587.39	5.11	3.28	219.42	318.38
3400.000	65.00	0.0	0.0	579.70	720.00	587.21	0.0	587.38	5.11	3.28	219.42	318.38
3600.000	200.00	0.0	0.0	579.90	720.00	587.31	0.0	587.49	5.37	3.34	215.62	310.73
3600.000	200.00	0.0	0.0	579.90	720.00	587.31	0.0	587.49	5.37	3.34	215.62	310.73
3750.000	145.00	0.0	0.0	579.00	435.00	587.49	0.0	587.53	0.94	1.65	303.92	449.67
3750.000	145.00	0.0	0.0	579.00	435.00	587.49	0.0	587.53	0.94	1.65	303.92	449.67
3800.000	455.00	0.0	0.0	580.60	435.00	587.53	0.0	587.61	2.73	2.54	224.78	263.45
3800.000	455.00	0.0	0.0	580.60	435.00	587.53	0.0	587.61	2.73	2.54	224.78	263.45
3850.000	100.00	0.0	0.0	580.60	435.00	587.49	0.0	587.75	11.10	4.06	107.03	130.58
3850.000	100.00	0.0	0.0	580.60	435.00	587.49	0.0	587.75	11.10	4.06	107.03	130.58
3851.000	5.00	588.10	589.80	580.60	435.00	587.48	0.0	587.78	26.76	4.41	98.65	84.09
3851.000	5.00	588.10	589.80	580.60	435.00	587.48	0.0	587.78	26.76	4.41	98.65	84.09
3852.000	25.00	588.10	589.30	580.60	435.00	587.55	0.0	587.85	26.76	4.41	98.65	84.09
3852.000	25.00	588.10	589.30	580.60	435.00	587.55	0.0	587.85	26.76	4.41	98.65	84.09
3853.000	1.00	0.0	0.0	580.60	435.00	587.62	0.0	587.87	10.52	3.98	109.16	134.14
3853.000	1.00	0.0	0.0	580.60	435.00	587.62	0.0	587.87	10.52	3.98	109.16	134.14
3900.000	100.00	0.0	0.0	580.50	435.00	587.88	0.0	587.96	2.74	2.55	227.33	262.95
3900.000	100.00	0.0	0.0	580.50	435.00	587.88	0.0	587.96	2.74	2.55	227.33	262.95
4000.000	480.00	0.0	0.0	580.50	435.00	588.06	0.0	588.10	2.50	1.82	326.68	275.09
4000.000	480.00	0.0	0.0	580.50	435.00	588.06	0.0	588.10	2.50	1.82	326.68	275.09
5575.000	1470.00	0.0	0.0	581.70	435.00	588.59	0.0	588.69	6.49	2.67	178.46	170.91
5575.000	1470.00	0.0	0.0	581.70	435.00	588.59	0.0	588.69	6.49	2.67	178.46	170.91
5625.000	100.00	0.0	0.0	581.90	435.00	588.47	0.0	589.02	21.42	5.96	72.95	93.99
5625.000	100.00	0.0	0.0	581.90	435.00	588.47	0.0	589.02	21.42	5.96	72.95	93.99
5626.000	5.00	586.50	593.60	581.90	435.00	588.39	0.0	589.14	72.94	6.96	62.51	50.93
5626.000	5.00	586.50	593.60	581.90	435.00	588.39	0.0	589.14	72.94	6.96	62.51	50.93
5627.000	40.00	586.50	593.60	581.90	435.00	588.74	0.0	589.45	79.39	6.79	64.04	48.82
5627.000	40.00	586.50	593.60	581.90	435.00	588.74	0.0	589.45	79.39	6.79	64.04	48.82
5628.000	5.00	0.0	0.0	581.90	435.00	589.09	0.0	589.55	15.45	5.41	80.46	110.67
5628.000	5.00	0.0	0.0	581.90	435.00	589.09	0.0	589.55	15.45	5.41	80.46	110.67
5675.000	100.00	0.0	0.0	581.60	435.00	589.65	0.0	589.72	2.97	2.30	218.24	252.29
5675.000	100.00	0.0	0.0	581.60	435.00	589.65	0.0	589.72	2.97	2.30	218.24	252.29
6075.000	1170.00	0.0	0.0	583.10	435.00	590.21	0.0	590.31	9.98	2.58	168.33	137.67
6075.000	1170.00	0.0	0.0	583.10	435.00	590.21	0.0	590.31	9.98	2.58	168.33	137.67
6125.000	100.00	0.0	0.0	582.80	435.00	590.24	0.0	590.50	16.28	4.11	105.96	107.80
6125.000	100.00	0.0	0.0	582.80	435.00	590.24	0.0	590.50	16.28	4.11	105.96	107.80

SECND	XLCH	ELTRJ	ELLC	EL'IN'	Q	CWSEL	CRIMS	EG	10K*S	VCH	AREA	.01K
6126.000	5.00	593.10	596.00	582.80	435.00	590.22	0.0	590.53	19.31	4.47	97.28	98.99
6126.000	5.00	593.10	596.00	582.80	435.00	590.22	0.0	590.53	19.31	4.47	97.28	98.99
6127.000	50.00	593.10	596.00	582.80	435.00	590.32	0.0	590.62	19.10	4.43	98.09	99.54
6127.000	50.00	593.10	596.00	582.80	435.00	590.32	0.0	590.62	19.10	4.43	98.09	99.54
6128.000	5.00	0.0	0.0	582.80	435.00	590.39	0.0	590.64	15.14	4.02	108.29	111.78
6128.000	5.00	0.0	0.0	582.80	435.00	590.39	0.0	590.64	15.14	4.02	108.29	111.78
6175.000	100.00	0.0	0.0	583.00	435.00	590.70	0.0	590.75	3.27	1.64	266.01	240.54
6175.000	100.00	0.0	0.0	583.00	435.00	590.70	0.0	590.75	3.27	1.64	266.01	240.54
7050.000	795.00	0.0	0.0	584.00	435.00	591.22	0.0	591.31	23.69	2.46	177.21	89.37
7050.000	795.00	0.0	0.0	584.00	435.00	591.22	0.0	591.31	23.69	2.46	177.21	89.37
8125.000	1030.00	0.0	0.0	585.40	435.00	593.39	0.0	593.47	18.69	2.45	193.05	100.63
8125.000	1030.00	0.0	0.0	585.40	435.00	593.39	0.0	593.47	18.69	2.45	193.05	100.63
8175.000	100.00	0.0	0.0	584.90	435.00	593.53	0.0	593.58	6.93	1.91	231.48	165.27
8175.000	100.00	0.0	0.0	584.90	435.00	593.53	0.0	593.58	6.93	1.91	231.48	165.27
8176.000	44.00	594.70	591.50	584.90	435.00	595.20	0.0	595.23	1.88	1.12	353.30	316.94
8176.000	44.00	594.70	591.50	584.90	435.00	595.20	0.0	595.23	1.88	1.12	353.30	316.94
8225.000	100.00	0.0	0.0	585.00	375.00	595.23	0.0	595.24	1.35	0.88	422.92	323.00
8225.000	100.00	0.0	0.0	585.00	375.00	595.23	0.0	595.24	1.35	0.88	422.92	323.00
9880.000	1500.00	0.0	0.0	586.70	375.00	595.50	0.0	595.51	2.51	1.04	431.27	236.79
9880.000	1500.00	0.0	0.0	586.70	375.00	595.50	0.0	595.51	2.51	1.04	431.27	236.79
9930.000	100.00	0.0	0.0	587.30	375.00	595.52	0.0	595.55	4.20	1.59	252.42	182.89
9930.000	100.00	0.0	0.0	587.30	375.00	595.52	0.0	595.55	4.20	1.59	252.42	182.89
9931.000	5.00	594.30	597.10	587.30	375.00	595.47	0.0	595.58	24.39	3.12	150.19	75.93
9931.000	5.00	594.30	597.10	587.30	375.00	595.47	0.0	595.58	24.39	3.12	150.19	75.93
9932.000	45.00	594.30	597.10	587.30	375.00	595.59	0.0	595.68	19.52	2.82	161.94	84.88
9932.000	45.00	594.30	597.10	587.30	375.00	595.59	0.0	595.68	19.52	2.82	161.94	84.88
9933.000	5.00	0.0	0.0	587.30	375.00	595.65	0.0	595.69	2.66	2.00	265.20	229.73
9933.000	5.00	0.0	0.0	587.30	375.00	595.65	0.0	595.69	2.66	2.00	265.20	229.73
9980.000	100.00	0.0	0.0	587.30	375.00	595.69	0.0	595.71	1.80	1.32	394.28	279.50
9980.000	100.00	0.0	0.0	587.30	375.00	595.69	0.0	595.71	1.80	1.32	394.28	279.50
10800.000	660.00	0.0	0.0	587.80	375.00	595.30	0.0	595.32	1.59	1.23	342.41	297.20
10800.000	660.00	0.0	0.0	587.80	375.00	595.80	0.0	595.82	1.59	1.23	342.41	297.20
10850.000	100.00	0.0	0.0	588.40	375.00	595.80	0.0	595.86	4.90	2.01	186.59	169.45
10850.000	100.00	0.0	0.0	588.40	375.00	595.80	0.0	595.86	4.90	2.01	186.59	169.45
10851.000	1.00	600.30	596.40	588.40	375.00	595.80	0.0	595.86	4.92	2.01	186.32	169.09
10851.000	1.00	600.30	596.40	588.40	375.00	595.80	0.0	595.86	4.92	2.01	186.32	169.09
10852.000	12.00	600.30	596.40	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.52	169.35
10852.000	12.00	600.30	596.40	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.52	169.35

SECND	XLCH	ELTRD	ELLC	CLMIN	G	CASEL	CRIMS	ES	10K*S	VCH	AREA	.01K
10853.000	1.00	0.0	0.0	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.53	169.37
10853.000	1.00	0.0	0.0	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.53	169.37
10900.000	100.00	0.0	0.0	587.90	375.00	595.86	0.0	595.92	4.57	2.06	193.13	175.35
10900.000	100.00	0.0	0.0	587.90	375.00	595.86	0.0	595.92	4.57	2.06	193.13	175.35
11150.000	195.00	0.0	0.0	588.20	375.00	595.96	0.0	595.99	2.71	1.55	289.13	227.88
11150.000	195.00	0.0	0.0	588.20	375.00	595.96	0.0	595.99	2.71	1.55	289.13	227.88
12150.000	1000.00	0.0	0.0	589.50	375.00	596.40	0.0	596.49	9.02	2.52	166.06	124.84
12150.000	1000.00	0.0	0.0	589.50	375.00	596.40	0.0	596.49	9.02	2.52	166.06	124.84
13225.000	905.00	0.0	0.0	590.80	375.00	598.00	0.0	598.16	54.76	3.29	113.86	50.68
13225.000	905.00	0.0	0.0	590.80	375.00	598.00	0.0	598.16	54.76	3.29	113.86	50.68
13275.000	100.00	0.0	0.0	590.70	375.00	598.57	0.0	598.79	67.99	3.74	100.22	45.48
13275.000	100.00	0.0	0.0	590.70	375.00	598.57	0.0	598.79	67.99	3.74	100.22	45.48
13276.000	40.00	599.20	596.80	590.70	375.00	599.36	0.0	599.43	17.90	2.05	184.40	38.63
13276.000	40.00	599.20	596.80	590.70	375.00	599.36	0.0	599.43	17.90	2.05	184.40	38.63
13325.000	55.00	0.0	0.0	590.70	375.00	599.45	0.0	599.47	3.06	0.99	331.02	214.43
13325.000	55.00	0.0	0.0	590.70	375.00	599.45	0.0	599.47	3.06	0.99	331.02	214.43
13700.000	280.00	0.0	0.0	591.50	375.00	599.50	0.0	599.51	0.90	0.61	536.87	419.89
13700.000	280.00	0.0	0.0	591.50	375.00	599.50	0.0	599.51	0.80	0.61	536.87	419.89
13750.000	100.00	0.0	0.0	590.30	375.00	599.51	0.0	599.52	0.75	0.69	470.48	431.67
13750.000	100.00	0.0	0.0	590.30	375.00	599.51	0.0	599.52	0.75	0.69	470.48	431.67
13751.000	1.00	598.50	593.80	590.30	375.00	599.49	0.0	599.53	8.65	0.84	254.64	127.51
13751.000	1.00	598.50	598.80	590.30	375.00	599.49	0.0	599.53	8.65	0.84	254.64	127.51
13752.000	100.00	598.50	598.80	590.30	375.00	599.57	0.0	599.61	7.04	0.77	271.33	141.29
13752.000	100.00	598.50	598.80	590.30	375.00	599.57	0.0	599.61	7.04	0.77	271.33	141.29
13753.000	1.00	0.0	0.0	590.30	375.00	599.60	0.0	599.61	0.69	0.66	487.13	452.76
13753.000	1.00	0.0	0.0	590.30	375.00	599.60	0.0	599.61	0.69	0.66	487.13	452.76
13800.000	100.00	0.0	0.0	591.40	375.00	599.61	0.0	599.62	2.12	0.93	409.75	257.57
13800.000	100.00	0.0	0.0	591.40	375.00	599.61	0.0	599.62	2.12	0.93	409.75	257.57
14850.000	1005.00	0.0	0.0	592.40	375.00	599.83	0.0	599.85	2.35	0.97	401.52	244.41
14850.000	1005.00	0.0	0.0	592.40	375.00	599.83	0.0	599.85	2.35	0.97	401.52	244.41
15800.000	810.00	0.0	0.0	593.20	375.00	600.26	0.0	600.39	40.47	2.91	129.16	58.95
15800.000	810.00	0.0	0.0	593.20	375.00	600.26	0.0	600.39	40.47	2.91	129.16	58.95
15850.000	100.00	0.0	0.0	592.60	375.00	600.59	0.0	601.06	63.68	5.47	68.57	46.99
15850.000	100.00	0.0	0.0	592.60	375.00	600.59	0.0	601.06	63.68	5.47	63.57	46.99
15851.000	60.00	601.70	598.80	592.60	375.00	601.85	0.0	602.20	38.17	4.69	79.94	60.69
15851.000	60.00	601.70	598.80	592.60	375.00	601.85	0.0	602.20	38.17	4.69	79.94	60.69
15900.000	100.00	0.0	0.0	593.30	375.00	602.36	0.0	602.40	5.01	1.47	263.00	167.57
15900.000	100.00	0.0	0.0	593.30	375.00	602.36	0.0	602.40	5.01	1.47	263.00	167.57

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10(*S	VCH	AREA	.01K
17030.000	1140.00	0.0	0.0	594.50	375.00	602.82	0.0	602.83	2.95	1.05	426.89	218.26
17030.000	1140.00	0.0	0.0	594.50	375.00	602.82	0.0	602.83	2.95	1.05	426.89	218.26
18100.000	865.00	0.0	0.0	595.70	375.00	603.19	0.0	603.22	7.64	1.54	246.31	135.63
18100.000	865.00	0.0	0.0	595.70	375.00	603.19	0.0	603.22	7.64	1.54	246.31	135.63
18150.000	95.00	0.0	0.0	595.10	375.00	603.15	0.0	603.60	76.44	5.41	69.32	42.89
18150.000	95.00	0.0	0.0	595.10	375.00	603.15	0.0	603.60	76.44	5.41	69.32	42.89
18151.000	5.00	602.70	605.10	595.10	375.00	602.75	0.0	604.11	201.69	9.34	40.15	26.41
18151.000	5.00	602.70	605.10	595.10	375.00	602.75	0.0	604.11	201.69	9.34	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	375.00	603.86	0.0	605.22	201.69	9.34	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	375.00	603.86	0.0	605.22	201.69	9.34	40.15	26.41
18153.000	5.00	0.0	0.0	595.10	375.00	605.28	0.0	605.56	17.37	4.24	83.54	89.99
18153.000	5.00	0.0	0.0	595.10	375.00	605.28	0.0	605.56	17.37	4.24	83.54	89.99
18210.000	45.00	0.0	0.0	594.90	375.00	605.61	0.0	605.65	0.91	1.56	277.95	393.95
18210.000	45.00	0.0	0.0	594.90	375.00	605.61	0.0	605.65	0.91	1.56	277.95	393.95
18700.000	370.00	0.0	0.0	595.50	375.00	605.65	0.0	605.68	1.12	1.56	240.14	354.10
18700.000	370.00	0.0	0.0	595.50	375.00	605.65	0.0	605.68	1.12	1.56	240.14	354.10
18750.000	60.00	0.0	0.0	595.80	375.00	605.46	0.0	605.91	35.18	5.40	69.42	63.22
18750.000	60.00	0.0	0.0	595.80	375.00	605.46	0.0	605.91	35.18	5.40	69.42	63.22
18751.000	68.00	605.10	600.90	595.80	375.00	605.75	0.0	607.10	26.08	4.75	78.95	73.43
18751.000	68.00	605.10	600.90	595.80	375.00	605.75	0.0	607.10	26.08	4.75	78.95	73.43
18800.000	100.00	0.0	0.0	595.30	280.00	607.20	0.0	607.21	0.33	0.97	316.48	488.34
18800.000	100.00	0.0	0.0	595.30	280.00	607.20	0.0	607.21	0.33	0.97	316.48	488.34
19950.000	1005.00	0.0	0.0	596.40	280.00	607.23	0.0	607.23	0.16	0.67	571.31	689.98
19950.000	1005.00	0.0	0.0	596.40	280.00	607.23	0.0	607.23	0.16	0.67	571.31	689.98

KING DRAIN

SUMMARY PRINTOUT TABLE 150

SECND	Q	CWSEL	DIFMSP	DIFMSX	DIFKJS	TOPWID	XLCH
300.000	720.00	584.00	0.0	0.0	2.00	42.00	315.00
300.000	720.00	584.00	0.0	0.0	2.00	42.00	315.00
301.000	720.00	583.89	0.0	-0.11	0.0	42.00	1.00
301.000	720.00	583.89	0.0	-0.11	0.0	42.00	1.00
302.000	720.00	583.90	0.0	0.02	0.0	42.00	5.20
302.000	720.00	583.90	0.0	0.02	0.0	42.00	5.20
303.000	720.00	584.09	0.0	0.18	0.0	42.00	1.00
303.000	720.00	584.09	0.0	0.18	0.0	42.00	1.00
400.000	720.00	584.21	0.0	0.12	0.0	105.00	80.00
400.000	720.00	584.21	0.0	0.12	0.0	105.00	80.00
1120.000	720.00	584.25	0.0	0.04	0.0	48.57	720.00
1120.000	720.00	584.25	0.0	0.04	0.0	48.57	720.00
1200.000	720.00	584.25	0.0	0.00	0.0	41.72	90.00
1200.000	720.00	584.25	0.0	0.00	0.0	41.72	90.00
1201.000	720.00	584.15	0.0	-0.10	0.0	41.60	1.00
1201.000	720.00	584.15	0.0	-0.10	0.0	41.60	1.00
1202.000	720.00	584.18	0.0	0.02	0.0	41.63	5.00
1202.000	720.00	584.18	0.0	0.02	0.0	41.63	5.00
1203.000	720.00	584.35	0.0	0.17	0.0	41.83	1.00
1203.000	720.00	584.35	0.0	0.17	0.0	41.83	1.00
1300.000	720.00	584.48	0.0	0.13	0.0	44.85	85.00
1300.000	720.00	584.48	0.0	0.13	0.0	44.85	85.00
2100.000	720.00	585.01	0.0	0.52	0.0	38.03	300.00
2100.000	720.00	585.01	0.0	0.52	0.0	38.03	300.00
2800.000	720.00	585.72	0.0	0.71	0.0	34.05	700.00
2800.000	720.00	585.72	0.0	0.71	0.0	34.05	700.00
2926.000	720.00	585.70	0.0	-0.01	0.0	20.00	114.00
2926.000	720.00	585.70	0.0	-0.01	0.0	20.00	114.00
2927.000	720.00	586.52	0.0	0.82	0.0	20.00	25.00
2927.000	720.00	586.52	0.0	0.82	0.0	20.00	25.00
3319.000	720.00	586.85	0.0	0.33	0.0	21.00	359.00
3319.000	720.00	586.85	0.0	0.33	0.0	21.00	359.00
3320.000	720.00	586.82	0.0	-0.03	0.0	21.00	1.00
3320.000	720.00	586.82	0.0	-0.03	0.0	21.00	1.00
3321.000	720.00	586.94	0.0	0.11	0.0	21.00	42.00
3321.000	720.00	586.94	0.0	0.11	0.0	21.00	42.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
3322.000	720.00	587.00	0.0	0.06	0.0	21.00	1.00
3322.000	720.00	587.00	0.0	0.06	0.0	21.00	1.00
3400.000	720.00	587.21	0.0	0.21	0.0	38.42	65.00
3400.000	720.00	587.21	0.0	0.21	0.0	38.42	65.00
3600.000	720.00	587.31	0.0	0.10	0.0	38.17	200.00
3600.000	720.00	587.31	0.0	0.10	0.0	38.17	200.00
3750.000	435.00	587.49	0.0	0.18	0.0	68.44	145.00
3750.000	435.00	587.49	0.0	0.18	0.0	68.44	145.00
3800.000	435.00	587.53	0.0	0.04	0.0	50.00	455.00
3800.000	435.00	587.53	0.0	0.04	0.0	50.00	455.00
3850.000	435.00	587.49	0.0	-0.04	0.0	17.00	100.00
3850.000	435.00	587.49	0.0	-0.04	0.0	17.00	100.00
3851.000	435.00	587.43	0.0	-0.01	0.0	17.00	5.00
3851.000	435.00	587.48	0.0	-0.01	0.0	17.00	5.00
3852.000	435.00	587.55	0.0	0.07	0.0	17.00	25.00
3852.000	435.00	587.55	0.0	0.07	0.0	17.00	25.00
3853.000	435.00	587.62	0.0	0.07	0.0	17.00	1.00
3853.000	435.00	587.62	0.0	0.07	0.0	17.00	1.00
3900.000	435.00	587.88	0.0	0.27	0.0	50.00	100.00
3900.000	435.00	587.88	0.0	0.27	0.0	50.00	100.00
4000.000	435.00	588.06	0.0	0.17	0.0	100.00	480.00
4000.000	435.00	588.06	0.0	0.17	0.0	100.00	480.00
5575.000	435.00	588.59	0.0	0.53	0.0	50.00	1470.00
5575.000	435.00	588.59	0.0	0.53	0.0	50.00	1470.00
5625.000	435.00	588.47	0.0	-0.12	0.0	12.00	100.00
5625.000	435.00	588.47	0.0	-0.12	0.0	12.00	100.00
5626.000	435.00	588.39	0.0	-0.08	0.0	12.00	5.00
5626.000	435.00	588.39	0.0	-0.08	0.0	12.00	5.00
5627.000	435.00	588.74	0.0	0.35	0.0	12.00	40.00
5627.000	435.00	588.74	0.0	0.35	0.0	12.00	40.00
5628.000	435.00	589.09	0.0	0.36	0.0	12.00	5.00
5628.000	435.00	589.09	0.0	0.36	0.0	12.00	5.00
5675.000	435.00	589.65	0.0	0.55	0.0	50.00	100.00
5675.000	435.00	589.65	0.0	0.55	0.0	50.00	100.00
6075.000	435.00	590.21	0.0	0.56	0.0	31.45	1170.00
6075.000	435.00	590.21	0.0	0.56	0.0	31.45	1170.00
6125.000	435.00	590.24	0.0	0.03	0.0	15.00	100.00
6125.000	435.00	590.24	0.0	0.03	0.0	15.00	100.00

SECND	Q	CASEL	DIFWSP	DIF.SX	DIFKWS	TOPWID	XLCH
6126.000	435.00	590.22	0.0	-0.02	0.0	15.00	5.00
6126.000	435.00	590.22	0.0	-0.02	0.0	15.00	5.00
6127.000	435.00	590.32	0.0	0.10	0.0	15.00	50.00
6127.000	435.00	590.32	0.0	0.10	0.0	15.00	50.00
6128.000	435.00	590.39	0.0	0.07	0.0	15.00	5.00
6128.000	435.00	590.39	0.0	0.07	0.0	15.00	5.00
6175.000	435.00	590.70	0.0	0.31	0.0	45.00	100.00
6175.000	435.00	590.70	0.0	0.31	0.0	45.00	100.00
7050.000	435.00	591.22	0.0	0.52	0.0	47.59	795.00
7050.000	435.00	591.22	0.0	0.52	0.0	47.59	795.00
8125.000	435.00	593.39	0.0	2.17	0.0	75.00	1030.00
8125.000	435.00	593.39	0.0	2.17	0.0	75.00	1030.00
8175.000	435.00	593.53	0.0	0.14	0.0	89.40	100.00
8175.000	435.00	593.53	0.0	0.14	0.0	89.40	100.00
8176.000	435.00	595.20	0.0	1.67	0.0	75.00	44.00
8176.000	435.00	595.20	0.0	1.67	0.0	75.00	44.00
8225.000	375.00	595.23	0.0	0.03	0.0	75.00	100.00
8225.000	375.00	595.23	0.0	0.03	0.0	75.00	100.00
9880.000	375.00	595.50	0.0	0.27	0.0	200.00	1500.00
9880.000	375.00	595.50	0.0	0.27	0.0	200.00	1500.00
9930.000	375.00	595.52	0.0	0.02	0.0	100.00	100.00
9930.000	375.00	595.52	0.0	0.02	0.0	100.00	100.00
9931.000	375.00	595.47	0.0	-0.05	0.0	100.00	5.00
9931.000	375.00	595.47	0.0	-0.05	0.0	100.00	5.00
9932.000	375.00	595.59	0.0	0.12	0.0	100.00	45.00
9932.000	375.00	595.59	0.0	0.12	0.0	100.00	45.00
9933.000	375.00	595.65	0.0	0.06	0.0	100.00	5.00
9933.000	375.00	595.65	0.0	0.06	0.0	100.00	5.00
9980.000	375.00	595.69	0.0	0.04	0.0	200.00	100.00
9980.000	375.00	595.69	0.0	0.04	0.0	200.00	100.00
10800.000	375.00	595.80	0.0	0.11	0.0	120.00	660.00
10800.000	375.00	595.80	0.0	0.11	0.0	120.00	660.00
10850.000	375.00	595.80	0.0	0.0	0.0	33.00	100.00
10850.000	375.00	595.80	0.0	0.0	0.0	33.00	100.00
10851.000	375.00	595.80	0.0	0.00	0.0	33.00	1.00
10851.000	375.00	595.80	0.0	0.00	0.0	33.00	1.00
10852.000	375.00	595.81	0.0	0.01	0.0	33.00	12.00
10852.000	375.00	595.81	0.0	0.01	0.0	33.00	12.00

SECND	Q	CASEL	DIFWSP	DIFWSX	DIFCWS	TOPWIO	XLCH
10853.000	375.00	595.81	0.0	0.00	0.0	33.00	1.00
10853.000	375.00	595.81	0.0	0.00	0.0	33.00	1.00
10900.000	375.00	595.86	0.0	0.05	0.0	50.00	100.00
10900.000	375.00	595.86	0.0	0.05	0.0	50.00	100.00
11150.000	375.00	595.96	0.0	0.10	0.0	140.00	195.00
11150.000	375.00	595.96	0.0	0.10	0.0	140.00	195.00
12150.000	375.00	596.40	0.0	0.44	0.0	83.03	1060.00
12150.000	375.00	596.40	0.0	0.44	0.0	83.03	1060.00
13225.000	375.00	598.00	0.0	1.60	0.0	26.43	905.00
13225.000	375.00	598.00	0.0	1.60	0.0	26.43	905.00
13275.000	375.00	598.57	0.0	0.58	0.0	13.00	100.00
13275.000	375.00	598.57	0.0	0.58	0.0	13.00	100.00
13276.000	375.00	599.36	0.0	0.79	0.0	75.00	40.00
13276.000	375.00	599.36	0.0	0.79	0.0	75.00	40.00
13325.000	375.00	599.45	0.0	0.09	0.0	100.00	55.00
13325.000	375.00	599.45	0.0	0.09	0.0	100.00	55.00
13700.000	375.00	599.50	0.0	0.05	0.0	175.00	280.00
13700.000	375.00	599.50	0.0	0.05	0.0	175.00	280.00
13750.000	375.00	599.51	0.0	0.01	0.0	200.00	100.00
13750.000	375.00	599.51	0.0	0.01	0.0	200.00	100.00
13751.000	375.00	599.49	0.0	-0.02	0.0	200.00	1.00
13751.000	375.00	599.49	0.0	-0.02	0.0	200.00	1.00
13752.000	375.00	599.57	0.0	0.08	0.0	200.00	100.00
13752.000	375.00	599.57	0.0	0.08	0.0	200.00	100.00
13753.000	375.00	599.60	0.0	0.03	0.0	200.00	1.00
13753.000	375.00	599.60	0.0	0.03	0.0	200.00	1.00
13800.000	375.00	599.61	0.0	0.01	0.0	200.00	100.00
13800.000	375.00	599.61	0.0	0.01	0.0	200.00	100.00
14850.000	375.00	599.83	0.0	0.22	0.0	200.00	1005.00
14850.000	375.00	599.83	0.0	0.22	0.0	200.00	1005.00
15800.000	375.00	600.26	0.0	0.42	0.0	41.40	810.00
15800.000	375.00	600.26	0.0	0.42	0.0	41.40	810.00
15850.000	375.00	600.59	0.0	0.33	0.0	9.00	100.00
15850.000	375.00	600.59	0.0	0.33	0.0	9.00	100.00
15851.000	375.00	601.85	0.0	1.26	0.0	9.00	60.00
15851.000	375.00	601.85	0.0	1.26	0.0	9.00	60.00
15900.000	375.00	602.36	0.0	0.51	0.0	50.00	100.00
15900.000	375.00	602.36	0.0	0.51	0.0	50.00	100.00

SECND	Q	CWSEL	DIFMSP	DIFMSX	DIFKWS	TOPWID	XLCH
17030.000	375.00	602.82	0.0	0.45	0.0	225.00	1140.00
17030.000	375.00	602.82	0.0	0.45	0.0	225.00	1140.00
18100.000	375.00	603.19	0.0	0.37	0.0	53.21	365.00
18100.000	375.00	603.19	0.0	0.37	0.0	53.21	365.00
18150.000	375.00	603.15	0.0	-0.04	0.0	9.00	95.00
18150.000	375.00	603.15	0.0	-0.04	0.0	9.00	95.00
18151.000	375.00	602.75	0.0	-0.39	0.0	9.00	5.00
18151.000	375.00	602.75	0.0	-0.39	0.0	9.00	5.00
18152.000	375.00	603.86	0.0	1.11	0.0	9.00	55.00
18152.000	375.00	603.86	0.0	1.11	0.0	9.00	55.00
18153.000	375.00	605.28	0.0	1.42	0.0	9.00	5.00
18153.000	375.00	605.28	0.0	1.42	0.0	9.00	5.00
18210.000	375.00	605.61	0.0	0.33	0.0	50.00	45.00
18210.000	375.00	605.61	0.0	0.33	0.0	50.00	45.00
18700.000	375.00	605.65	0.0	0.03	0.0	33.00	370.00
18700.000	375.00	605.65	0.0	0.03	0.0	33.00	370.00
18750.000	375.00	605.46	0.0	-0.19	0.0	7.40	60.00
18750.000	375.00	605.46	0.0	-0.19	0.0	7.40	60.00
18751.000	375.00	606.75	0.0	1.29	0.0	7.40	68.00
18751.000	375.00	606.75	0.0	1.29	0.0	7.40	68.00
18800.000	280.00	607.20	0.0	0.45	0.0	50.00	100.00
18800.000	280.00	607.20	0.0	0.45	0.0	50.00	100.00
19950.000	280.00	607.23	0.0	0.03	0.0	155.00	1005.00
19950.000	280.00	607.23	0.0	0.03	0.0	155.00	1005.00

SUMMARY OF ERRORS

FLOODWAY DATA, KING DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
300.000	42.	247.	2.9	584.0	584.0	0.0
301.000	42.	165.	4.4	583.9	583.9	0.0
302.000	42.	165.	4.4	583.9	583.9	0.0
303.000	42.	251.	2.9	584.1	584.1	0.0
400.000	105.	539.	1.3	584.2	584.2	0.0
1120.000	49.	238.	3.0	584.3	584.3	0.0
1200.000	42.	189.	3.3	584.3	584.3	0.0
1201.000	42.	147.	4.9	584.2	584.2	0.0
1202.000	42.	147.	4.9	584.2	584.2	0.0
1203.000	42.	193.	3.7	584.4	584.4	0.0
1300.000	45.	233.	3.1	584.5	584.5	0.0
2100.000	38.	164.	4.4	585.0	585.0	0.0
2800.000	34.	236.	3.5	585.7	585.7	0.0
2926.000	20.	154.	4.7	585.7	585.7	0.0
2927.000	20.	170.	4.2	586.5	586.5	0.0
3319.000	21.	156.	4.6	586.9	586.9	0.0
3320.000	21.	147.	4.9	586.8	586.8	0.0
3321.000	21.	147.	4.9	586.9	586.9	0.0
3322.000	21.	159.	4.5	587.0	587.0	0.0
3400.000	33.	219.	3.3	587.2	587.2	0.0
3600.000	38.	216.	3.3	587.3	587.3	0.0
3750.000	69.	304.	1.4	587.5	587.5	0.0
3800.000	50.	225.	1.9	587.5	587.5	0.0
3850.000	17.	107.	4.1	587.5	587.5	0.0
3851.000	17.	99.	4.4	587.5	587.5	0.0
3852.000	17.	99.	4.4	587.5	587.5	0.0
3853.000	17.	109.	4.0	587.6	587.6	0.0
3900.000	50.	227.	1.9	587.9	587.9	0.0
4000.000	100.	327.	1.3	588.1	588.1	0.0
5575.000	50.	178.	2.4	588.6	588.6	0.0
5625.000	12.	73.	6.0	588.5	588.5	0.0
5626.000	12.	63.	7.0	588.4	588.4	0.0
5627.000	12.	64.	6.8	588.7	588.7	0.0
5628.000	12.	80.	5.4	589.1	589.1	0.0
5675.000	50.	218.	2.0	589.6	589.6	0.0
6075.000	31.	168.	2.6	590.2	590.2	0.0
6125.000	15.	106.	4.1	590.2	590.2	0.0
6126.000	15.	97.	4.5	590.2	590.2	0.0
6127.000	15.	98.	4.4	590.3	590.3	0.0
6128.000	15.	108.	4.0	590.4	590.4	0.0
6175.000	45.	266.	1.6	590.7	590.7	0.0
7050.000	48.	177.	2.5	591.2	591.2	0.0
8125.000	75.	193.	2.3	593.4	593.4	0.0
8175.000	89.	231.	1.9	593.5	593.5	0.0
8176.000	75.	353.	1.2	595.2	595.2	0.0
8225.000	75.	423.	0.9	595.2	595.2	0.0
9880.000	200.	431.	0.9	595.5	595.5	0.0
9930.000	100.	252.	1.5	595.5	595.5	0.0
9931.000	100.	150.	2.5	595.5	595.5	0.0
9932.000	100.	162.	2.3	595.6	595.6	0.0

FLOODWAY DATA, KING DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
9933.000	100.	265.	1.4	595.6	595.6	0.0
9980.000	200.	394.	1.0	595.7	595.7	0.0
10800.000	120.	342.	1.1	595.3	595.3	0.0
10850.000	33.	137.	2.0	595.8	595.8	0.0
10851.000	33.	136.	2.0	595.8	595.8	0.0
10852.000	33.	137.	2.0	595.8	595.8	0.0
10853.000	33.	137.	2.0	595.8	595.8	0.0
10900.000	50.	193.	1.9	595.9	595.9	0.0
11150.000	140.	299.	1.3	596.0	596.0	0.0
12150.000	83.	156.	2.3	596.4	596.4	0.0
13225.000	26.	114.	3.3	598.0	598.0	0.0
13275.000	13.	100.	3.7	598.6	598.6	0.0
13276.000	75.	184.	2.0	599.4	599.4	0.0
13325.000	100.	331.	1.1	599.5	599.5	0.0
13700.000	175.	537.	0.7	599.5	599.5	0.0
13750.000	200.	470.	0.8	599.5	599.5	0.0
13751.000	200.	255.	1.5	599.5	599.5	0.0
13752.000	200.	271.	1.4	599.6	599.6	0.0
13753.000	200.	437.	0.8	599.6	599.6	0.0
13800.000	200.	410.	0.9	599.6	599.6	0.0
14350.000	200.	402.	0.9	599.8	599.8	0.0
15800.000	41.	129.	2.9	600.3	600.3	0.0
15850.000	9.	69.	5.5	600.6	600.6	0.0
15851.000	9.	80.	4.7	601.9	601.9	0.0
15900.000	50.	263.	1.4	602.4	602.4	0.0
17030.000	225.	427.	0.9	602.8	602.8	0.0
18100.000	53.	246.	1.5	603.2	603.2	0.0
18150.000	9.	69.	5.4	603.1	603.1	0.0
18151.000	9.	40.	9.3	602.8	602.8	0.0
18152.000	9.	40.	9.3	603.9	603.9	0.0
18153.000	9.	39.	4.2	605.3	605.3	0.0
18210.000	50.	278.	1.3	605.6	605.6	0.0
18700.000	33.	240.	1.6	605.6	605.6	0.0
18750.000	7.	69.	5.4	605.5	605.5	0.0
18751.000	7.	79.	4.7	606.7	606.7	0.0
18800.000	50.	316.	0.9	607.2	607.2	0.0
19950.000	155.	571.	0.5	607.2	607.2	0.0

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP.

3) WATERCOURSE: KING DRAIN + LUXL DRAIN

4) DOCUMENT TYPE: REPORT

00BREAK00

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APR 21 1981
WATER MANAGEMENT

HYDRAULIC ANALYSIS

KING DRAIN AND LULL DRAIN

BRIDGEPORT TOWNSHIP

CITY OF SAGINAW, MICHIGAN

CAUTION →
This report submitted with orginal submittal ∴ there may be {assumptions or areas} that have been changed

Gove Associates Inc.
ARCHITECTS / ENGINEERS / PLANNERS / SURVEYORS
ENVIRONMENTAL SCIENTISTS

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001
(616) 385-0011

April 10, 1981

Mr. Daniel H. Morgan, P.E.
Technical Programs Unit
Water Management Division
Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

Re: FIS
King & Lull Drains - Hydraulics
Bridgeport Township, City of Saginaw
Saginaw County

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the King and Lull Drains in Bridgeport Township and the City of Saginaw, Saginaw County, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood.

2. Summary tables for 10-, 50-, 100-, and 500-year floods.

3. Topographic map and 100-year water surface profile.

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES INC.

Phone-Nan Wang

Phone-Nan Wang, Ph.D., P.E.
Senior Project Engineer

PNW/tk

Enclosure: as listed above

HYDRAULIC ANALYSIS

1. INTRODUCTION

The streams being studied in this report are the King Drain and the Lull Drain in Bridgeport Township and the City of Saginaw. King Drain is a tributary of the Saginaw River and the Lull Drain discharges to the King Drain. The reach between the mouth and the station 28+00 of the King Drain has been cleaned and grubbed recently. The whole Lull Drain within this study limits has been completely renovated including excavation, culvert replacement and channel relocation (Ref. 1).

The flows used in this study have been approved by the Michigan Department of Natural Resources and shown below:

	Peak Flows (cfs)			
Return Interval	10-year	50-year	100-year	500-year
King Drain, mouth	~~400~~ 480	~~555~~ 640	~~610~~ 720	~~740~~ 880
King Drain, Upstream of confluence with the Lull Drain	290	400	435	560
u/s Kansas Rd. (D.A. = 2.23 mi²)	185	255	280	350
Lull Drain	330	430	470	560
u/s Sheridan Rd	215	280	310	370

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100- and 500-year floods were computed through the HEC-2 computer program, developed by U.S. Army, Corps of Engineers (Ref. 2).

King Drain, upstream Sheridan Rd (DA 3.59 mi²)

10yr	50yr	100yr	500yr
250 - 1	340	375	460

2.1 Cross Sections

The cross sections of the King Drain were obtained from the field survey of the channel and bridge portions. The cross sections of the Lull Drain, however, were obtained from the Drainage Map prepared by the Spicer Engineering Company. Our field survey was conducted before the renovation and served for check only. The locations of the cross sections are shown in Table 1 and Table 2.

2.2 Roughness Coefficients

The reach between the mouth and the station 28+00 of the King Drain has been cleaned and grubbed recently and from station 28+00 to confluence with the Lull Drain has been excavated. The whole Lull Drain within this study limits has been completely renovated. Therefore, the roughness coefficients for King Drain are varied from a recently cleaned drain to a drain with weeds and brush without maintenance. The Lull Drain was regarded as a new excavated drain. The n factor used in the model is shown below:

	n factors	
	Flood Plain	Channel
King Drain	0.03 - 0.1	0.03 - 0.08
Lull Drain	0.04	0.027 - 0.037

2.3 Starting Elevations

The slope-area method was used in both drains to determine the starting elevation. The channel slopes were used as the energy slopes.

3. DISCUSSION

From the water surface profile and the topographic map of the Lull Drain, we know that upstream of the Sheridan Road the shallow flooding was developed. It is due to the small culvert and high road surface of the Sheridan Road crossing. As long as the weir flow developed, the discharge of the Lull Drain not only passes the Sheridan Road but also goes to the King Drain. Therefore, it is suggested that the model of the HEC-2 run only applies to the Sheridan Road and upstream of the Sheridan Road be regarded as shallow flooding.

Reference

1. Lull Drain - Drainage District Map, prepared by the Spicer Engineering Company, Saginaw, Michigan, July 1978. Revised June 1979, Constructed 1980.

2. HEC-2 Water Surface Profiles, Users Manual, Hydrological Engineering Center, Corps of Engineers, U. S. Army, August 1979.

TABLE 1

LOCATION OF CROSS SECTION (KING DRAIN)

SECTION	SECNO	LOCATION
A	300 301 302 303	Foot Bridge in Wickes Park, 315 feet from the mouth of King Drain Backwater of Saginaw River for 100-year: 593.86
B	400	80' U/S from Section 303
C	1120	720' U/S from B
D	1200 1201 1202 1203	Foot Bridge in Eastmost Wickes Park
E	1300	85' U/S from Section 1203
F	2100	800' U/S from E
G	2800	700' U/S from F, U/S to Lull Drain excavation
H	2926 2927	Culvert, west of East Street TR = 586.6, LC = 584.9
I	3319 3320 3321 3322	East Street Bridge, M-13, TR = 589.7, LC = 586.4
J	3400	65' U/S from Section 3322
K	3600	200' U/S from J dupe. of J. raised .2
L	3750	145' U/S from K, U/S of Lull Drain Excavated Drain, channels not maintained, weeds and brush uncut
M	3800	455' U/S from L
N	3850 3851 3852 3853	Banner Street Bridge, TR = 588.1, LC = 587.0

SECTION	SECNO	LOCATION
O	3900	100' U/S from Section 3853
P	4000	480' U/S from O
Q	5575	1470' U/S from P
R	5625 5626 5627 5628	Casey Road Bridge, TR = 590.5, LC = 588.8
S	5675	100' U/S from Section 5628
T	6075	1170' U/S from S
U	6125 6126 6127 6128	Washington Street Culvert, TR = 593.8, LC = 591.4
V	6175	100' U/S from Section 6128
W	7050	795' U/S from V
X	8125	1030' U/S from W
Y	8175 8176	Sheridan Road Culvert, TR = 594.7, LC = 591.5
Z	8225	100' U/S from Section 8176
AA	9880	1500' U/S from Z
AB	9930 9931 9932 9933	Farm Culvert, TR = 594.7, LC = 593.9
AC	9980	100' U/S from Section 9933
AD	10800	660' U/S from AC
AE	10850 10851 10852 10853	G.T.W. Railroad Bridge, TR = 600.4, LC = 596.4
AF	10900	100' U/S from Section 10853
AG	11150	195' U/S from AF Dupe of AF

SECTION	SECNO	LOCATION
AH	12150	1060' U/S from AG dupe of AF raised 16 ft 1300 ft d/s
AI	13225	905' U/S from AH
AJ	13275 13276	Williamson Road Culvert, TR = 599.2, LC = 596.8
AK	13325	55' U/S from Section 13276
AL	13700	280' U/S from AL
AM	13750 13751 13752 13753	Studer Road Culvert, TR = 598.7, LC = 596.9
AN	13800	100' U/S from Section 13753
AO	14850	1005' U/S from AN
AP	15800	810' U/S from AO
AQ	15850 15851	King Street Culvert, TR = 601.7, LC = 598.8
AR	15900	100' U/S from Section 15851
AS	17030	1140' U/S from AR
AT	18100	865' U/S from AS
AU	18150 18151 18152 18153	Kansas Street Culvert, TR = 604.1, LC = 601.0
AV	18210	45' U/S from Section 18153
AW	18700	370' U/S from AV
AX	18750 18751	Kansas Street Culvert, TR = 605.1, LC = 600.9
AY	18800	100' U/S from Section 18751
AZ	19950	1005' U/S from AY

TABLE 2

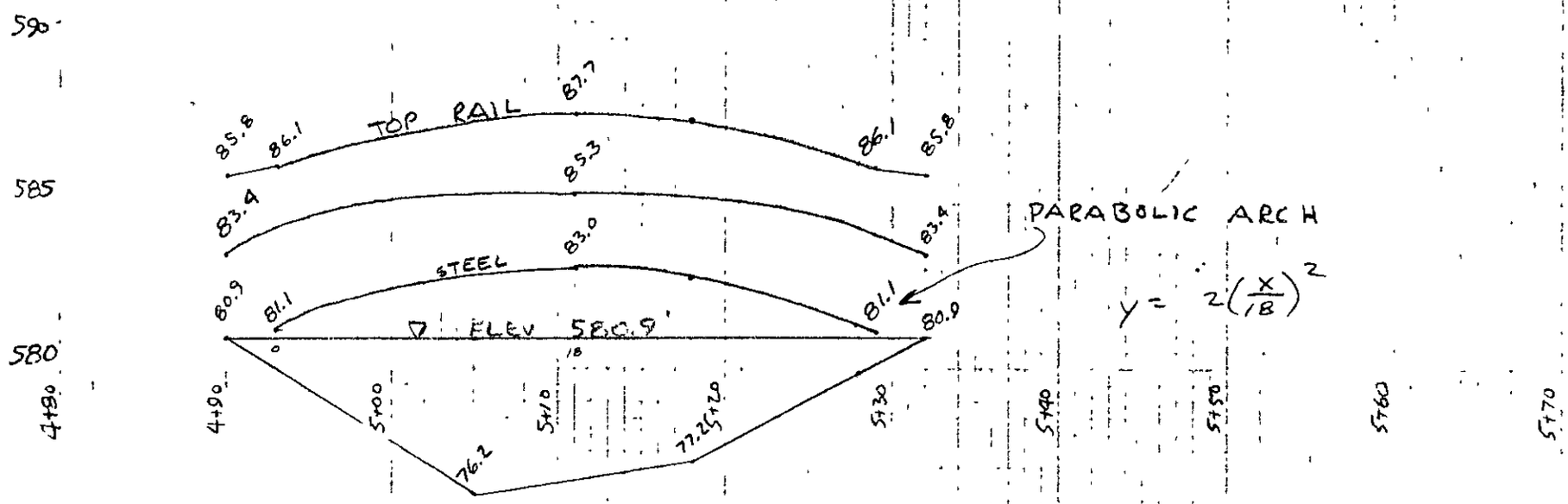
LOCATION OF CROSS SECTION (LULL DRAIN)

SECTION	SECNO	LOCATION
A	130	130' U/S from confluence with King Drain Backwater of Saginaw River 100-year: 593.86
B	234 235	Foot Bridge, TR = 586.5, LC = 585.6
C	350	114' U/S from Section 235
D	800	450' U/S from C
E	901 902	Wilkins Street Culvert, TR = 590.5, LC = 587.7
F	1020	100' U/S from Section 902
G	1870	850' U/S from F
H	1997 1998 1999 2000	Washington Street Culvert, TR = 595.8, LC = 593.2
I	2125	Begin Relocation - Section 21+08
J	3000	875' U/S from I
K	3800	800' U/S from J End Relocation Section 38+44
L	3900	100' U/S from K
M	4650	750' U/S from L Station 47+10 to 51+81 - Dig on South side of Drain
N	4750	100' U/S from M
O	5130	380' U/S from N
P	5320	100' U/S from O
Q	5828	598' U/S from P

SECTION	SECNO	LOCATION
R	5958 5959 5960 5961	Sheridan Road Culvert, TR = 596.6, LC = 594.9
S	6100	112' U/S from Section 5961
T	6965	865' U/S from S
U	7081 7082 7083 7084	Private Drive Culvert, TR = 596.3, LC = 594.7
V	7200	100' U/S from U
W	8140	925' U/S from V
X	8269 8270 8271 8272	Driveway Culvert, TR = 598.3, LC = 595.6
Y	8541 8542	Williamson Road Culvert, TR = 598.8, LC = 595.3
Z	8675	105' U/S from Section 8542
AA	9030	355' U/S from Z
AB	9150 9151	G.T.W. Railroad Culvert, TR = 600.7, LC = 595.4
AC	9275	105' U/S from Section 9151
AD	9335	60' U/S from AC
AE	10200	865' U/S from AD

BRIDGE DATA

BRIDGEPORT KING DRAIN STA 3+00 WESTERNMOST FOOT BRIDGE IN WICKES PARK



$$\text{AREA} = 2\left[\int_0^{18} 2\left(\frac{x}{18}\right)^2 dx\right] + \frac{1}{2}15(4.7) + 13\,\frac{1}{2}[4.7 + 3.7] + \frac{1}{2}\,3.7(14)$$

$$= 2\left[\frac{2}{18^2}\cdot\frac{x^3}{3}\Big|_0^{18}\right] + 115.75$$

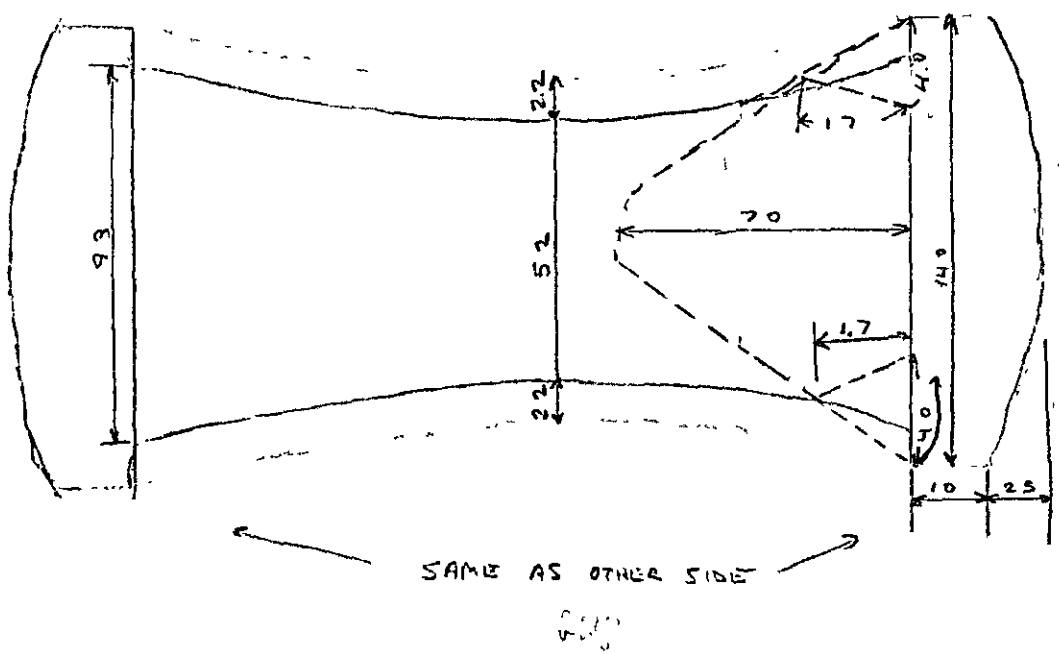
$$= 2\,\frac{2}{18^2}\,1944 + 115.75$$

$$= 139.75 \quad FT^2$$

Community: BRIDGEPORT	Structure: WICKES PARK FOOT BRIDGE	Type: WOOD PLANK CONSTRUCTION	Station: 3+00

Downstream

North



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

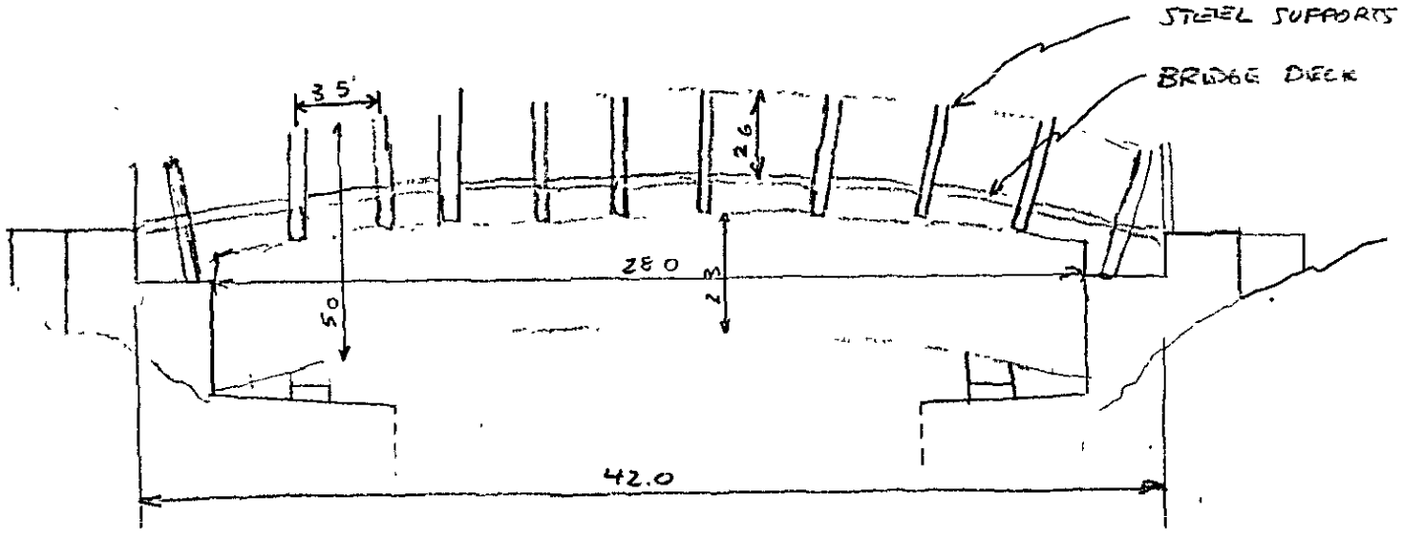
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 5/9/79

Sheet 2 of 2

Community: BRIDGEPORT	Structure: WICKES PARK FOOT BRIDGE	Type: WOOD PLANK CONSTRUCTION	Station: 3+00 & 8+00 SAME SIZE & DESIGN BRIDGE



PROFILE SKETCH
(Looking Downstream)

Length: 42.0	Width: 9.6 – 14.0 FT	Skew: –	Water Elevation: 580.9 - STA 3+00
No. of Piers:	Width of Piers: –	Shape of Piers: –	581.0 - STA 8+00

Notes:

ALL WOOD CONSTRUCTION

Gove Associates Inc.
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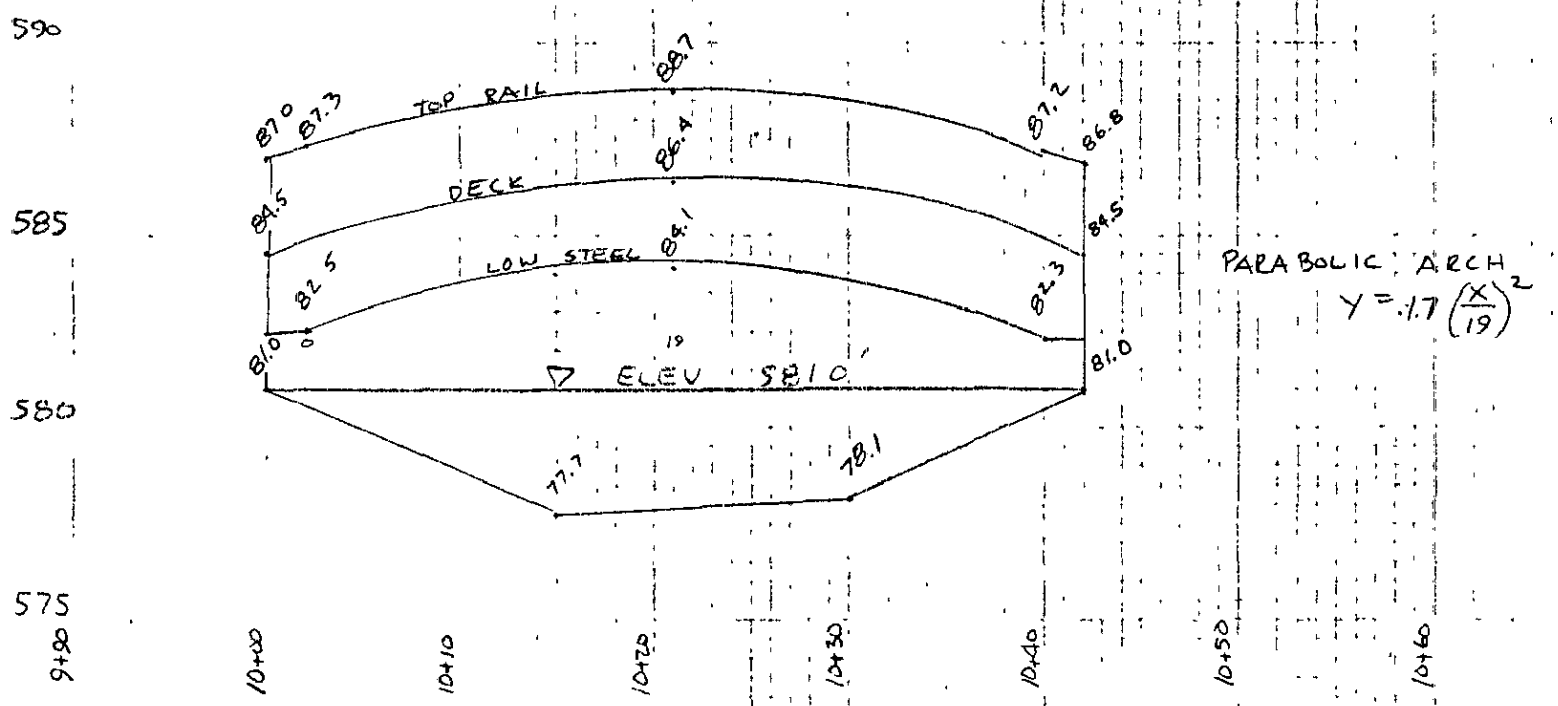
LANSING, MICHIGAN 48933
(517) 485-0555

By: JC

Date: 5/9/79

BRIDGEPORT KING DRAIN STA 8+00 EASTMOST WICKES PARK FOOTBRIDGE



PARABOLIC ARCH

$$Y = 1.7\left(\frac{X}{19}\right)^2$$

$$\text{AREA} = 2\left[\int_0^{19} 1.7\left(\frac{x}{19}\right)^2 dx\right] + 1.4(42) + \frac{1}{2}15(3.3) + 15\frac{1}{2}[3.3 + 2.9] + \frac{1}{2}(2.9)(12)$$

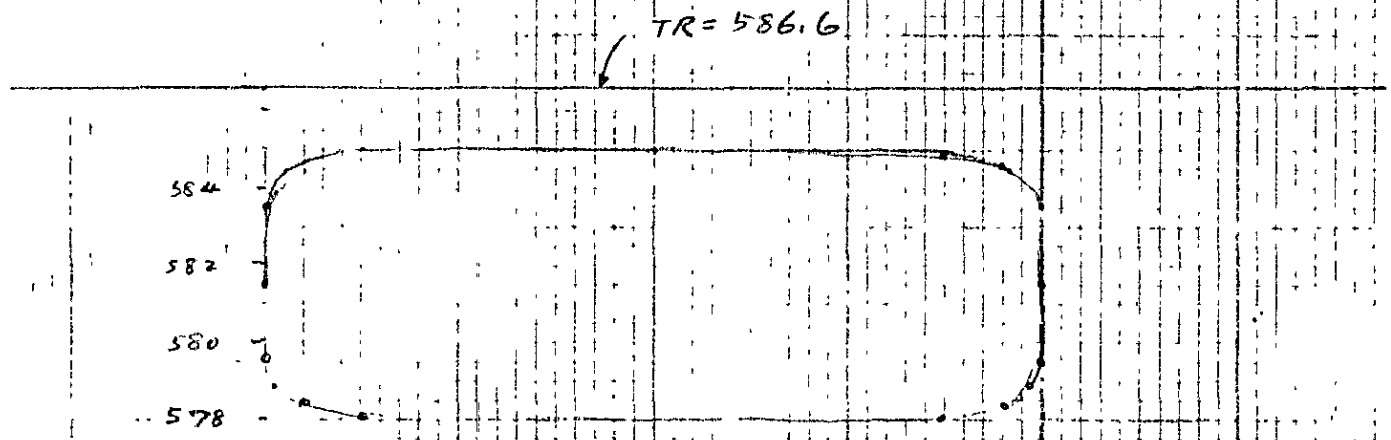
$$= 2\left[\frac{1.7}{19^2}\cdot\frac{x^3}{3}\Big|_0^{19}\right] + 147.45$$

$$= 2\left[\frac{1.7}{\cancel{19^2}}\ \frac{19^{\cancel{3}}}{3}\right] + 147.45$$

$$= 168.98 \text{ FT}^2$$

Station 20+50 Culvert West of East St. (New) 111080

6.9 x 20' Aluminum Box Culvert x 25



583.5	584.2	584.6	584.9	584.9	584.6	584.2	583.5
490	490.3	491	492.5	507.5	509	509.7	510
579.5	578.8	578.4	577.9	577.9	578.4	578.8	579.5

A = 136.

project no. 8556

$R = \frac{136}{54} = 2.52$ $R^{1.33} = 3.42$

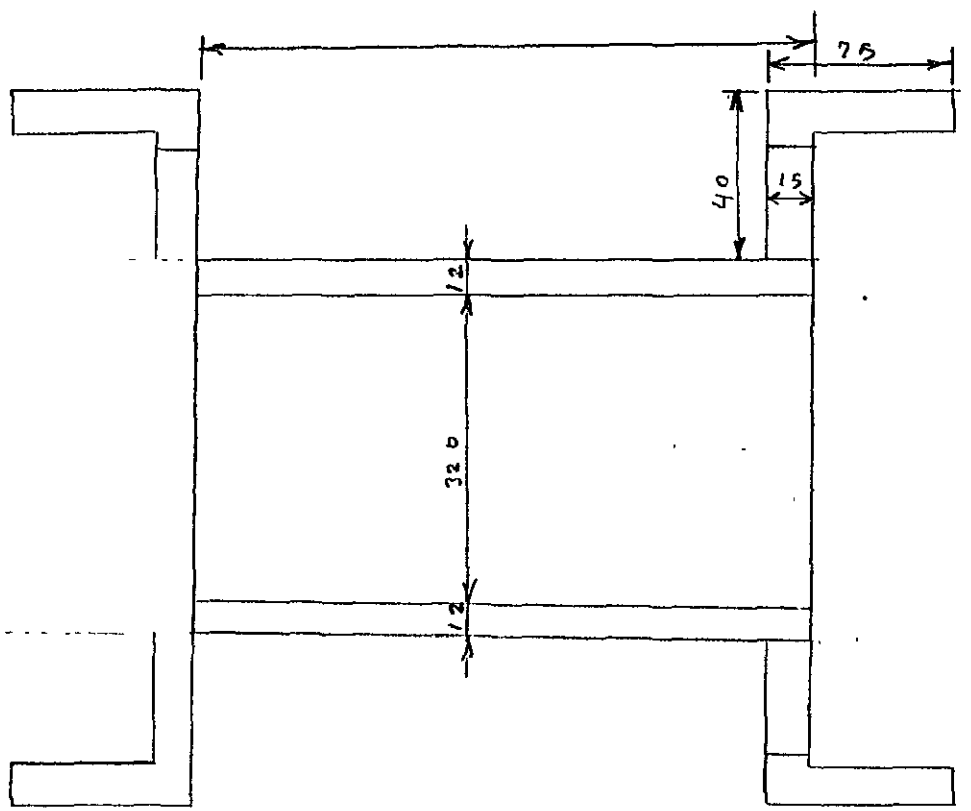
$\frac{29.1 \times 0.025^2 \times 25}{3.42} = 0.13$

XKOR = 1.63

Community: BRIDGEPORT	Structure: EAST ST. BRIDGE	Type: CONC BOX CULVERT	Station: 28+50

Downstream

North



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

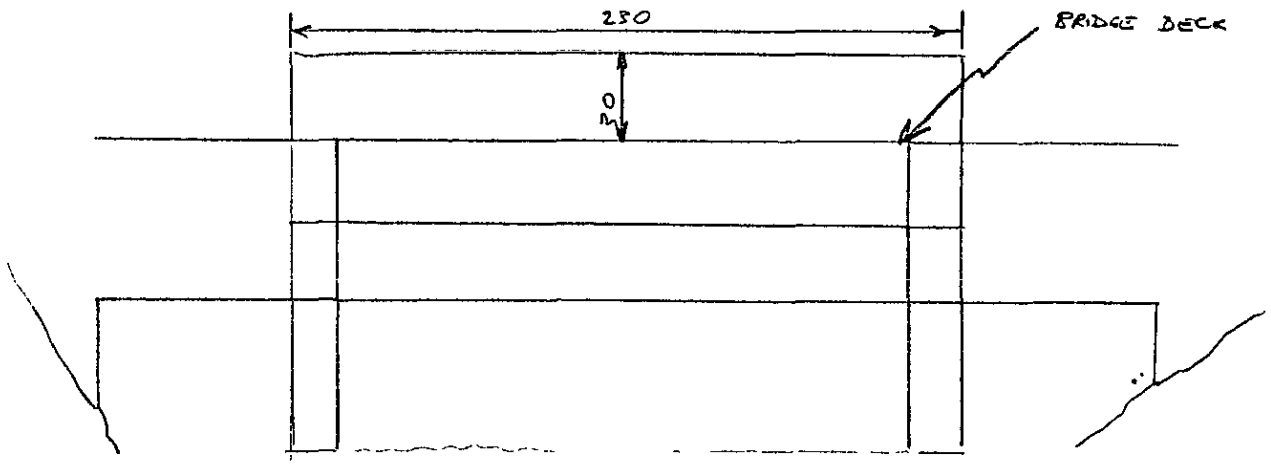
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 5/9/79

Sheet 2 of 2

Community: Springarbor	Structure: East St Bridge	Type: Conc. Box Culvert	Station: 28+50



PROFILE SKETCH
(Looking Downstream)

Length: 230	Width: 34 4	Skew:	Water Elevation: 579 4
No. of Piers:	Width of Piers:	Shape of Piers:	

Notes:

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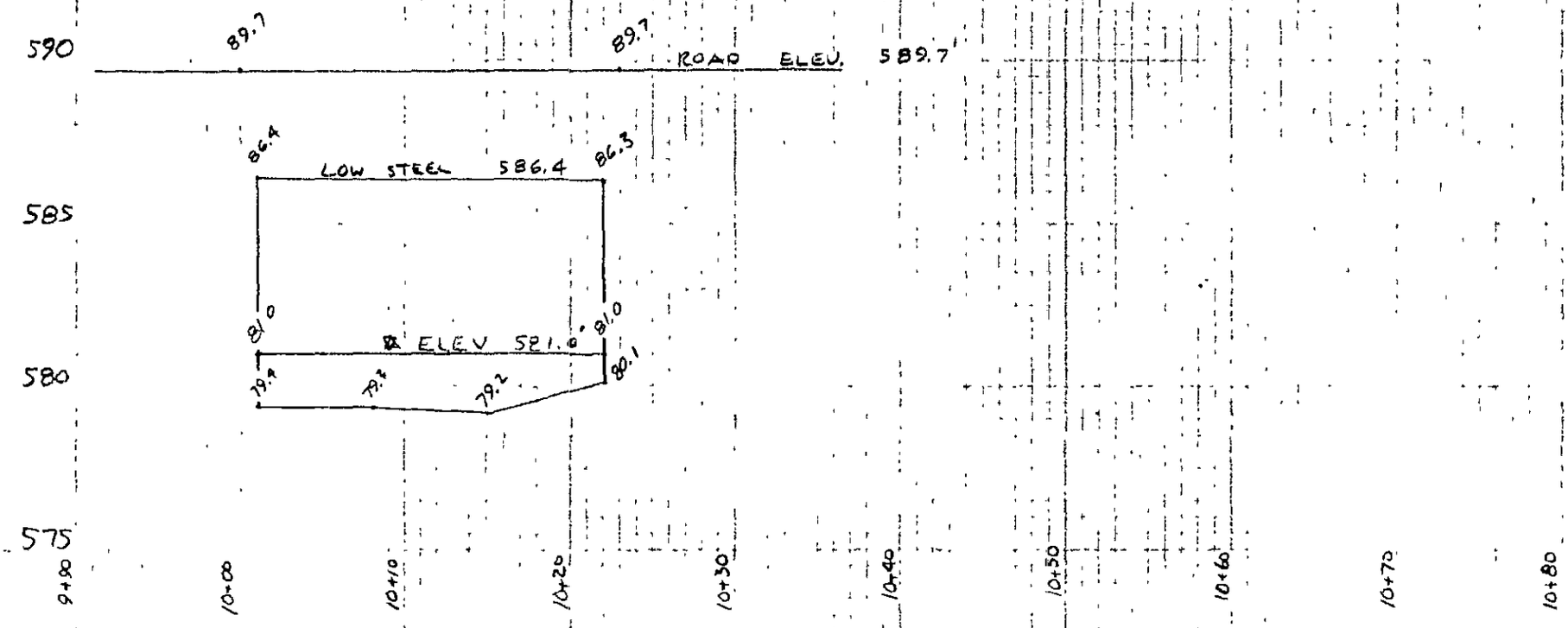
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: S.S.C.

Date: 5/9/79

BRIDGEPORT KING DRAIN STA 28+50 EAST ST BRIDGE (HWY M-13)



$$\text{AREA} = 7\tfrac{1}{2}[7.0 + 7.1] + 7\tfrac{1}{2}[7.1 + 7.2] + 7\tfrac{1}{2}[7.2 + 6.2]$$

$$= 146.30 \text{ FT}^2$$

$$R = \frac{146.3}{58} = 2.52 \qquad R^{4/3} = 3.42$$

$$K_f = \frac{29.1 \times 0.02^2 \times 42}{3.42} = 0.14$$

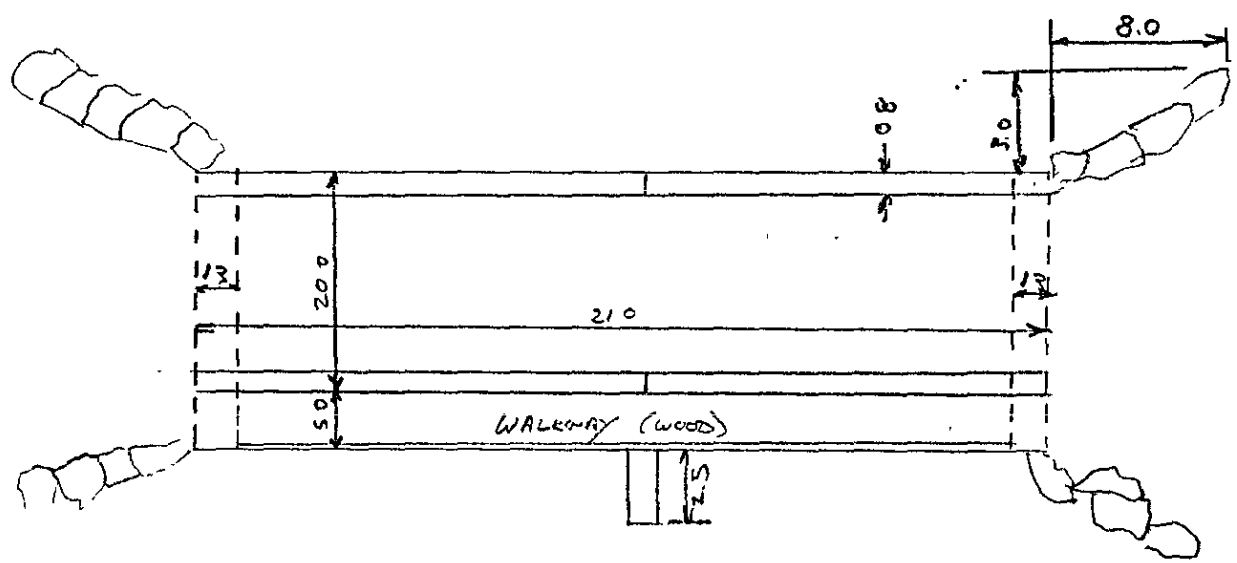
$$K_e = 0.5$$

$$\Sigma K_{OR} = 1.64$$

Community: BRIDGEPORT	Structure: BANNER STREET BRIDGE OVER KING ST DRAIN	Type: I-BEAM SUPPORT WOOD DECK WITH ASPHALT CAP	Station: 38+50

Downstream

North



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

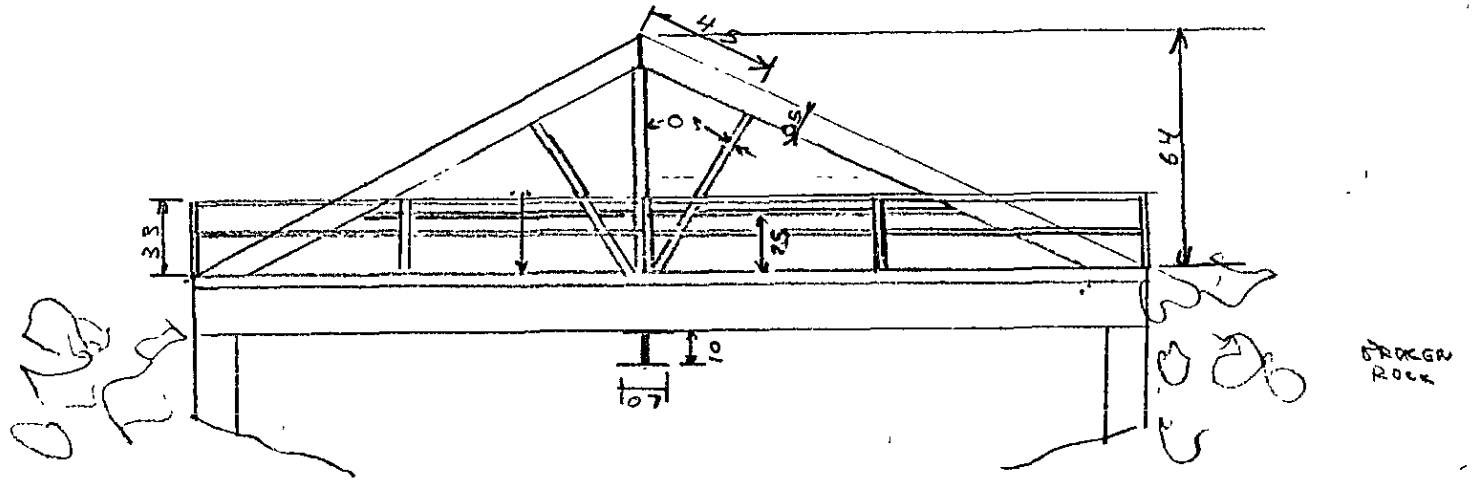
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: GSC

Date: 5/15/79

Sheet 2 of 2

Community: BRIDGEPORT	Structure: BARNER ST BRIDGE OVER KING ST DRAIN	Type: I-BEAM SUPPORT WOOD DECK W/ASPHALT CAP	Station: 38+50



PROFILE SKETCH
(Looking Downstream)

Length: 210 FT.	Width: 25.0 FT	Skew: –	Water Elevation: 581.40
No. of Piers: –	Width of Piers: –	Shape of Piers: –	

Notes:

Gove Associates Inc.
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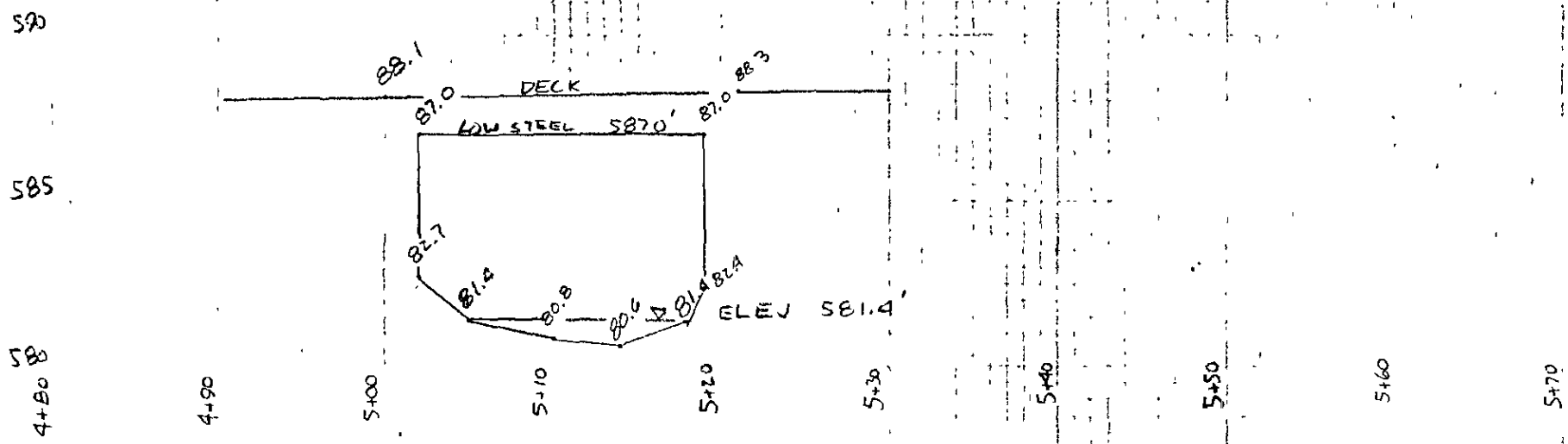
LANSING, MICHIGAN 48933
(517) 485-0555

By: J.S.C.

Date: 5/14/77

BRIDGEPORT KING DRAIN STA 38+50 BANNER ST. BRIDGE



$$\text{AREA} = 3\tfrac{1}{2}[4.3+5.6] + 5\tfrac{1}{2}[5.6+6.2] + 4\tfrac{1}{2}[6.2+6.4] + 4\tfrac{1}{2}[6.4+5.6] + 1\tfrac{1}{2}[5.6+4.6]$$

$$= 98.65 \text{ FT}^2$$

W.P. = 56. $n = 0.03$

$R^{4/3} = 2.12$

$K_e = 0.5$

$$K_p = \frac{29.1 \times 0.03^2 \times 25}{2.12} = 0.31$$

XHOR = 1.81

BRIDGEPORT KING DRAIN STA 56+25 CASEY RD CULVERT

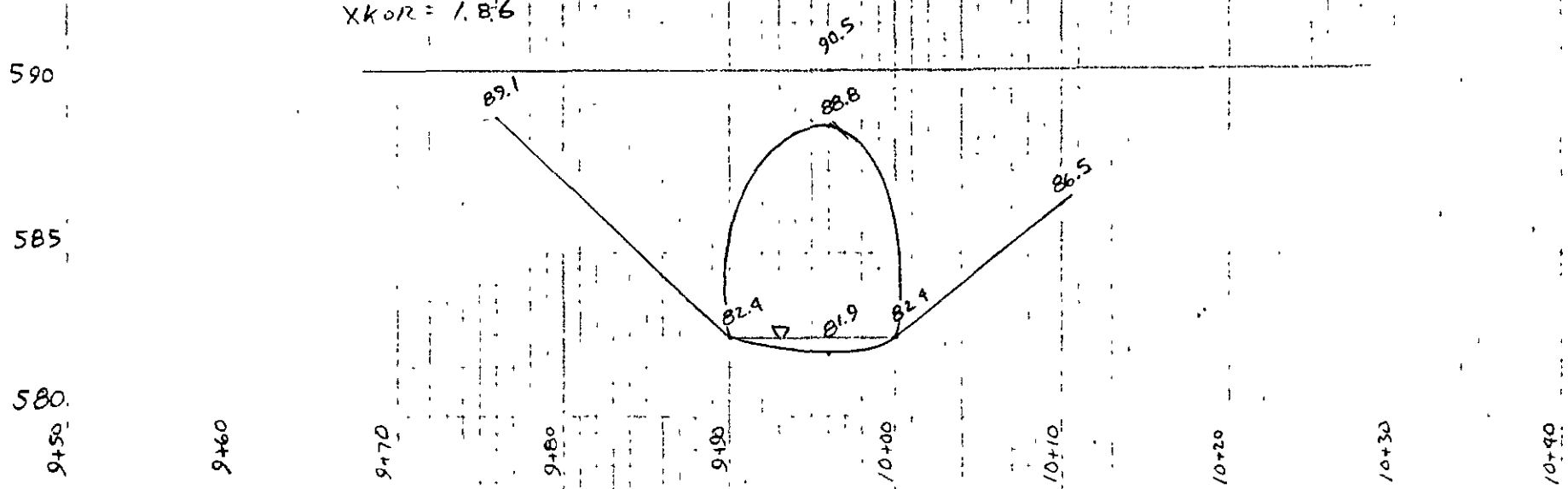
12 x 7 CORRUGATED STEEL PIPE ARCH
(11'-10, 7'-7)

AREA = 70 FT^2 *

$R = 2.23$ $R^{4/3} = 2.91$

$K_e = 0.5$ $K_f = \frac{29.1 \times 0.03^2 \times 40}{2.91} = 0.36$

XKOR = 1.86



* AISI HANDBOOK

KING - DRAIN - BRIDGEPORT

DNW
101879

Culvert - C.M.P 5625

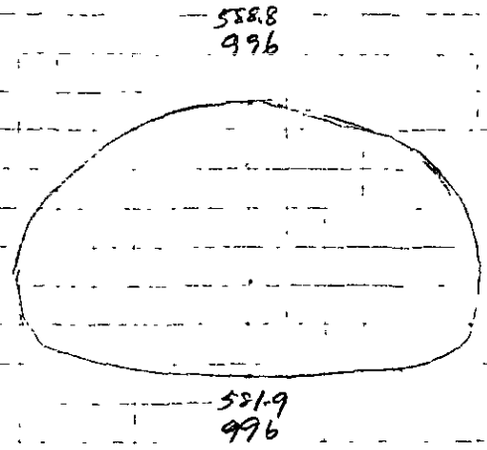
Channel width = 25' U/S
28' D/S

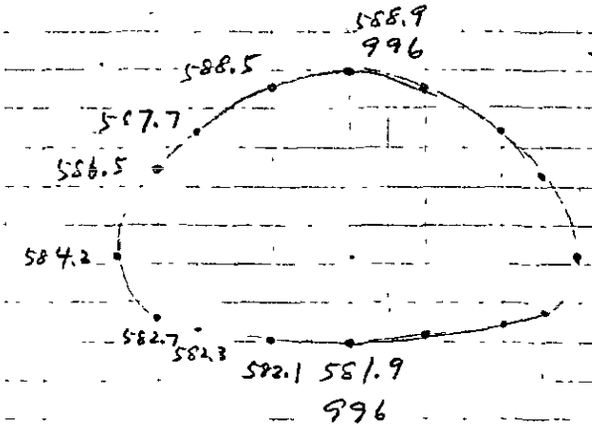
diameter of culvert

$\frac{28-12}{2} = \frac{16}{2} = 8$

$\frac{4}{32} = 3.0$

By graphical Method





56+25 ℄
CULVERT

584.2 586.5 587.7 588.5 588.9 588.5 587.7 586.5 584.2
990 991 992 994 996 998 1000 1001 1002
584.2 582.7 582.3 582.1 581.9 582.1 582.3 582.7 584.2

BRIDGEPORT KING DRAIN STA 61+25 WASHINGTON ST CULVERT

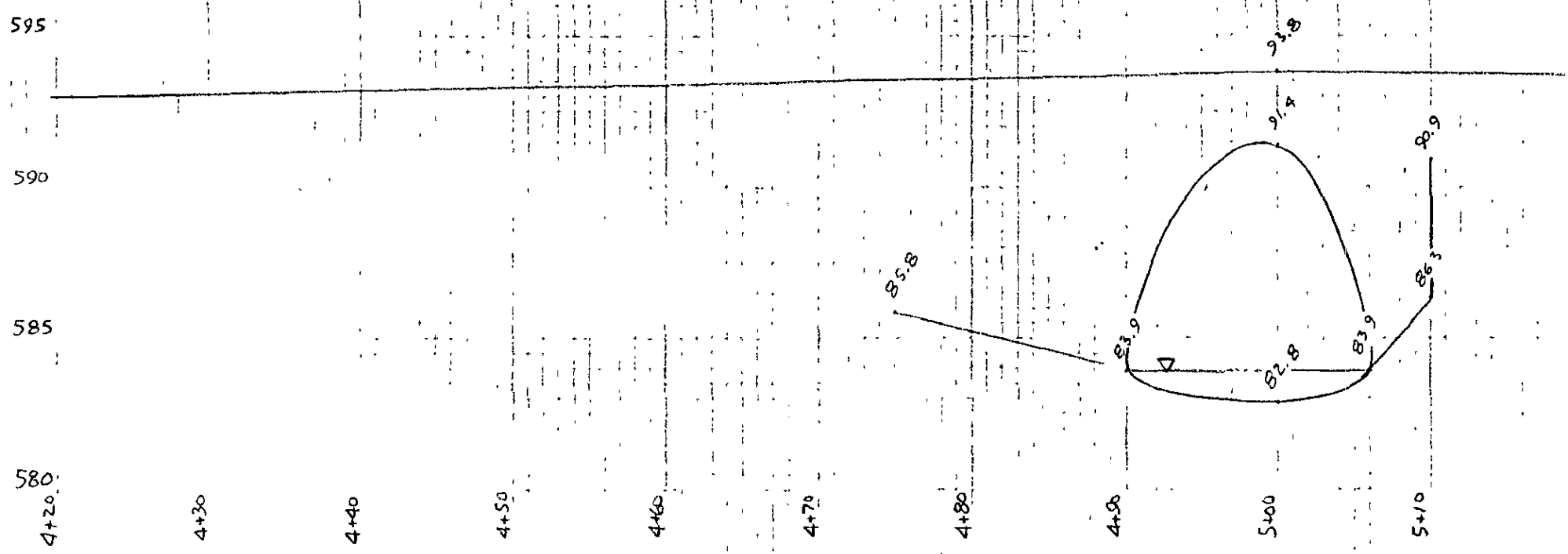
15 x 8.5 (14-10, 9-1) STRUCTURAL PLATE STEEL PIPE-ARCH

AREA = 103 FT^2 *

$R^{4/3} = 3.70$

$K_e = 0.5$ $K_f = \frac{29 \times 0.03^2 \times 50}{3.70} = 0.35$

$\times K_o R = 1.85$



* AISI HANDBOOK

King Drain 6125 101879

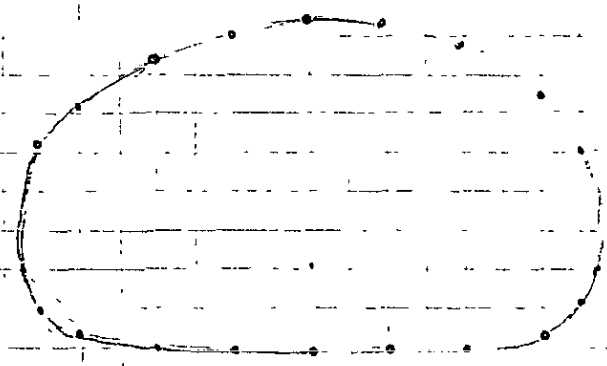
Washington St. Culvert

D = 15'

Channel width = 46' u/s
33' d/s

33 − 15 = 18/2 = 9
4
36

91.4
82.8
8.6



14 − 10 × 9 − 1

33
15
18 − 9 (4)
36

585 588.2 589.2 590.4 591 591.4 591 590.4 589.2 588.2 585
492.5 493 494 496 498 500 502 504 506 507 507.5
585 584 583.3 583 582.9 582.8 582.9 583 583.3 584 585

BRIDGEPORT KING DRAIN STA 81+75 SHERIDAN RD CULVERT

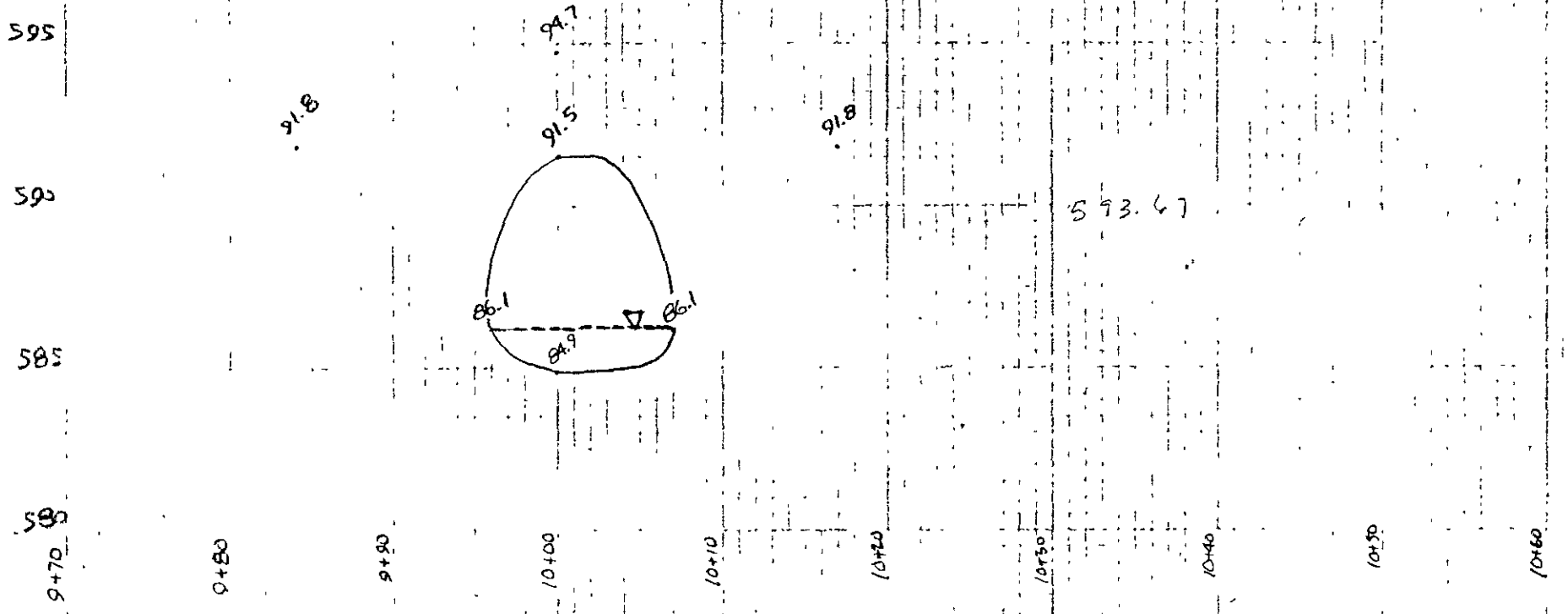
6-7 × 9-2 STRUCTURAL PLATE STEEL PIPE-ARCH

AREA = 57 FT² *

$K_e = 0.9$ $R^{4/3} = 2.40$ $n = 0.03$

$K_f = \frac{2.9 \times 0.03^2 \times 44}{2.40} = 0.48$

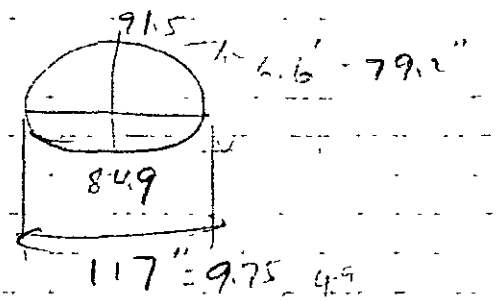
$\times K_o/R = 2.38$



* AISI HANDBOOK

81+75 – KING DRAIN ✓ 122279

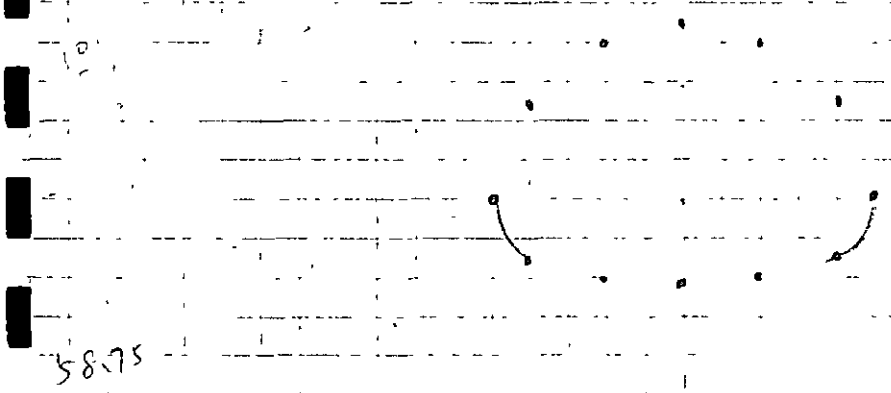
Length = 44'



Corrugated Steel Pipe – Arches

B = 2'

117 X 79



	587	589.4	591	591.5	591	589.5	587
4.9	995	996	998	1000	1002	1004	1005
160.5	587	585.5	585	584.9	585	585.5	587

BRIDGEPORT KING DRAIN STA. 99+30 FARM CULVERT

10-5 x 6-5
(10-3, 6-5)

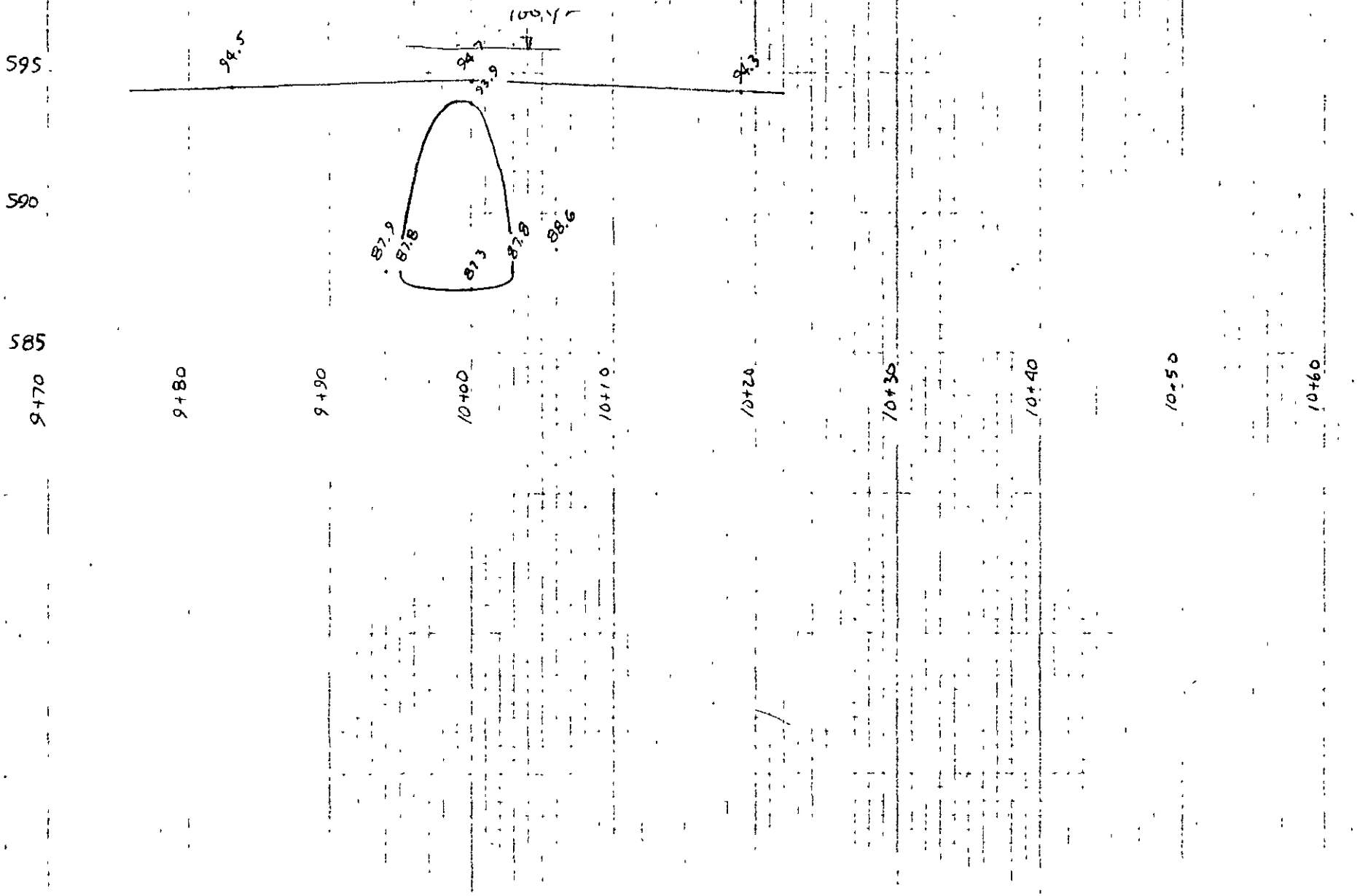
STRUCTURAL PLATE STEEL PIPE - ARCH

AREA = 5.4 FT^2 *

$R = 1.97$ $R^{4/3} = 2.46$

$K_e = 0.5$ $K_f = \frac{29.1 \times 0.103^2 \times 40}{2.46} = 0.43$

$\Sigma K_o R = 1.93$



9930 - KING DRAIN 102279

width = 10.5' = 126

Raise = 6.5' = 78

Length = 40'

128 x 83 Use

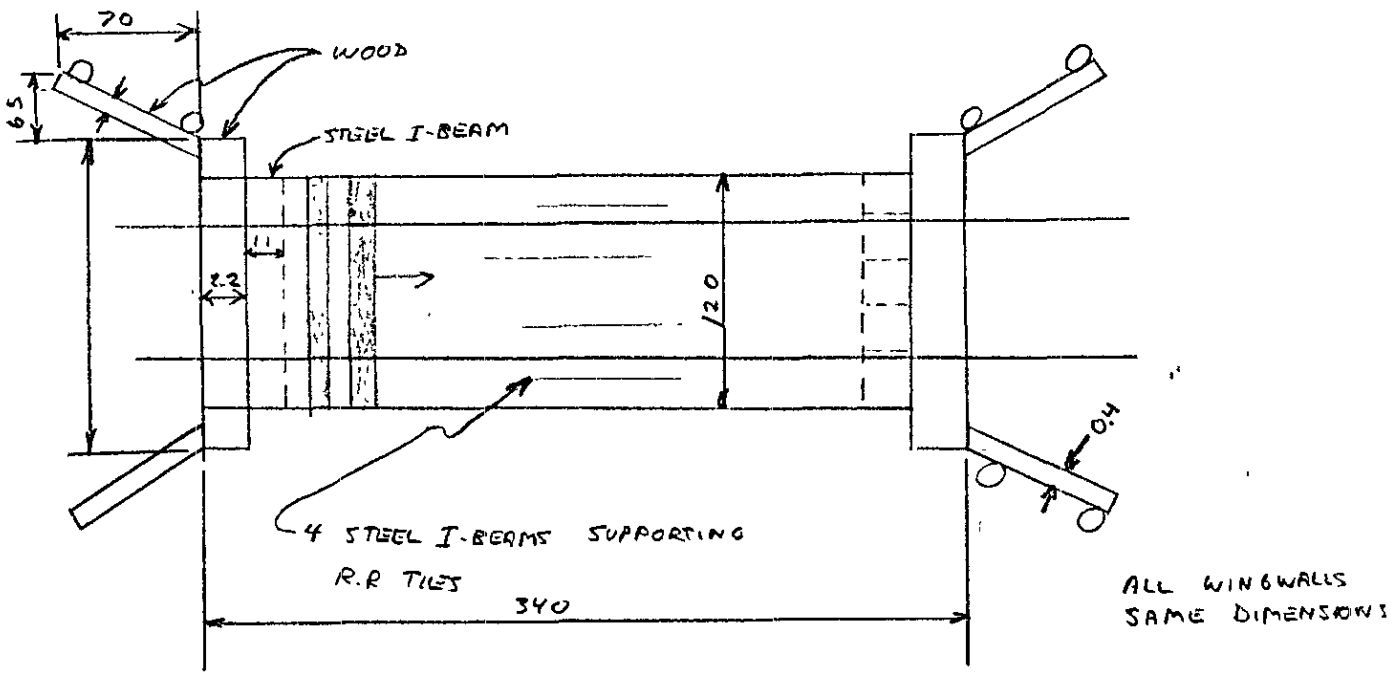
589	591.8	593.5	593.9	593.5	591.8	589
995	996	998	1000	1002	1004	1005
589	587.8	587.4	587.3	587.4	587.8	589

2000
100
1900

Community: BRIDGEPORT	Structure: G.T.W RR BRIDGE OVER KING ST DRAIN	Type: STEEL I-BEAM & WOOD CONSTRUCTION	Station: 108+50

Downstream

North



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

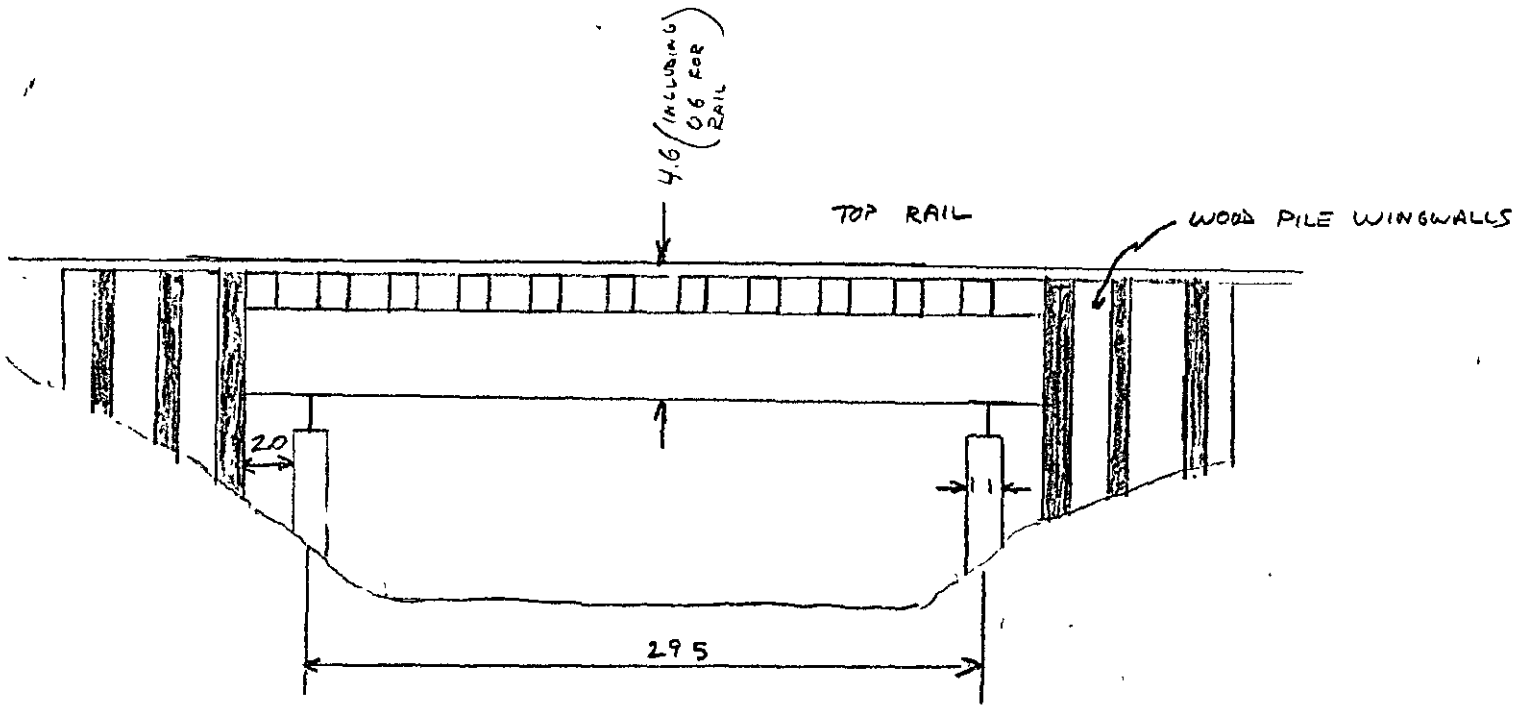
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 5/15/79

Sheet 2 of 2

Community: BRIDGEPORT	Structure: GTWRR BRIDGE OVER KING STREET DRAIN	Type: STEEL I-BEAM & WOOD CONSTRUCTION	Station: 108+50



PROFILE SKETCH
(Looking Downstream)

Length: 34.0	Width: 12.0	Skew: –	Water Elevation: 588.8
No. of Piers: –	Width of Piers: –	Shape of Piers: –	

Notes:

Gove Associates Inc.
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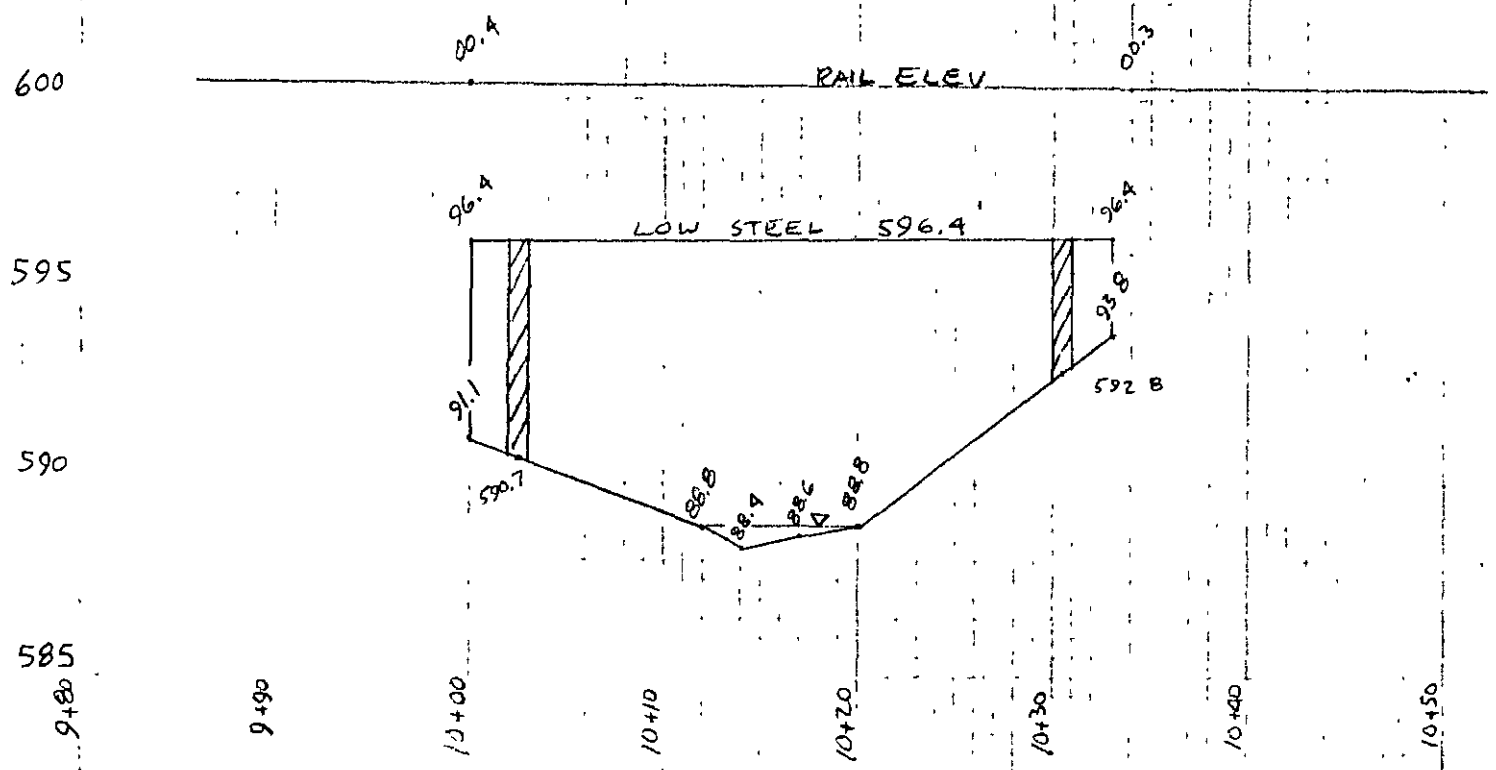
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 5/16/79

BRIDGEPORT KING DRAIN STA 108+50 GTW RR BRIDGE



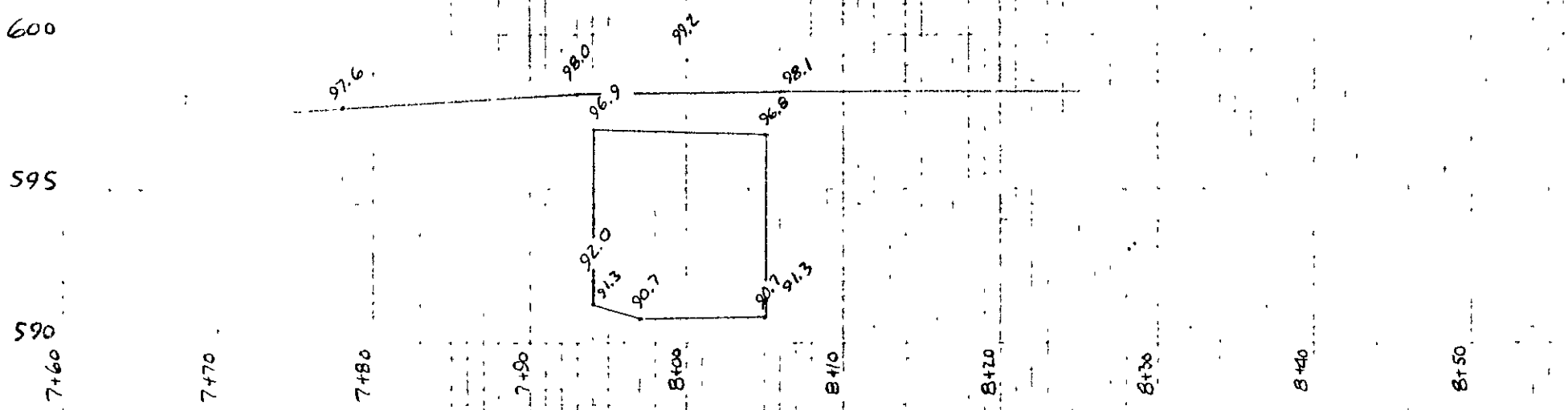
$$\text{AREA} = 12\cdot\tfrac{1}{2}[5.3+7.6] + 2\cdot\tfrac{1}{2}[7.6+8.0] + 3\cdot\tfrac{1}{2}[8.0+7.8] + 3\cdot\tfrac{1}{2}[7.8+7.6] + 13\cdot\tfrac{1}{2}[7.6+2.6] - 2(1.1)(5.7+3.6)$$

$$= 185.64 \text{ FT}^2 \qquad R = \frac{185.64}{122} = 1.52$$

$$\frac{>9.1 \times 0.03^2 \times 12}{1.52^{1.33}} = 0.18$$

$$\times K_0 R = 1.68$$

BRIDGE PORT KING DRAIN STA. 132+75 WILLIAMSTON RD. CULVERT



$$\text{AREA} = 3 \cdot \tfrac{1}{2}[5.6 + 6.2] + 8 \cdot \tfrac{1}{2}[6.2 + 6.2]$$

$$= 67.3 \ \text{FT}^2$$

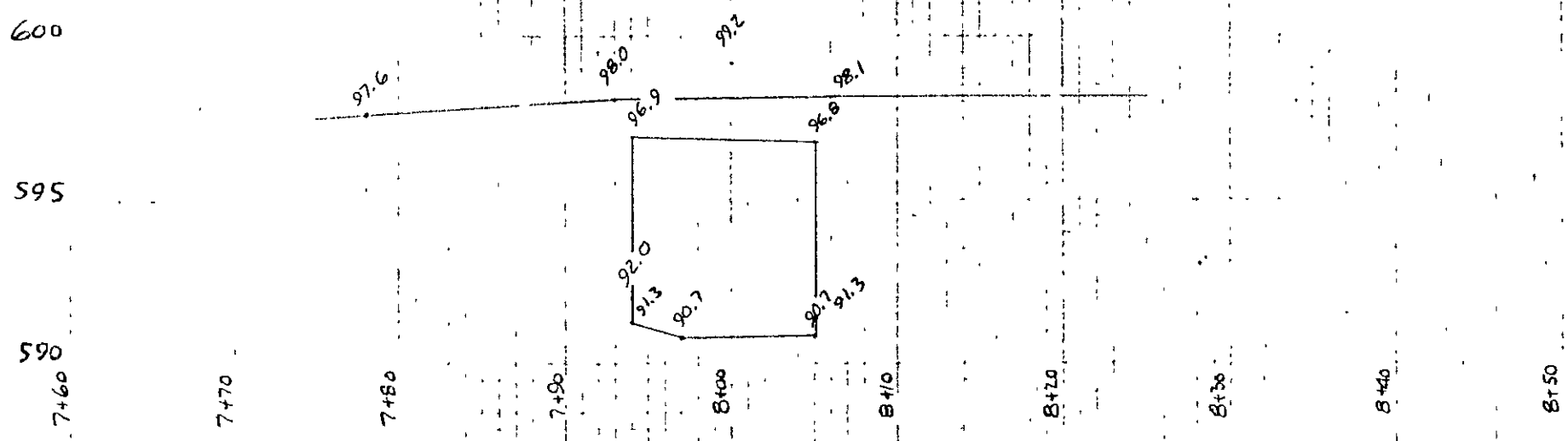
$$\text{W.P.} = 22 + 12 = 34$$

$$R^{4/3} = 2.48 \qquad n = 0.035$$

$$K_e = 0.5 \qquad K_f = \frac{29.1 \times 0.035^2 \times 40}{2.48} = 0.57$$

$$\text{XKOR} = 2.07$$

BRIDGE PORT KING DRAIN STA 132+75 WILLIAMSTON RD CULVERT



$$AREA = 3 \cdot \tfrac{1}{2}[5.6 + 6.2] + 8 \cdot \tfrac{1}{2}[6.2 + 6.2]$$

$$= 67.3 \ FT^2$$

$$W.P. = 22 + 12 = 34$$

$$R^{4/3} = 2.48 \qquad n = 0.035$$

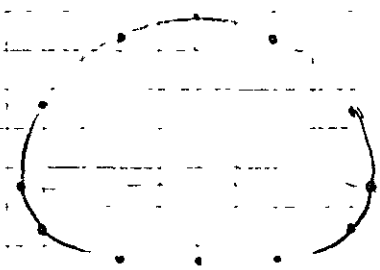
$$K_e = 0.5 \qquad K_f = \frac{29.1 \times 0.035^2 \times 40}{2.48} = 0.57$$

$$XKOR = 2.07$$

15850- KING DRAIN 102279

width = 9'
length = 60'
raise = 6.2

$9 \times 6.2 = 108 \times 74.4 \Rightarrow 112 \times 75$



594.5	596.7	598.4	598.8	598.4	596.7	594.5
995.5	996	998	1000	1002	1004	1004.5
594.5	593.4	592.7	592.6	592.7	593.4	594.5

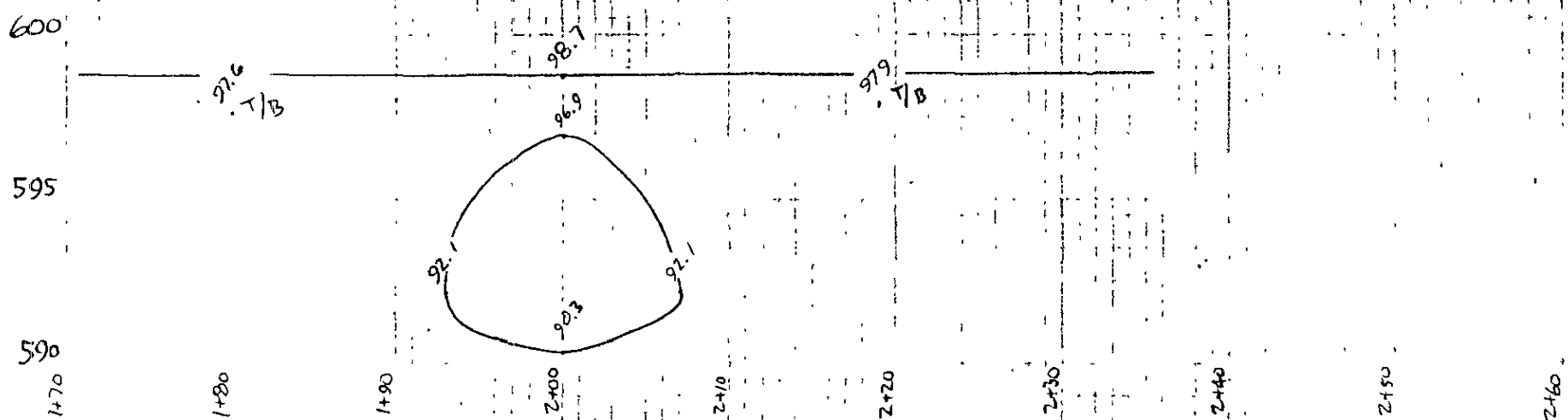
BRIDGEPORT KING DRAIN STA 137 + 50 STUDER ROAD CULVERT

9 × 6.5 CORRUGATED STEEL PIPE - ARCH
(9.6 × 6.5)
AREA = 48 FT² *

$R = 1.87$ $R^{4/3} = 2.30$ $n = 0.03$

$Ke = 0.5$ $Ke = \frac{29.1 \times 0.03^2 \times 100}{2.30} = 1.14$

XKOR = 2.64



* AISI HAND BOOK

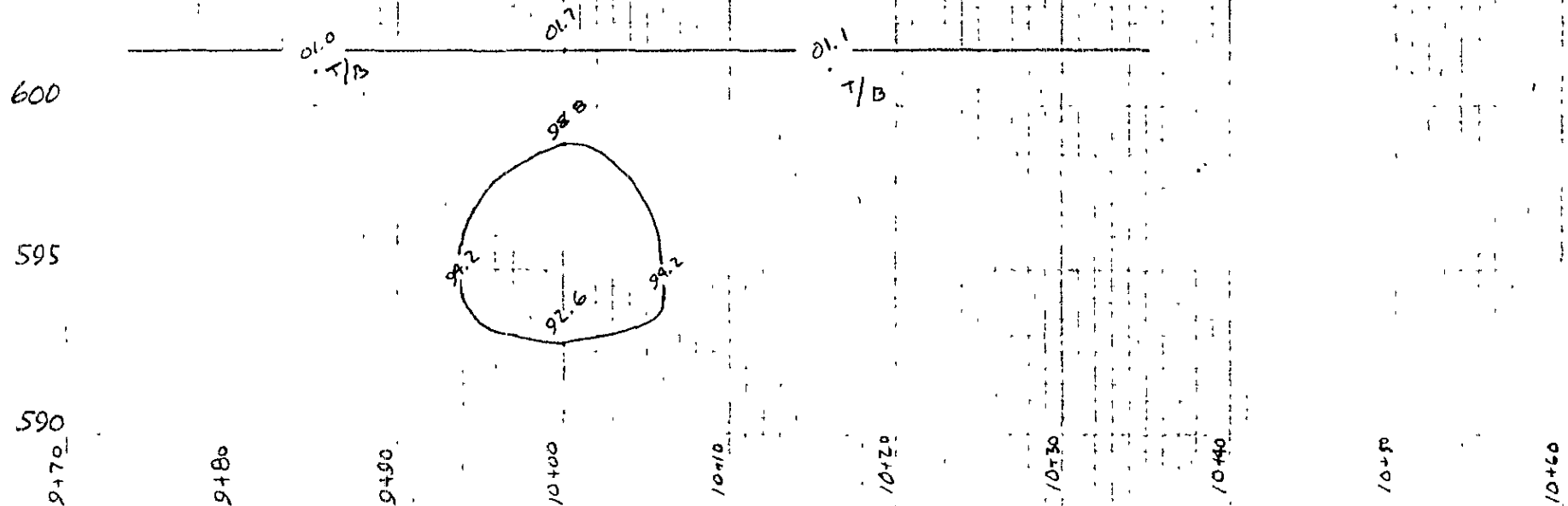
BRIDGE PORT KING DRAIN STA 158+50 KING ST. CULVERT

112 x 75 CORRUGATED STEEL PIPE - ARCH
9-4 x 6-3
AREA = 45 FT² *

$R = 1.81$ $R^{4/3} = 2.20$ $n = 0.032$

$K_e = 0.5$ $K_e = \frac{29.1 \times 0.032^2 \times 60}{2.20} = 0.8$

XKOR = 2.30



* AISI HANDBOOK

13750 KING DRAIN 102279

width = 9'
length = 100'

91/615
108/78 → 112X75

592.3	595	596.5	596.9	596.5	595	592.3
195.5	196	198	200	202	204	204.5
592.3	591	590.5	590.3	590.5	591	592.3

Manufactured 14800

	T/13					T/13	
0	185	194	200	205	210	220	290
600	97.6	93.0	92.4	92.5	93	98.8	600

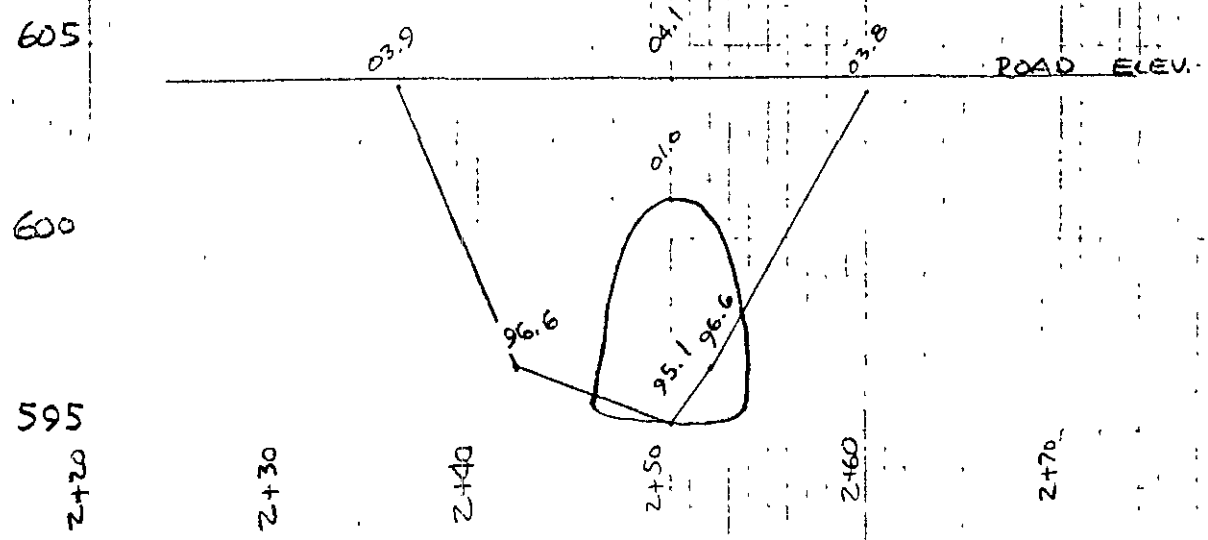
BRIDGEPORT KING DRAIN STA 181+50 KANSAS ST. CULVERT

103 × 71 CORRUGATED STEEL PIPE-ARCHES
8-7-5-11
AREA = 40 FT² *

$R = 1.71$ $R^{4/3} = 2.04$ $n = 0.03$

$K_e = 0.5$ $K_f = \frac{29.1 \times 0.03^2 \times 50}{2.04} = 0.64$

$\Sigma K_o R = 2.14$



* AISI HANDBOOK

18150 - KING DRAIN 102379

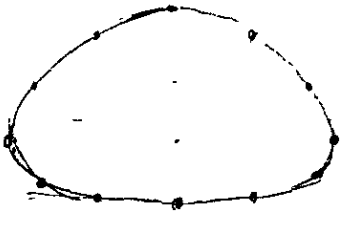
Width = 8.5 = 102
Raise = 6 = 72

① 8.5 X 6 = 102 X 72 = 103 X 71
②

500	597	598.5	600.6	601	600.6	598.5	597
90	245.5	246	248	250	252	254	254.5
37°	597	595.8	595.2	595.1	595.2	595.8	597

18750 - KING DRAIN

7.3 X 5.3

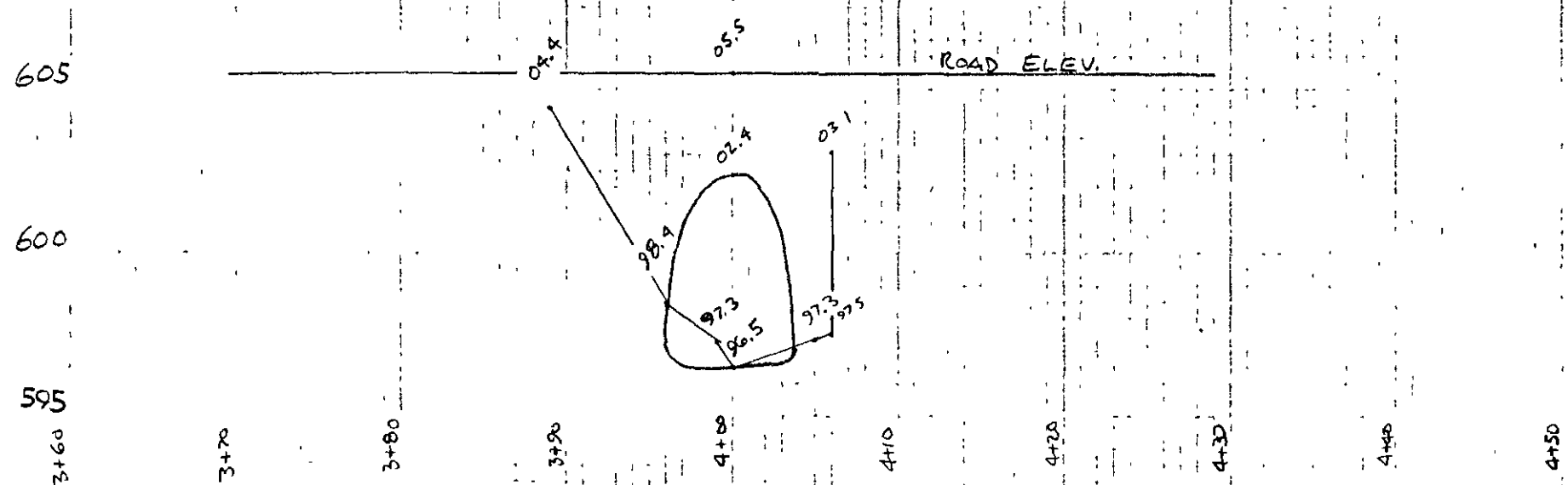


597.4	598.8	600.	600.9	600	598.8	597.4	
~~297.7~~ 298.3	298.5	~~297.8~~ 300	302	304	305.5	~~306.3~~	305.7
597.4	596.4	596	595.8	596	596.4	597.4	

BRIDGEPORT KING DRAIN STA 200+00 DIXIE HWY CULVERT

103 × 71 CORRUGATED STEEL PIPE-ARCH

AREA = 40 FT² *



* AISI HANDBOOK

BRIDGEPORT KING DRAIN STA 187+50 KANSAS ST. CULVERT

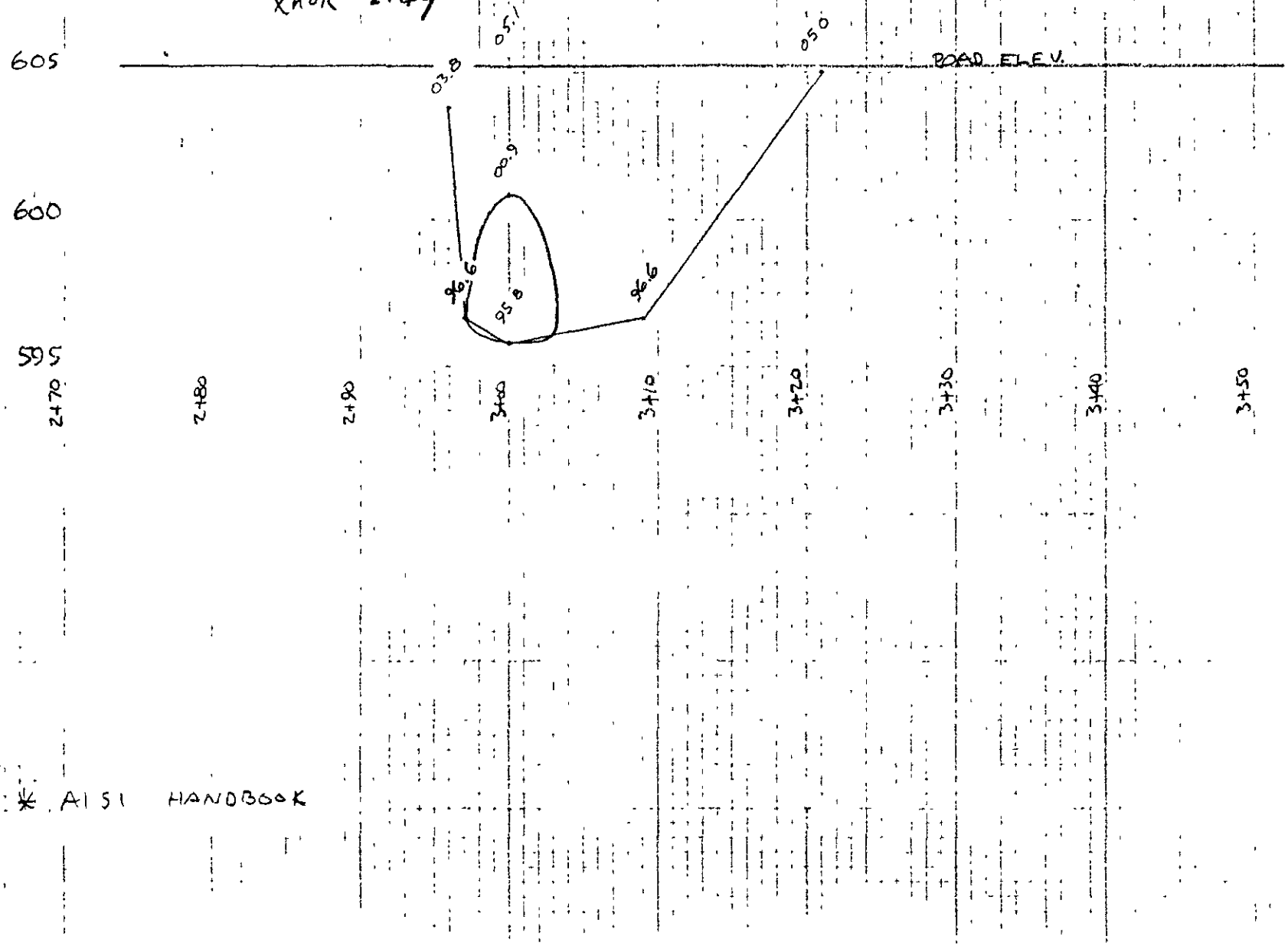
87x63 CORRUGATED STEEL PIPE-ARCH

7-3 x 5-3 AREA = 30 FT² *

R = 1.51 $R^{4/3}$ = 1.73 n = 0.03

Ke = 0.15 $k_f = \frac{27.1 \times 0.03^2 \times 70}{1.73} = 0.99$

XKOR = 2.49



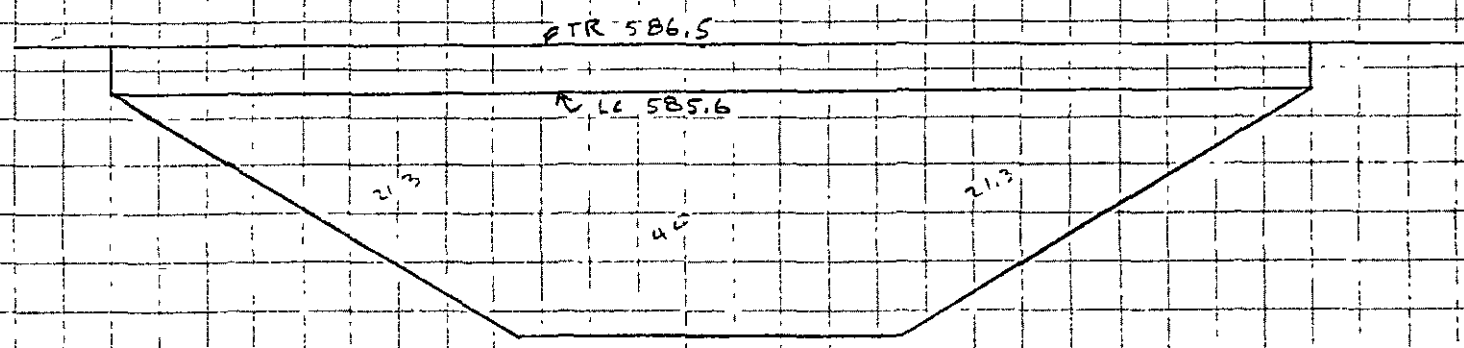
* AISI HANDBOOK

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

PROJ. No. 8558 | SH. NO
DESIGN JB | DATE 020381
CHECK | DATE

SUBJECT BRIDGE PORT TWP.
LULL DRAIN

~~2+34~~ FOOT BRIDGE 25' LONG X 4.5' WIDE
2+48



85.6	8.5	85.6	8.5	85.6	8.5	85.6
~~305~~ 102.5		~~393.5~~ 111		~~401.5~~ 119		~~410~~ 127.5
85.6		80.6		80.6		85.6

$$\frac{29.1 \times 0.025^2 \times 4.5}{1.57^{1.3}} = 0.04$$

XKOR = 1.54

A - 82.5 sq ft
Ke 0.5
n 0.025
WP 52.7'
R 1.57'

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

PROJ. NO. 8558 | SH. NO.
DESIGN JB | DATE 020321
CHECK | DATE

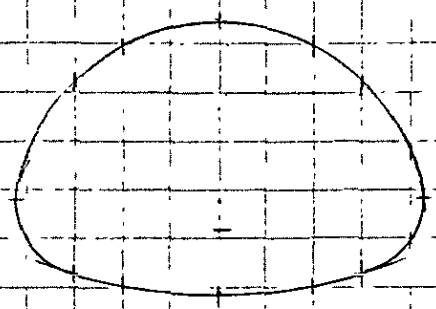
SUBJECT BRIDGEPORT TWP

LULL DRAIN

9+01 WILKINS ST. CULVERT

8'2" X 5'9" STRUCTURAL PLATE PIPE ARCH 31' LONG

ETRD 590.5



583.8 586.3 587.1 587.7 587.1 586.3 583.8

~~295.9~~ ~~297~~ ~~298~~ ~~300~~ ~~302~~ ~~303~~ ~~304.1~~
115.8 117 118 120 122 123 124.2

583.8 582.3 582.0 581.9 582.0 582.3 583.8

$$\frac{29.1 \times 0.0317^2 \times 31}{1.67^{1.33}} = 0.46$$

XHOR = 2.36

A 40 SQ FT
Ke .9
n .0317
R 1.67

GOVE ASSOCIATES

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

PROJ. NO. 8558 | SH. NO
DESIGN JB | DATE 020381
CHECK | DATE

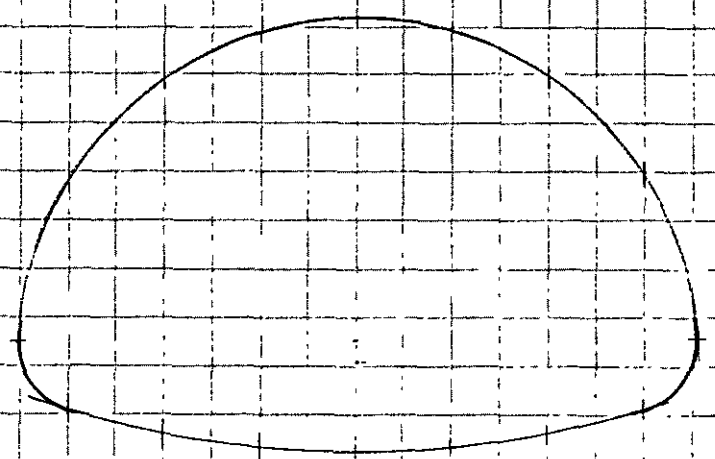
SUBJECT BRIDGEPORT TWP.

LULL DRAIN

19+97 WASHINGTON ST. CULVERT

14'3" x 8'11" x 43' STRUCTURAL PLATE PIPE ARCH

℄ TRD 595.8



86.6	88.9	90.9	92.9	593.2	92.9	90.9	88.9	86.6
113	114	116	118	120	122	124	126	127
~~293~~	~~294~~	~~296~~	~~298~~	~~300~~	~~302~~	~~304~~	~~306~~	~~307~~
86.6	85.1	84.7	84.4	584.3	84.4	84.7	85.1	86.6

A 97 sq ft.

Ke .5

n .0313

R 2.58'

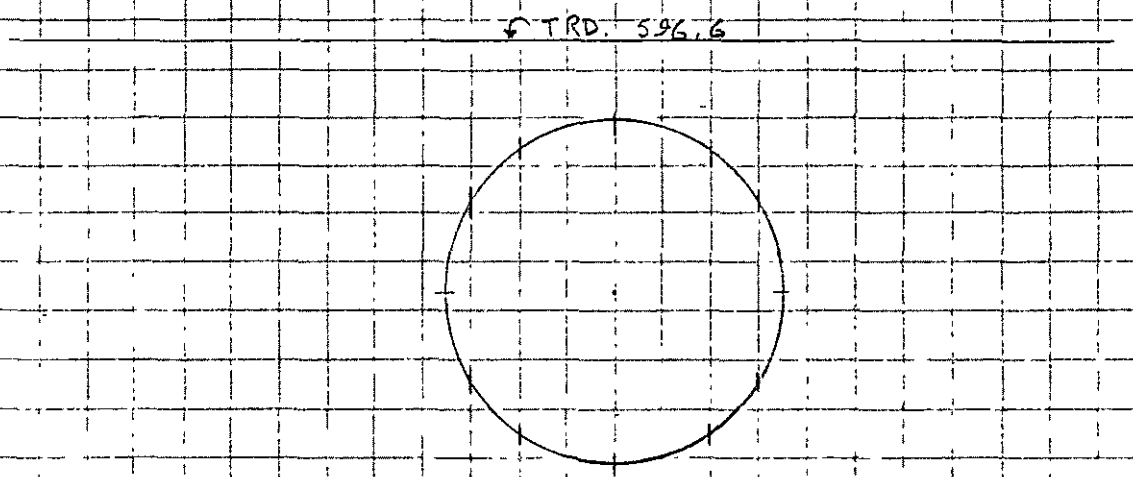
GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

PROJ. No 8558 SH. No.
DESIGN B DATE 020381
CHECK DATE

SUBJECT BRIDGEPORT TWP.
LULL DRAIN

59+58 SHERIDAN ROAD

7' Ø x 50' CORRUGATED METAL PIPE



591.4	93.2	94.4	94.9	94.4	93.2	591.4
111.5	112	113	11.5	117	11.8	118.5
~~496.5~~	~~497~~	~~498~~	~~500~~	~~502~~	~~503~~	~~503.5~~
591.4	89.6	88.6	587.9	88.6	89.6	591.4

$$\frac{29.1 \times 0.027^2 \times 50}{1.75^{1.33}} = 0.5$$

x KOR = 2.0

A 38.5 Sq Ft.
Ke .5
n .027
R 1.75'

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

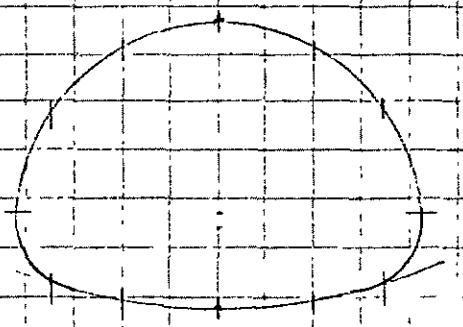
PROJ No. 8558 SH. No
DESIGN JB DATE 020381
CHECK DATE

SUBJECT BRIDGEPORT TWP.
LULL DRAIN

70+81 PRIVATE DRIVE

103" X 71" X 24' STRUCTURAL PLATE PIPE ARCH

T.RD. 596.3



90.7	92.8	94.1	594.7	94.1	92.8	90.7
115.7	116.5	118	120	122	123.5	124.3
~~1034.7~~	~~1036.5~~	~~1037~~	~~1039~~	~~1041~~	~~1042.5~~	~~1043.3~~
90.7	89.3	88.9	588.5	88.9	89.3	90.7

$$\frac{29.1 \times 0.027^2 \times 24}{1.69^{1.33}} = 0.25$$

XKOR = 2.15

A 40 sq ft.
Ke 0.9
n 0.027
R 1.69'

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

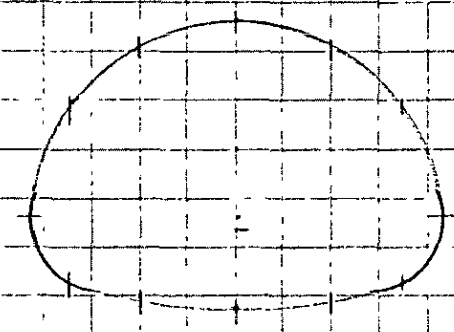
PROJ. NO 8558 SH. NO
DESIGN JB DATE 020381
CHECK DATE

SUBJECT BRIDGEPORT TWP.
LULL DRAIN

82+69 DRIVEWAY

103"x71" x 48' STRUCTURAL PLATE PIPE ARCH

598.3
T.RD. ~~597.2~~



91.6	93.9	95.1	5956	95.1	93.9	91.6
125.7	126.5	128	130	132	133	134.3
~~995.7~~	~~996.5~~	~~998~~	1000	1002	1002.5	~~1004.3~~
91.6	90.2	89.8	5897	89.8	90.2	91.6

$$\frac{29.1 \times 0.027^2 \times 48}{1.69^{1/3}} = 0.51$$

XKOR = 2.41

A 40 SQ FT
Ke 0.9
n 0.027
R 1.69'

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

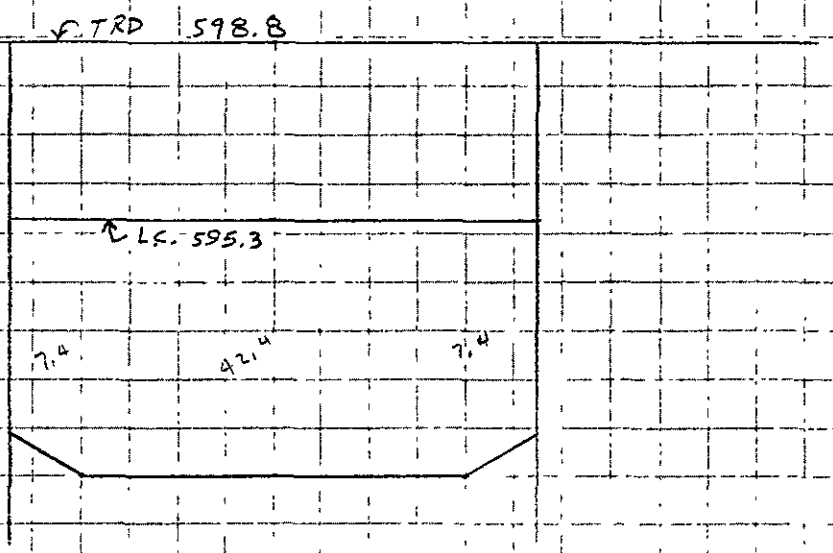
PROJ. NO. 8558 SH. NO.
DESIGN B DATE 020481
CHECK DATE

SUBJECT BRIDGEPORT TWP.
HULL DRAIN

85+41 WILLIAMSTON ROAD BRIDGE

CONCRETE CONSTRUCTION
SEE FIELD NOTES FOR SKEW

58' LONG



95.3	95.3	595.3	95.3	95.3
112.5	114	118	122	123.5
~~694.5~~	~~696~~	~~700~~	~~704~~	~~705.5~~
90.8	90.0	590.0	90.0	90.8

11
9
8
3.4
34

$\frac{291 \times 0.015^2 \times 58}{1.84^{1.33}} = 0.17$

XKOR = 1.67

A 57.1 Sq ft.
Ke 0.5
n 0.015
WP 31'
R 1.84'

GOVE ASSOCIATES
1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001

PROJ. NO. 8558 SH. NO
DESIGN JB DATE 020981
CHECK DATE

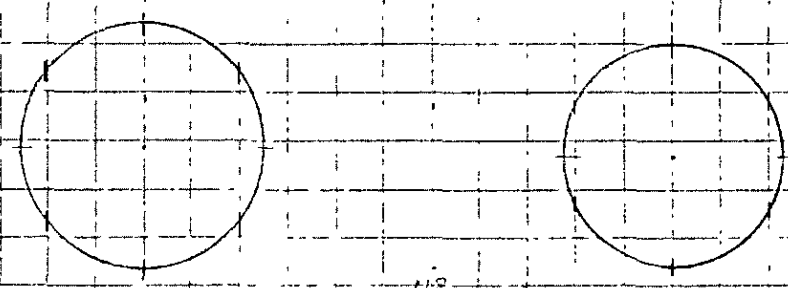
SUBJECT BRIDGEPORT TWP.
LULL DRAIN

1" = 4'

91+57 GRAND TRUNCK WESTERN RR.

1- 60" ϕ X 46' LONG CONCRETE PIPE
1- 54" ϕ X 44' LONG CONCRETE PIPE

TRD. 600.70



592.9	94.2	95.4	94.2	92.9	92.7	93.8	94.9	93.8	92.7
109.5	110	112	114	114.5	127.7	122	124	126	126.3
~~691.5~~	~~692~~	~~694~~	~~696~~	~~696.5~~	~~705.7~~	~~704~~	~~706~~	~~708~~	~~709.3~~
592.9	91.4	90.4	91.4	92.9	92.7	91.6	90.4	91.6	92.7

A - 19.69 $S_q f_T$ A - 1590 $S_q f_T$ TOT A - 35.5 $S_q f_T$
WP - 15.7' WP - 14.1' Ke - 0.5
HR - 1.250' HR - 1.125' n. 0.012

$\frac{291 \times 0.012^2 \times 46}{1.25^{1.33}} = 0.14$ $\frac{9.1 \times 0.012^2 \times 44}{1.125^{1.33}} = 0.16$

XKOR = 1.65

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: KING DRAIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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*************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*************************************************
```

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

KING DRAIN

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOP.ID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
300.000	582.60	0.50	582.70	42.00	0.0	480.00	0.0	42.00	490.00	490.00	532.00	532.00
300.000	583.50	1.50	583.62	42.00	0.0	640.00	0.0	42.00	490.00	490.00	532.00	532.00
300.000	584.00	2.00	584.13	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
300.000	584.80	2.00	584.96	42.00	0.0	880.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	582.57	0.0	582.71	42.00	0.0	480.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	583.42	0.0	583.65	42.00	0.0	640.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	583.89	0.0	584.18	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
301.000	584.60	0.0	585.04	42.00	0.0	880.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	582.58	0.0	582.71	42.00	0.0	480.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	583.43	0.0	583.67	42.00	0.0	640.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	583.90	0.0	584.20	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
302.000	584.63	0.0	585.07	42.00	0.0	880.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	582.62	0.0	582.72	42.00	0.0	480.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	583.56	0.0	583.53	42.00	0.0	640.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	584.09	0.0	584.22	42.00	0.0	720.00	0.0	42.00	490.00	490.00	532.00	532.00
303.000	584.95	0.0	585.10	42.00	0.0	880.00	0.0	42.00	490.00	490.00	532.00	532.00
400.000	582.72	0.0	582.74	104.69	0.0	480.00	0.0	105.00	425.00	425.00	530.00	530.00
400.000	583.67	0.0	583.70	105.00	0.0	640.00	0.0	105.00	425.00	425.00	530.00	530.00
400.000	584.21	0.0	584.24	105.00	0.0	720.00	0.0	105.00	425.00	425.00	530.00	530.00
400.000	585.09	0.0	585.12	105.00	0.0	880.00	0.0	105.00	425.00	425.00	530.00	530.00
1120.000	582.81	0.0	582.94	47.43	0.0	480.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1120.000	583.73	0.0	583.87	48.16	0.0	640.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1120.000	584.25	0.0	584.40	48.57	0.0	720.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1120.000	585.12	0.0	585.27	49.00	0.0	880.00	0.0	49.00	1004.00	1004.00	1053.00	1053.00
1200.000	582.83	0.0	583.04	40.10	0.0	480.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1200.000	583.74	0.0	583.97	41.13	0.0	640.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1200.000	584.25	0.0	584.48	41.72	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1200.000	585.11	0.0	585.35	42.00	0.0	880.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1201.000	582.63	0.0	583.04	40.09	0.0	480.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1201.000	583.69	0.0	583.99	41.07	0.0	640.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1201.000	584.15	0.0	584.53	41.60	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
* 1201.000	584.91	0.0	585.44	42.00	0.0	880.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00

SECND	CWSEL	CIFKWS	EG	TOPWID	QLOD	ECH	WROS	PERENC	STENCL	STCHL	STCHR	STENCR
1202.000	582.83	0.0	583.05	40.09	0.0	480.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1202.000	583.71	0.0	584.01	41.09	0.0	640.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1202.000	584.16	0.0	584.55	41.63	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
* 1202.000	584.94	0.0	585.43	42.00	0.0	880.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	582.84	0.0	583.05	40.10	0.0	480.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	583.80	0.0	584.02	41.20	0.0	640.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	584.35	0.0	584.57	41.83	0.0	720.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1203.000	585.26	0.0	585.51	42.00	0.0	880.00	0.0	42.00	1000.00	1000.00	1042.00	1042.00
1300.000	583.01	0.0	583.14	44.49	0.0	480.00	0.0	45.00	993.00	993.00	1038.00	1038.00
1300.000	583.94	0.0	584.09	44.72	0.0	640.00	0.0	45.00	993.00	993.00	1038.00	1038.00
1300.000	584.48	0.0	584.63	44.85	0.0	720.00	0.0	45.00	993.00	993.00	1038.00	1038.00
1300.000	585.40	0.0	585.56	45.00	0.0	880.00	0.0	45.00	993.00	993.00	1038.00	1038.00
2100.000	583.71	0.0	583.98	37.37	0.0	480.00	0.0	0.0	0.0	480.00	519.00	0.0
2100.000	584.54	0.0	594.84	37.79	0.0	640.00	0.0	0.0	0.0	480.00	519.00	0.0
2100.000	585.01	0.0	585.30	38.03	0.0	720.00	0.0	0.0	0.0	480.00	519.00	0.0
2100.000	585.86	0.0	586.17	38.46	0.0	880.00	0.0	0.0	0.0	480.00	519.00	0.0
2800.000	584.45	0.0	584.58	31.71	0.0	480.00	0.0	0.0	0.0	103.50	149.00	0.0
2800.000	585.26	0.0	585.46	33.23	0.0	640.00	0.0	0.0	0.0	103.50	149.00	0.0
2800.000	585.72	0.0	585.91	34.05	0.0	720.00	0.0	0.0	0.0	103.50	149.00	0.0
2800.000	586.53	0.0	585.75	35.54	0.0	880.00	0.0	0.0	0.0	103.50	149.00	0.0
2926.000	584.47	0.0	584.68	20.00	0.0	480.00	0.0	0.0	0.0	490.00	510.00	0.0
2926.000	585.28	0.0	585.58	20.00	0.0	640.00	0.0	0.0	0.0	490.00	510.00	0.0
2926.000	585.70	0.0	586.04	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
2926.000	586.49	0.0	586.91	20.00	0.0	880.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	584.49	0.0	584.70	20.00	0.0	480.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	585.32	0.0	586.17	20.00	0.0	640.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	586.52	0.0	586.30	20.00	0.0	720.00	0.0	0.0	0.0	490.00	510.00	0.0
2927.000	587.39	0.0	587.69	143.88	9.36	836.39	34.26	0.0	0.0	490.00	510.00	0.0
3319.000	584.83	0.0	585.10	21.00	0.0	480.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3319.000	585.24	0.0	586.55	21.00	0.0	640.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3319.000	585.85	0.0	587.19	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3319.000	587.70	0.0	588.10	21.00	0.0	880.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	584.83	0.0	585.10	21.00	0.0	480.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	586.24	0.0	586.55	21.00	0.0	640.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	586.82	0.0	587.20	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3320.000	587.59	0.0	588.15	21.00	0.0	880.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	584.89	0.0	585.16	21.00	0.0	480.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	586.30	0.0	586.60	21.00	0.0	640.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	586.94	0.0	587.31	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3321.000	587.76	0.0	588.32	21.00	0.0	880.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	584.89	0.0	585.16	21.00	0.0	480.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	586.30	0.0	586.60	21.00	0.0	640.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	587.00	0.0	587.32	21.00	0.0	720.00	0.0	0.0	0.0	1001.00	1022.00	0.0
3322.000	587.97	0.0	588.34	21.00	0.0	880.00	0.0	0.0	0.0	1001.00	1022.00	0.0

SECNO	CWSEL	DIFKWS	EG	TOPWID	DLOB	SCH	DROB	PERENC	STENCL	STCHL	STCHR	STENCR
3400.000	585.06	0.0	585.23	33.13	0.0	480.00	0.0	0.0	0.0	110.50	149.50	0.0
3400.000	586.50	0.0	586.67	36.67	0.0	640.00	0.0	0.0	0.0	110.50	149.50	0.0
3400.000	587.21	0.0	587.38	38.42	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3400.000	588.24	0.0	588.40	146.64	8.46	359.53	11.36	0.0	0.0	110.50	149.50	0.0
3600.000	585.21	0.0	585.39	33.02	0.0	480.00	0.0	0.0	0.0	110.50	149.50	0.0
3600.000	586.61	0.0	586.79	36.46	0.0	640.00	0.0	0.0	0.0	110.50	149.50	0.0
3600.000	587.31	0.0	587.49	38.17	0.0	720.00	0.0	0.0	0.0	110.50	149.50	0.0
3600.000	588.32	0.0	588.50	130.34	5.51	866.27	8.21	0.0	0.0	110.50	149.50	0.0
3750.000	585.41	0.0	585.46	50.54	0.15	239.03	0.81	0.0	0.0	983.00	1018.00	0.0
3750.000	586.80	0.0	586.84	62.46	0.93	385.25	7.82	0.0	0.0	983.00	1018.00	0.0
3750.000	587.49	0.0	587.53	68.44	14.79	408.56	11.64	0.0	0.0	983.00	1018.00	0.0
3750.000	588.49	0.0	588.54	77.05	35.04	504.60	19.36	0.0	0.0	983.00	1018.00	0.0
3800.000	585.43	0.0	585.60	50.00	20.94	252.89	15.16	50.00	483.00	498.00	518.00	533.00
3800.000	586.85	0.0	586.95	50.00	58.27	306.15	35.59	50.00	483.00	498.00	518.00	533.00
3800.000	587.53	0.0	587.61	50.00	73.37	318.74	42.89	50.00	483.00	498.00	518.00	533.00
3800.000	588.53	0.0	588.62	50.00	107.67	391.78	60.55	50.00	483.00	498.00	518.00	533.00
3850.000	585.51	0.0	585.75	17.00	0.0	290.00	0.0	200.00	410.00	502.00	519.00	610.00
3850.000	586.82	0.0	587.10	17.00	0.0	400.00	0.0	200.00	410.00	502.00	519.00	610.00
3850.000	587.49	0.0	587.75	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3850.000	588.46	0.0	588.78	69.44	4.36	555.52	0.12	200.00	410.00	502.00	519.00	610.00
3851.000	585.52	0.0	585.76	17.00	0.0	290.00	0.0	200.00	410.00	502.00	519.00	610.00
3851.000	586.83	0.0	587.10	17.00	0.0	400.00	0.0	200.00	410.00	502.00	519.00	610.00
3851.000	587.48	0.0	587.78	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3851.000	588.41	0.0	588.36	59.25	6.10	553.02	0.08	200.00	410.00	502.00	519.00	610.00
3852.000	585.56	0.0	585.80	17.00	0.0	290.00	0.0	200.00	410.00	502.00	519.00	610.00
3852.000	586.87	0.0	587.13	17.00	0.0	400.00	0.0	200.00	410.00	502.00	519.00	610.00
3852.000	587.55	0.0	587.35	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3852.000	588.64	0.0	589.01	99.65	24.95	533.43	1.62	200.00	410.00	502.00	519.00	610.00
3853.000	585.56	0.0	585.80	17.00	0.0	290.00	0.0	200.00	410.00	502.00	519.00	610.00
3853.000	586.87	0.0	587.14	17.00	0.0	400.00	0.0	200.00	410.00	502.00	519.00	610.00
3853.000	587.62	0.0	587.87	17.00	0.0	435.00	0.0	200.00	410.00	502.00	519.00	610.00
3853.000	588.80	0.0	589.05	126.98	21.94	536.07	1.99	200.00	410.00	502.00	519.00	610.00
3900.000	585.80	0.0	585.92	50.00	37.79	230.39	13.32	50.00	492.00	509.00	526.00	542.00
3900.000	587.15	0.0	587.25	50.00	83.23	282.24	34.52	50.00	492.00	509.00	526.00	542.00
3900.000	587.88	0.0	587.96	50.00	101.38	290.47	43.15	50.00	492.00	509.00	526.00	542.00
3900.000	589.06	0.0	589.15	50.00	145.51	351.09	63.40	50.00	492.00	509.00	526.00	542.00
4000.000	586.17	0.0	586.26	73.75	8.41	276.72	4.87	100.00	563.00	599.00	628.00	663.00
4000.000	587.39	0.0	587.45	100.00	58.21	318.39	23.40	100.00	563.00	599.00	628.00	663.00
4000.000	588.06	0.0	588.10	100.00	89.91	312.44	32.54	100.00	563.00	599.00	628.00	663.00
4000.000	589.22	0.0	589.26	100.00	155.92	351.26	52.82	100.00	563.00	599.00	628.00	663.00
5575.000	587.28	0.0	587.38	38.45	4.95	285.05	0.0	50.00	980.00	991.00	1019.00	1030.00
5575.000	583.14	0.0	583.25	50.00	23.75	375.18	1.07	50.00	980.00	991.00	1019.00	1030.00
5575.000	583.59	0.0	583.69	50.00	34.02	397.83	3.15	50.00	980.00	991.00	1019.00	1030.00
5575.000	589.60	0.0	589.71	50.00	62.17	487.93	9.90	50.00	980.00	991.00	1019.00	1030.00

SECND	CWSEL	DIFKWS	ZG	TOPWID	QLOB	CCH	QROB	PERIMC	STENCL	STCHL	STCHR	STENCR
5625.000	587.26	0.0	587.05	12.00	0.0	290.00	0.0	0.0	0.0	990.00	1002.00	0.0
5625.000	588.05	0.0	588.59	12.00	0.0	400.00	0.0	0.0	0.0	990.00	1002.00	0.0
5625.000	588.47	0.0	589.02	12.00	0.0	435.00	0.0	0.0	0.0	990.00	1002.00	0.0
5625.000	589.67	0.0	589.76	149.90	85.42	280.95	193.63	0.0	0.0	990.00	1002.00	0.0
5626.000	587.24	0.0	587.69	12.00	0.0	290.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5626.000	587.99	0.0	588.68	12.00	0.0	400.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5626.000	588.39	0.0	589.14	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5626.000	589.66	0.0	589.78	149.64	13.32	185.49	360.18	200.00	895.00	990.00	1002.00	1095.00
5627.000	587.42	0.0	587.84	12.00	0.0	290.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5627.000	588.29	0.0	588.94	12.00	0.0	400.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5627.000	588.74	0.0	589.45	12.00	0.0	435.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5627.000	589.28	0.0	590.43	12.00	0.0	560.00	0.0	200.00	895.00	990.00	1002.00	1095.00
5628.000	587.54	0.0	587.83	12.00	0.0	290.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5628.000	588.56	0.0	589.01	12.00	0.0	400.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5628.000	589.09	0.0	589.55	12.00	0.0	435.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5628.000	590.05	0.0	590.53	12.00	0.0	560.00	0.0	504.50	590.50	990.00	1002.00	1095.00
5675.000	587.95	0.0	588.04	50.00	6.14	283.36	0.50	50.00	955.00	967.00	992.00	1005.00
5675.000	589.11	0.0	589.19	50.00	25.23	361.06	13.66	50.00	955.00	967.00	992.00	1005.00
5675.000	589.65	0.0	589.72	50.00	34.09	379.49	21.42	50.00	955.00	967.00	992.00	1005.00
5675.000	590.75	0.0	590.83	50.00	57.03	461.19	41.78	50.00	955.00	967.00	992.00	1005.00
6075.000	588.72	0.0	588.81	28.93	0.0	290.00	0.0	33.00	477.00	477.00	510.00	510.00
6075.000	589.77	0.0	589.87	31.07	0.0	400.00	0.0	33.00	477.00	477.00	510.00	510.00
6075.000	590.21	0.0	590.31	31.45	0.0	435.00	0.0	33.00	477.00	477.00	510.00	510.00
6075.000	591.26	0.0	591.37	32.36	0.0	560.00	0.0	33.00	477.00	477.00	510.00	510.00
6125.000	588.79	0.0	588.97	15.00	0.0	290.00	0.0	0.0	0.0	492.50	507.50	0.0
6125.000	589.81	0.0	590.06	15.00	0.0	400.00	0.0	0.0	0.0	492.50	507.50	0.0
6125.000	590.24	0.0	590.50	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6125.000	591.26	0.0	591.59	15.00	0.0	560.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	589.79	0.0	588.99	15.00	0.0	290.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	589.80	0.0	590.09	15.00	0.0	400.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	590.22	0.0	590.53	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6126.000	591.19	0.0	591.65	15.00	0.0	560.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	588.85	0.0	589.05	15.00	0.0	290.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	589.89	0.0	590.17	15.00	0.0	400.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	590.32	0.0	590.62	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6127.000	591.37	0.0	591.83	15.00	0.0	560.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	588.88	0.0	589.05	15.00	0.0	290.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	589.95	0.0	590.19	15.00	0.0	400.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	590.39	0.0	590.64	15.00	0.0	435.00	0.0	0.0	0.0	492.50	507.50	0.0
6128.000	591.56	0.0	591.87	15.00	0.0	560.00	0.0	0.0	0.0	492.50	507.50	0.0
6175.000	589.11	0.0	589.15	41.26	0.0	290.00	0.0	46.00	463.00	463.00	514.00	514.00
6175.000	590.25	0.0	590.29	43.93	0.0	400.00	0.0	46.00	463.00	463.00	514.00	514.00
6175.000	590.70	0.0	590.75	45.00	0.0	435.00	0.0	46.00	463.00	463.00	514.00	514.00
6175.000	591.93	0.0	591.98	46.00	0.0	560.00	0.0	46.00	463.00	463.00	514.00	514.00

SECND	CWSEL	DIFKWS	ES	TCPMID	BLDB	QCH	DROB	PERENC	STENCL	STCHL	STCHR	STENCR
7050.000	589.68	0.0	589.73	33.93	0.0	290.00	0.0	100.00	410.00	437.00	479.00	510.00
7050.000	590.81	0.0	590.90	38.90	0.0	400.00	0.0	100.00	410.00	437.00	479.00	510.00
7050.000	591.22	0.0	591.31	47.59	0.14	434.86	0.0	100.00	410.00	437.00	479.00	510.00
7050.000	592.36	0.0	592.46	100.00	47.81	507.36	4.83	100.00	410.00	437.00	479.00	510.00
8125.000	592.25	0.0	592.33	28.37	0.0	290.00	0.0	75.00	960.00	996.00	1025.00	1035.00
8125.000	593.15	0.0	593.24	75.00	9.94	381.28	8.87	75.00	960.00	996.00	1025.00	1035.00
8125.000	593.39	0.0	593.47	75.00	22.97	393.26	13.76	75.00	960.00	996.00	1025.00	1035.00
8125.000	594.03	0.0	594.12	75.00	74.80	455.30	29.90	75.00	960.00	996.00	1025.00	1035.00
8175.000	592.40	0.0	592.45	57.65	73.18	136.65	80.17	95.00	930.00	995.00	1005.00	1025.00
8175.000	593.30	0.0	593.36	83.00	125.89	151.98	122.12	95.00	930.00	995.00	1005.00	1025.00
8175.000	593.53	0.0	593.58	89.40	144.93	156.27	133.79	95.00	930.00	995.00	1005.00	1025.00
8175.000	594.16	0.0	594.22	95.00	220.10	170.46	169.44	95.00	930.00	995.00	1005.00	1025.00
8176.000	593.56	0.0	593.59	75.00	93.68	102.62	83.70	75.00	950.00	995.00	1005.00	1025.00
8176.000	595.06	0.0	595.08	75.00	173.33	104.55	122.12	75.00	950.00	995.00	1005.00	1025.00
8176.000	595.20	0.0	595.23	75.00	191.35	111.06	132.59	75.00	950.00	995.00	1005.00	1025.00
8176.000	595.60	0.0	595.63	75.00	255.34	134.75	169.90	75.00	950.00	995.00	1005.00	1025.00
8225.000	593.60	0.0	593.61	75.00	31.58	192.98	25.44	75.00	956.00	979.00	1013.00	1031.00
8225.000	595.08	0.0	595.09	75.00	65.49	223.23	51.23	75.00	956.00	979.00	1013.00	1031.00
8225.000	595.23	0.0	595.24	75.00	74.01	243.15	57.84	75.00	956.00	979.00	1013.00	1031.00
8225.000	595.64	0.0	595.65	75.00	96.22	283.94	74.84	75.00	956.00	979.00	1013.00	1031.00
9880.000	594.08	0.0	594.12	80.19	0.14	249.76	0.11	200.00	900.00	984.00	1019.00	1100.00
9880.000	595.34	0.0	595.35	200.00	67.28	210.64	62.08	200.00	900.00	984.00	1019.00	1100.00
9880.000	595.50	0.0	595.51	200.00	81.79	217.33	75.87	200.00	900.00	984.00	1019.00	1100.00
9880.000	595.92	0.0	595.93	200.00	120.05	227.54	112.40	200.00	900.00	984.00	1019.00	1100.00
9930.000	594.09	0.0	594.32	10.00	0.0	250.00	0.0	100.00	950.00	995.00	1005.00	1050.00
9930.000	595.36	0.0	595.39	100.00	99.12	119.15	121.73	100.00	950.00	995.00	1005.00	1050.00
9930.000	595.52	0.0	595.55	100.00	112.52	125.31	137.07	100.00	950.00	995.00	1005.00	1050.00
9930.000	595.93	0.0	595.97	100.00	147.52	136.38	175.60	100.00	950.00	995.00	1005.00	1050.00
9931.000	594.00	0.0	594.39	10.00	0.0	250.00	0.0	100.00	950.00	995.00	1005.00	1050.00
9931.000	595.30	0.0	595.42	100.00	66.31	184.25	89.45	100.00	950.00	995.00	1005.00	1050.00
9931.000	595.47	0.0	595.58	100.00	85.39	180.06	109.55	100.00	950.00	995.00	1005.00	1050.00
9931.000	595.90	0.0	595.99	100.00	132.37	170.00	157.64	100.00	950.00	995.00	1005.00	1050.00
9932.000	594.23	0.0	594.62	35.28	0.0	250.00	0.0	100.00	950.00	995.00	1005.00	1050.00
9932.000	595.44	0.0	595.53	100.00	75.52	166.81	97.67	100.00	950.00	995.00	1005.00	1050.00
9932.000	595.59	0.0	595.68	100.00	92.63	166.58	115.79	100.00	950.00	995.00	1005.00	1050.00
9932.000	595.98	0.0	596.06	100.00	136.30	162.89	160.91	100.00	950.00	995.00	1005.00	1050.00
9933.000	594.62	0.0	594.66	100.00	50.51	136.27	63.22	100.00	950.00	995.00	1005.00	1050.00
9933.000	595.50	0.0	595.54	100.00	85.85	149.59	104.57	100.00	950.00	995.00	1005.00	1050.00
9933.000	595.65	0.0	595.69	100.00	97.61	159.41	117.97	100.00	950.00	995.00	1005.00	1050.00
9933.000	596.02	0.0	596.07	100.00	120.49	179.20	152.31	100.00	950.00	995.00	1005.00	1050.00
9980.000	594.66	0.0	594.69	151.35	0.06	244.52	5.43	200.00	900.00	980.00	1017.00	1100.00
9980.000	595.54	0.0	595.56	200.00	30.94	258.43	53.63	200.00	900.00	980.00	1017.00	1100.00
9980.000	595.69	0.0	595.71	200.00	40.37	272.31	62.31	200.00	900.00	980.00	1017.00	1100.00
9980.000	596.07	0.0	596.09	200.00	67.50	293.30	94.21	200.00	900.00	980.00	1017.00	1100.00

SECND	CWSEL	DIFCWS	EG	TOPWID	ILOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
10800.000	594.34	0.0	594.36	120.00	19.39	176.53	54.08	120.00	960.00	1007.00	1037.00	1080.00
10800.000	595.65	0.0	595.67	120.00	56.25	189.62	94.13	120.00	960.00	1007.00	1037.00	1080.00
10800.000	595.80	0.0	595.82	120.00	66.72	201.77	106.51	120.00	960.00	1007.00	1037.00	1080.00
10800.000	596.18	0.0	596.20	120.00	94.66	227.76	137.58	120.00	960.00	1007.00	1037.00	1080.00
10850.000	594.86	0.0	594.90	33.00	0.0	250.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10850.000	595.66	0.0	595.71	33.00	0.0	340.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10850.000	595.80	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10850.000	596.17	0.0	596.26	33.00	0.0	460.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	594.36	0.0	594.90	33.00	0.0	250.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	595.66	0.0	595.71	33.00	0.0	340.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	595.80	0.0	595.86	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10851.000	596.17	0.0	596.26	33.00	0.0	460.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	594.86	0.0	594.90	33.00	0.0	250.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	595.66	0.0	595.72	33.00	0.0	340.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10852.000	596.18	0.0	596.26	33.00	0.0	460.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	594.36	0.0	594.90	33.00	0.0	250.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	595.66	0.0	595.72	33.00	0.0	340.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	595.81	0.0	595.87	33.00	0.0	375.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10853.000	596.18	0.0	596.26	33.00	0.0	460.00	0.0	0.0	0.0	1000.00	1033.00	0.0
10900.000	594.90	0.0	594.95	50.00	1.79	226.21	22.00	50.00	986.50	993.00	1025.00	1036.50
10900.000	595.70	0.0	595.76	50.00	13.41	234.36	41.72	50.00	986.50	993.00	1025.00	1036.50
10900.000	595.86	0.0	595.92	50.00	17.08	310.03	47.39	50.00	986.50	993.00	1025.00	1036.50
10900.000	596.25	0.0	596.32	50.00	27.67	368.54	63.79	50.00	986.50	993.00	1025.00	1036.50
11150.000	595.00	0.0	595.04	95.21	0.27	204.38	45.35	140.00	940.00	998.00	1025.00	1080.00
11150.000	595.80	0.0	595.83	140.00	19.15	215.00	105.85	140.00	940.00	998.00	1025.00	1080.00
11150.000	595.96	0.0	595.99	140.00	23.56	224.36	122.08	140.00	940.00	998.00	1025.00	1080.00
11150.000	596.37	0.0	596.40	140.00	56.30	241.93	161.77	140.00	940.00	998.00	1025.00	1080.00
12150.000	595.63	0.0	595.71	61.42	0.0	238.02	11.98	113.50	946.50	998.00	1025.00	1060.00
12150.000	596.24	0.0	596.33	72.08	0.19	287.27	52.54	113.50	946.50	998.00	1025.00	1060.00
12150.000	596.40	0.0	596.49	83.03	1.33	306.73	66.94	113.50	946.50	998.00	1025.00	1060.00
12150.000	596.77	0.0	596.86	109.07	11.22	345.09	103.69	113.50	946.50	998.00	1025.00	1060.00
13225.000	597.21	0.0	597.32	24.11	0.0	250.00	0.0	50.00	778.00	801.00	828.00	828.00
13225.000	597.80	0.0	597.95	25.85	0.0	340.00	0.0	50.00	778.00	801.00	828.00	828.00
13225.000	598.00	0.0	598.16	26.43	0.0	375.00	0.0	50.00	778.00	801.00	828.00	828.00
13225.000	598.38	0.0	598.59	50.00	3.81	456.19	0.0	50.00	778.00	801.00	828.00	828.00
13275.000	597.62	0.0	597.75	13.00	0.0	250.00	0.0	60.00	780.00	793.00	806.00	840.00
13275.000	598.34	0.0	598.52	13.00	0.0	340.00	0.0	60.00	780.00	793.00	806.00	840.00
13275.000	598.57	0.0	598.79	13.00	0.0	375.00	0.0	60.00	780.00	793.00	806.00	840.00
13275.000	599.05	0.0	599.34	13.00	0.0	460.00	0.0	60.00	780.00	793.00	806.00	840.00
13276.000	597.95	0.0	598.07	13.00	0.0	250.00	0.0	75.00	775.00	793.00	806.00	850.00
13276.000	599.00	0.0	599.16	13.00	0.0	340.00	0.0	75.00	775.00	793.00	806.00	850.00
13276.000	599.36	0.0	599.43	75.00	66.56	223.36	81.98	75.00	775.00	793.00	806.00	850.00
13276.000	599.31	0.0	599.88	75.00	92.82	229.51	137.68	75.00	775.00	793.00	806.00	850.00

SECNO	CMSEL	DIFKWS	ES	TOPWID	OLDB	GCH	TRDB	PERENC	STENCL	STCHL	STCHR	STENCR
13325.000	598.14	0.0	598.16	100.00	25.21	160.59	64.19	100.00	725.00	758.00	784.00	825.00
13325.000	599.21	0.0	599.23	100.00	63.53	150.30	120.66	100.00	725.00	758.00	784.00	825.00
13325.000	599.45	0.0	599.47	100.00	80.94	156.44	137.63	100.00	725.00	758.00	784.00	825.00
13325.000	599.89	0.0	599.92	100.00	109.13	173.99	175.38	100.00	725.00	758.00	784.00	825.00
13700.000	598.25	0.0	598.26	175.00	81.32	141.21	27.47	175.00	112.50	185.00	220.00	287.50
13700.000	599.27	0.0	599.27	175.00	136.12	126.96	76.92	175.00	112.50	185.00	220.00	287.50
13700.000	599.50	0.0	599.51	175.00	153.36	130.29	91.36	175.00	112.50	185.00	220.00	287.50
13700.000	599.95	0.0	599.96	175.00	193.56	142.42	124.02	175.00	112.50	185.00	220.00	287.50
13750.000	598.26	0.0	598.28	154.20	92.34	62.24	94.92	200.00	150.00	195.50	204.50	350.00
13750.000	599.27	0.0	599.28	200.00	116.92	54.81	163.27	200.00	150.00	195.50	204.50	350.00
13750.000	599.51	0.0	599.52	200.00	125.79	54.92	194.28	200.00	150.00	195.50	204.50	350.00
13750.000	599.95	0.0	599.96	200.00	147.94	57.32	254.74	200.00	150.00	195.50	204.50	350.00
13751.000	598.15	0.0	598.33	142.53	0.0	160.83	89.17	200.00	150.00	195.50	204.50	350.00
13751.000	599.24	0.0	599.29	200.00	23.17	54.16	262.57	200.00	150.00	195.50	204.50	350.00
13751.000	599.49	0.0	599.53	200.00	36.98	45.87	292.16	200.00	150.00	195.50	204.50	350.00
13751.000	599.94	0.0	599.97	200.00	62.34	38.31	359.35	200.00	150.00	195.50	204.50	350.00
13752.000	598.79	0.0	598.88	200.00	0.32	71.16	173.51	200.00	150.00	195.50	204.50	350.00
13752.000	599.37	0.0	599.41	200.00	28.93	45.96	264.11	200.00	150.00	195.50	204.50	350.00
13752.000	599.57	0.0	599.61	200.00	40.12	42.35	292.53	200.00	150.00	195.50	204.50	350.00
13752.000	599.99	0.0	600.02	200.00	63.15	37.51	359.34	200.00	150.00	195.50	204.50	350.00
13753.000	598.83	0.0	598.89	200.00	89.80	46.01	112.19	200.00	150.00	195.50	204.50	350.00
13753.000	599.40	0.0	599.41	200.00	115.38	52.06	172.56	200.00	150.00	195.50	204.50	350.00
13753.000	599.60	0.0	599.61	200.00	124.75	53.19	197.06	200.00	150.00	195.50	204.50	350.00
13753.000	600.01	0.0	600.02	200.00	147.32	56.41	255.28	200.00	150.00	195.50	204.50	350.00
13800.000	593.89	0.0	593.90	200.00	29.29	162.46	58.25	200.00	150.00	180.00	203.00	350.00
13800.000	599.41	0.0	599.43	200.00	47.44	158.11	134.45	200.00	150.00	180.00	203.00	350.00
13800.000	599.61	0.0	599.62	200.00	53.95	156.84	154.21	200.00	150.00	180.00	203.00	350.00
13800.000	600.02	0.0	600.03	200.00	68.77	153.44	232.80	200.00	150.00	180.00	208.00	350.00
14850.000	599.21	0.0	599.23	183.25	73.69	174.85	1.46	200.00	50.00	185.00	220.00	250.00
14850.000	599.66	0.0	599.68	200.00	141.70	188.13	10.18	200.00	50.00	185.00	220.00	250.00
14850.000	599.83	0.0	599.85	200.00	170.04	190.23	14.73	200.00	50.00	185.00	220.00	250.00
14850.000	600.20	0.0	600.22	200.00	236.66	197.19	25.14	200.00	50.00	185.00	220.00	250.00
15800.000	599.71	0.0	599.79	31.25	0.0	250.00	0.0	50.00	995.00	1003.00	1037.00	1045.00
15800.000	600.12	0.0	600.23	32.93	0.0	340.00	0.0	50.00	995.00	1003.00	1037.00	1045.00
15800.000	600.26	0.0	600.39	41.40	0.17	374.83	0.0	50.00	995.00	1003.00	1037.00	1045.00
15800.000	600.57	0.0	600.73	44.37	4.81	455.19	0.00	50.00	995.00	1003.00	1037.00	1045.00
15850.000	599.94	0.0	600.19	9.00	0.0	250.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15850.000	600.43	0.0	600.83	9.00	0.0	340.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15850.000	600.59	0.0	601.06	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15850.000	600.94	0.0	601.58	9.00	0.0	460.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	600.34	0.0	600.36	9.00	0.0	250.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	601.76	0.0	602.05	9.00	0.0	340.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	601.85	0.0	602.20	9.00	0.0	375.00	0.0	100.00	950.00	995.50	1004.50	1050.00
15851.000	602.00	0.0	602.30	9.00	0.0	460.00	0.0	100.00	950.00	995.50	1004.50	1050.00

SECNO	CASEL	DIFK/S	ES	TCPUIC	ILOB	GCH	IRCB	PERENC	STENCL	STCHL	STCHR	STENCR
15900.000	601.13	0.0	601.16	41.38	0.0	246.21	3.79	50.00	975.00	983.00	1017.00	1025.00
15900.000	602.20	0.0	602.22	50.00	5.32	319.68	13.00	50.00	975.00	983.00	1017.00	1025.00
15900.000	602.36	0.0	602.40	50.00	7.20	349.31	17.99	50.00	975.00	983.00	1017.00	1025.00
15900.000	602.73	0.0	602.77	50.00	12.53	421.67	25.81	50.00	975.00	983.00	1017.00	1025.00
17030.000	601.73	0.0	601.76	153.06	0.33	234.95	14.72	225.00	875.00	983.00	1017.00	1100.00
17030.000	602.64	0.0	602.65	225.00	30.37	216.37	82.75	225.00	875.00	983.00	1017.00	1100.00
17030.000	602.82	0.0	602.83	225.00	53.63	222.52	98.85	225.00	875.00	983.00	1017.00	1100.00
17030.000	603.20	0.0	603.21	225.00	92.41	231.05	135.54	225.00	875.00	983.00	1017.00	1100.00
18100.000	602.27	0.0	602.30	43.84	0.0	249.37	0.63	200.00	200.00	287.00	333.00	400.00
18100.000	603.01	0.0	603.05	52.38	0.0	335.99	4.01	200.00	200.00	287.00	333.00	400.00
18100.000	603.19	0.0	603.22	53.21	0.0	369.41	5.59	200.00	200.00	287.00	333.00	400.00
18100.000	603.56	0.0	603.60	67.57	0.05	449.52	10.43	200.00	200.00	287.00	333.00	400.00
18150.000	602.23	0.0	602.54	9.00	0.0	250.00	0.0	9.00	245.50	245.50	254.50	254.50
18150.000	602.99	0.0	603.38	9.00	0.0	340.00	0.0	9.00	245.50	245.50	254.50	254.50
18150.000	603.15	0.0	603.60	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18150.000	603.47	0.0	604.10	9.00	0.0	460.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.14	0.0	602.74	9.00	0.0	250.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.68	0.0	603.79	9.00	0.0	340.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.75	0.0	604.11	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18151.000	602.85	0.0	604.89	9.00	0.0	460.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	602.64	0.0	603.24	9.00	0.0	250.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	603.59	0.0	604.70	9.00	0.0	340.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	603.86	0.0	605.22	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18152.000	605.30	0.0	605.57	9.00	0.0	460.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	603.17	0.0	603.37	9.00	0.0	250.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	604.72	0.0	604.98	9.00	0.0	340.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	605.28	0.0	605.56	9.00	0.0	375.00	0.0	9.00	245.50	245.50	254.50	254.50
18153.000	606.54	0.0	606.87	9.00	0.0	460.00	0.0	9.00	245.50	245.50	254.50	254.50
18210.000	603.40	0.0	603.44	50.00	0.33	240.76	8.90	50.00	208.00	220.00	246.00	258.00
18210.000	605.02	0.0	605.05	50.00	12.37	301.19	26.44	50.00	208.00	220.00	246.00	258.00
18210.000	605.61	0.0	605.65	50.00	18.29	323.57	33.14	50.00	208.00	220.00	246.00	258.00
18210.000	606.94	0.0	606.97	50.00	32.66	376.81	48.53	50.00	208.00	220.00	246.00	258.00
18700.000	603.45	0.0	603.49	30.52	0.0	250.00	0.0	33.00	235.00	235.00	269.00	269.00
18700.000	605.06	0.0	605.10	33.00	0.0	340.00	0.0	33.00	235.00	235.00	269.00	269.00
18700.000	605.65	0.0	605.68	33.00	0.0	375.00	0.0	33.00	235.00	235.00	269.00	269.00
18700.000	606.96	0.0	607.00	33.00	0.0	460.00	0.0	33.00	235.00	235.00	269.00	269.00
18750.000	603.32	0.0	603.66	7.40	0.0	250.00	0.0	7.40	298.30	298.30	305.70	305.70
18750.000	604.39	0.0	605.31	7.40	0.0	340.00	0.0	7.40	298.30	298.30	305.70	305.70
18750.000	605.46	0.0	605.91	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18750.000	606.74	0.0	607.27	7.40	0.0	460.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	605.35	0.0	605.55	7.40	0.0	250.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	606.41	0.0	606.72	7.40	0.0	340.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	606.75	0.0	607.10	7.40	0.0	375.00	0.0	7.40	298.30	298.30	305.70	305.70
18751.000	607.48	0.0	607.94	7.40	0.0	460.00	0.0	7.40	298.30	298.30	305.70	305.70

SECNO	DUSEL	DIFKMS	EG	TOP ID	WLOB	UCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
18800.000	605.61	0.0	605.62	50.00	5.90	173.47	0.53	50.00	282.50	291.00	324.00	332.50
18800.000	606.81	0.0	606.82	50.00	10.50	210.60	3.89	50.00	282.50	291.00	324.00	332.50
18800.000	607.20	0.0	607.21	50.00	14.10	259.81	6.09	50.00	282.50	291.00	324.00	332.50
18800.000	608.07	0.0	608.09	50.00	19.97	319.80	10.73	50.00	282.50	291.00	324.00	332.50
19950.000	605.65	0.0	605.65	155.00	13.76	161.94	4.30	175.00	200.00	253.00	292.00	375.00
19950.000	606.83	0.0	606.84	155.00	33.84	162.38	23.78	175.00	200.00	253.00	292.00	375.00
19950.000	607.23	0.0	607.23	155.00	52.81	191.07	36.12	175.00	200.00	253.00	292.00	375.00
19950.000	608.11	0.0	608.11	155.00	75.27	214.33	59.90	175.00	200.00	253.00	292.00	375.00

KING DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CHSEL	CRIMS	EG	LOK*S	VCH	AREA	.01K
300.000	315.00	0.0	0.0	576.20	480.00	582.50	0.0	582.70	4.11	2.55	188.46	236.84
300.000	315.00	0.0	0.0	576.20	640.00	583.50	0.0	583.62	4.18	2.83	226.25	313.17
300.000	315.00	0.0	0.0	576.20	720.00	584.00	0.0	584.13	4.03	2.91	247.40	358.51
300.000	315.00	0.0	0.0	576.20	880.00	584.80	0.0	584.96	4.10	3.13	281.17	434.36
301.000	1.00	582.80	591.50	576.20	480.00	582.57	0.0	582.71	11.42	2.93	163.53	142.05
301.000	1.00	582.80	591.50	576.20	640.00	583.42	0.0	583.65	25.33	3.87	165.40	127.15
301.000	1.00	582.80	591.50	576.20	720.00	583.89	0.0	584.16	33.00	4.35	165.40	125.33
301.000	1.00	582.80	591.50	576.20	880.00	584.60	0.0	585.04	51.47	5.32	165.40	122.66
302.000	5.20	582.80	591.50	576.20	480.00	582.58	0.0	582.71	11.42	2.93	163.70	142.05
302.000	5.20	582.80	591.50	576.20	640.00	583.43	0.0	583.67	25.34	3.87	165.40	127.14
302.000	5.20	582.00	591.50	576.20	720.00	583.90	0.0	584.20	33.02	4.35	165.40	125.30
302.000	5.20	582.00	591.50	576.20	880.00	584.63	0.0	585.07	51.53	5.32	165.40	122.59
303.000	1.00	0.0	0.0	576.20	480.00	582.62	0.0	582.72	4.05	2.54	189.35	238.56
303.000	1.00	0.0	0.0	576.20	640.00	583.56	0.0	583.68	4.04	2.80	228.79	318.52
303.000	1.00	0.0	0.0	576.20	720.00	584.09	0.0	584.22	3.86	2.87	251.11	366.65
303.000	1.00	0.0	0.0	576.20	880.00	584.95	0.0	585.10	3.84	3.06	287.51	449.03
400.000	80.00	0.0	0.0	576.90	480.00	582.72	0.0	582.74	1.16	1.26	381.73	445.02
400.000	80.00	0.0	0.0	576.90	640.00	583.67	0.0	583.70	0.97	1.33	482.31	648.37
400.000	80.00	0.0	0.0	576.90	720.00	584.21	0.0	584.24	0.87	1.34	538.52	774.05
400.000	80.00	0.0	0.0	576.90	880.00	585.09	0.0	585.12	0.78	1.39	631.32	998.12
1120.000	720.00	0.0	0.0	577.90	480.00	582.81	0.0	582.94	6.45	2.84	168.82	189.07
1120.000	720.00	0.0	0.0	577.90	640.00	583.73	0.0	583.87	5.59	3.00	213.00	270.96
1120.000	720.00	0.0	0.0	577.90	720.00	584.25	0.0	584.40	5.02	3.02	232.14	321.45
1120.000	720.00	0.0	0.0	577.90	880.00	585.12	0.0	585.27	4.56	3.14	280.37	412.27
1200.000	90.00	0.0	0.0	577.90	480.00	582.83	0.0	583.04	12.40	3.67	130.65	136.33
1200.000	90.00	0.0	0.0	577.90	640.00	583.74	0.0	583.97	10.29	3.82	167.34	199.51
1200.000	90.00	0.0	0.0	577.90	720.00	584.25	0.0	584.48	9.05	3.82	188.63	239.39
1200.000	90.00	0.0	0.0	577.90	880.00	585.11	0.0	585.35	7.95	3.92	224.61	312.20
1201.000	1.00	583.80	584.50	577.90	480.00	582.83	0.0	583.04	17.37	3.75	128.06	113.56
1201.000	1.00	583.80	584.50	577.90	640.00	583.69	0.0	583.99	34.20	4.41	145.06	109.44
1201.000	1.00	583.80	584.50	577.90	720.00	584.15	0.0	584.53	49.73	4.89	147.16	102.10
* 1201.000	1.00	583.80	584.50	577.90	880.00	584.91	0.0	585.44	69.36	5.86	150.28	105.66
1202.000	5.00	583.80	584.50	577.90	480.00	582.83	0.0	583.05	17.86	3.75	128.12	113.57
1202.000	5.00	583.80	584.50	577.90	640.00	583.71	0.0	584.01	34.29	4.41	145.17	109.30
1202.000	5.00	583.80	584.50	577.90	720.00	584.18	0.0	584.55	49.79	4.89	147.16	102.03
* 1202.000	5.00	583.80	584.50	577.90	880.00	584.94	0.0	585.48	69.36	5.85	150.34	105.67
1203.000	1.00	0.0	0.0	577.90	480.00	582.84	0.0	583.05	12.41	3.68	130.59	136.23
1203.000	1.00	0.0	0.0	577.90	640.00	583.80	0.0	584.02	9.36	3.77	169.67	203.77
1203.000	1.00	0.0	0.0	577.90	720.00	584.35	0.0	584.57	8.49	3.74	192.71	247.27
1203.000	1.00	0.0	0.0	577.90	880.00	585.23	0.0	585.51	7.21	3.79	231.91	327.71
1300.000	85.00	0.0	0.0	578.10	480.00	583.01	0.0	583.14	6.35	2.88	166.84	190.50
1300.000	85.00	0.0	0.0	578.10	640.00	583.94	0.0	584.09	5.65	3.07	203.54	269.20
1300.000	85.00	0.0	0.0	578.10	720.00	584.48	0.0	584.63	5.11	3.09	232.71	318.51
1300.000	85.00	0.0	0.0	578.10	880.00	585.40	0.0	585.56	4.64	3.21	274.13	408.55

SECND	KLCH	ELTRC	ELLC	EL TIN	Q	CWSEL	CRITS	E3	ICK*S	VCH	AREA	.01K
2100.000	300.00	0.0	0.0	580.30	480.00	583.71	0.0	583.98	18.25	4.17	115.14	112.35
2100.000	300.00	0.0	0.0	580.30	640.00	584.54	0.0	584.84	15.45	4.33	146.18	162.83
2100.000	300.00	0.0	0.0	580.30	720.00	585.01	0.0	585.30	13.56	4.38	164.27	194.83
2100.000	300.00	0.0	0.0	580.30	880.00	585.86	0.0	586.17	11.76	4.47	196.34	256.63
2800.000	700.00	0.0	0.0	578.10	480.00	584.45	0.0	584.58	4.82	2.92	164.23	218.62
2800.000	700.00	0.0	0.0	578.10	640.00	585.28	0.0	585.46	5.60	3.35	190.99	270.43
2800.000	700.00	0.0	0.0	578.10	720.00	585.72	0.0	585.91	5.75	3.50	205.33	300.29
2800.000	700.00	0.0	0.0	578.10	880.00	586.53	0.0	586.75	6.00	3.76	234.08	359.21
2926.000	114.00	0.0	0.0	577.90	480.00	584.47	0.0	584.68	3.55	3.73	128.83	164.15
2926.000	114.00	0.0	0.0	577.90	640.00	585.28	0.0	585.58	10.93	4.41	145.16	193.59
2926.000	114.00	0.0	0.0	577.90	720.00	585.70	0.0	586.04	11.86	4.69	153.56	209.06
2926.000	114.00	0.0	0.0	577.90	880.00	586.49	0.0	586.91	13.61	5.20	169.27	238.56
2927.000	25.00	586.60	584.90	577.90	480.00	584.49	0.0	584.70	8.88	3.73	128.59	161.11
2927.000	25.00	586.60	584.90	577.90	640.00	585.92	0.0	586.17	3.69	4.05	157.86	217.07
2927.000	25.00	586.60	584.90	577.90	720.00	586.52	0.0	586.80	9.03	4.24	169.95	239.67
2927.000	25.00	586.60	584.90	577.90	880.00	587.39	0.0	587.69	3.84	4.46	242.02	296.05
3319.000	359.00	0.0	0.0	579.20	480.00	584.33	0.0	585.10	13.00	4.23	113.58	133.12
3319.000	359.00	0.0	0.0	579.20	640.00	586.24	0.0	586.55	11.95	4.47	143.33	185.13
3319.000	359.00	0.0	0.0	579.20	720.00	586.85	0.0	587.18	11.92	4.61	158.15	208.57
3319.000	359.00	0.0	0.0	579.20	880.00	587.70	0.0	588.10	13.21	5.06	174.03	242.15
3320.000	1.00	589.50	590.00	579.20	480.00	584.83	0.0	585.10	12.99	4.22	113.61	133.17
3320.000	1.00	589.50	590.00	579.20	640.00	586.24	0.0	586.55	11.95	4.46	143.36	185.17
3320.000	1.00	589.50	590.00	579.20	720.00	586.82	0.0	587.20	26.80	4.91	146.65	139.07
3320.000	1.00	589.50	590.00	579.20	880.00	587.59	0.0	588.15	40.04	5.00	146.65	139.07
3321.000	42.00	589.50	590.00	579.20	480.00	584.89	0.0	585.16	12.58	4.18	114.90	135.34
3321.000	42.00	589.50	590.00	579.20	640.00	586.30	0.0	586.60	11.68	4.43	144.53	187.29
3321.000	42.00	589.50	590.00	579.20	720.00	586.94	0.0	587.31	26.80	4.91	146.65	139.07
3321.000	42.00	589.50	590.00	579.20	880.00	587.76	0.0	588.32	40.04	5.00	146.65	139.07
3322.000	1.00	0.0	0.0	579.20	480.00	584.89	0.0	585.16	12.58	4.18	114.90	135.34
3322.000	1.00	0.0	0.0	579.20	640.00	586.30	0.0	586.60	11.68	4.43	144.53	187.29
3322.000	1.00	0.0	0.0	579.20	720.00	587.00	0.0	587.32	11.29	4.52	159.24	214.31
3322.000	1.00	0.0	0.0	579.20	880.00	587.97	0.0	588.34	12.13	4.90	179.55	252.70
3400.000	65.00	0.0	0.0	579.70	480.00	585.06	0.0	585.23	7.68	3.37	142.28	173.15
3400.000	65.00	0.0	0.0	579.70	640.00	586.50	0.0	586.67	5.81	3.32	192.60	265.42
3400.000	65.00	0.0	0.0	579.70	720.00	587.21	0.0	587.38	5.11	3.28	219.42	318.38
3400.000	65.00	0.0	0.0	579.70	880.00	588.24	0.0	588.40	4.27	3.32	301.45	425.67
3600.000	200.00	0.0	0.0	579.90	480.00	585.21	0.0	585.39	7.93	3.41	140.72	170.47
3600.000	200.00	0.0	0.0	579.90	640.00	586.61	0.0	586.79	6.09	3.38	189.48	259.42
3600.000	200.00	0.0	0.0	579.90	720.00	587.31	0.0	587.49	5.37	3.34	215.62	310.73
3600.000	200.00	0.0	0.0	579.90	880.00	588.32	0.0	588.50	4.61	3.40	285.11	410.00
3750.000	145.00	0.0	0.0	579.00	290.00	585.41	0.0	585.46	1.50	1.66	180.15	236.41
3750.000	145.00	0.0	0.0	579.00	400.00	586.80	0.0	586.84	1.19	1.73	258.42	368.15
3750.000	145.00	0.0	0.0	579.00	435.00	587.49	0.0	587.53	0.94	1.65	303.92	448.67
3750.000	145.00	0.0	0.0	579.00	560.00	588.49	0.0	588.54	0.92	1.79	376.74	583.24

SECND	XLCH	ELTRD	ELLC	ELTIN	C	CMSEL	CRINS	EG	IDK*S	VCH	AREA	.01K
3800.000	455.00	0.0	0.0	580.60	290.00	585.45	0.0	585.60	6.43	3.00	122.20	114.37
3800.000	455.00	0.0	0.0	580.60	400.00	586.85	0.0	586.95	3.69	2.74	190.66	208.15
3800.000	455.00	0.0	0.0	580.60	435.00	587.53	0.0	587.61	2.73	2.54	224.78	263.45
3800.000	455.00	0.0	0.0	580.60	560.00	588.53	0.0	588.62	2.52	2.70	274.57	352.74
3850.000	100.00	0.0	0.0	580.60	290.00	585.51	0.0	585.75	14.08	3.95	73.48	77.30
3850.000	100.00	0.0	0.0	580.60	400.00	586.82	0.0	587.10	12.77	4.18	95.67	111.93
3850.000	100.00	0.0	0.0	580.60	435.00	587.49	0.0	587.75	11.10	4.06	107.03	130.53
3850.000	100.00	0.0	0.0	580.60	560.00	588.46	0.0	588.73	11.99	4.50	132.18	161.70
3851.000	5.00	588.10	589.80	580.60	290.00	585.52	0.0	585.76	14.10	3.95	73.44	77.24
3851.000	5.00	588.10	589.80	580.60	400.00	586.83	0.0	587.10	12.75	4.18	95.73	112.03
3851.000	5.00	588.10	589.80	580.60	435.00	587.48	0.0	587.78	26.76	4.41	93.65	84.09
3851.000	5.00	588.10	589.80	580.60	560.00	588.41	0.0	588.86	59.89	5.42	103.01	72.36
3852.000	25.00	588.10	589.80	580.60	290.00	585.56	0.0	585.80	13.76	3.92	74.07	78.19
3852.000	25.00	588.10	589.80	580.60	400.00	586.87	0.0	587.13	12.53	4.15	96.31	112.90
3852.000	25.00	588.10	589.80	580.60	435.00	587.55	0.0	587.85	26.76	4.41	93.65	84.09
3852.000	25.00	588.10	589.80	580.60	560.00	588.64	0.0	589.01	43.96	5.03	126.45	80.03
3853.000	1.00	0.0	0.0	580.60	290.00	585.56	0.0	585.80	13.70	3.91	74.18	78.34
3853.000	1.00	0.0	0.0	580.60	400.00	586.87	0.0	587.14	12.50	4.15	96.40	113.13
3853.000	1.00	0.0	0.0	580.60	435.00	587.62	0.0	587.87	10.52	3.98	109.16	134.14
3853.000	1.00	0.0	0.0	580.60	560.00	588.80	0.0	589.05	9.63	4.15	164.65	180.47
3900.000	100.00	0.0	0.0	580.50	290.00	585.80	0.0	585.92	6.39	3.04	123.10	114.76
3900.000	100.00	0.0	0.0	580.50	400.00	587.15	0.0	587.25	3.30	2.78	193.83	205.31
3900.000	100.00	0.0	0.0	580.50	435.00	587.88	0.0	587.96	2.74	2.55	227.33	262.95
3900.000	100.00	0.0	0.0	580.50	560.00	589.06	0.0	589.15	2.33	2.62	285.33	367.03
4000.000	480.00	0.0	0.0	580.50	290.00	586.17	0.0	586.26	7.06	2.37	143.98	109.13
4000.000	480.00	0.0	0.0	580.50	400.00	587.39	0.0	587.45	3.88	2.10	259.71	203.11
4000.000	480.00	0.0	0.0	580.50	435.00	588.06	0.0	588.10	2.50	1.82	326.68	275.09
4000.000	480.00	0.0	0.0	580.50	560.00	589.22	0.0	589.26	1.74	1.71	442.77	424.84
5575.000	1470.00	0.0	0.0	581.70	290.00	587.28	0.0	587.38	8.21	2.53	118.19	101.18
5575.000	1470.00	0.0	0.0	581.70	400.00	588.14	0.0	588.25	7.72	2.75	156.21	143.93
5575.000	1470.00	0.0	0.0	581.70	435.00	588.59	0.0	588.69	6.49	2.67	178.46	170.81
5575.000	1470.00	0.0	0.0	581.70	560.00	589.60	0.0	589.71	5.45	2.75	229.15	239.77
5625.000	100.00	0.0	0.0	581.90	290.00	587.26	0.0	587.65	19.91	4.96	53.46	54.99
5625.000	100.00	0.0	0.0	581.90	400.00	588.05	0.0	588.59	22.97	5.89	67.93	83.46
5625.000	100.00	0.0	0.0	581.90	435.00	588.47	0.0	589.02	21.42	5.96	72.95	93.99
5625.000	100.00	0.0	0.0	581.90	560.00	589.67	0.0	589.76	4.91	3.22	285.35	252.83
5626.000	5.00	586.50	593.60	581.90	290.00	587.24	0.0	587.69	37.42	5.37	53.97	47.41
5626.000	5.00	586.50	593.60	581.90	400.00	587.99	0.0	588.68	61.29	6.66	60.06	51.09
5626.000	5.00	586.50	593.60	581.90	435.00	588.39	0.0	589.14	72.94	6.96	62.51	50.93
5626.000	5.00	586.50	593.60	581.90	560.00	589.56	0.0	589.73	15.19	2.84	210.50	143.63
5627.000	40.00	586.50	593.60	581.90	290.00	587.42	0.0	587.84	35.12	5.23	55.49	48.93
5627.000	40.00	586.50	593.60	581.90	400.00	588.29	0.0	588.94	61.45	6.45	61.99	51.03
5627.000	40.00	586.50	593.60	581.90	435.00	588.74	0.0	589.45	79.39	6.79	64.04	48.32
5627.000	40.00	586.50	593.60	581.90	560.00	589.28	0.0	590.43	133.64	3.62	64.98	47.56

SECND	XLCH	ELTRD	ELLC	ELTIN	Q	CISEL	CRIMS	EG	IOC*S	VCH	AREA	.01K
5628.000	5.00	0.0	0.0	581.90	290.00	587.54	0.0	587.88	15.59	4.70	61.75	71.19
5628.000	5.00	0.0	0.0	581.90	400.00	588.56	0.0	589.01	17.22	5.40	74.06	96.33
5628.000	5.00	0.0	0.0	581.90	435.00	589.09	0.0	589.55	15.45	5.41	80.46	110.67
5628.000	5.00	0.0	0.0	581.90	560.00	590.05	0.0	590.63	15.45	5.10	91.87	138.05
5675.000	100.00	0.0	0.0	581.60	290.00	587.95	0.0	588.04	4.44	2.31	133.69	137.58
5675.000	100.00	0.0	0.0	581.60	400.00	589.11	0.0	589.19	3.56	2.38	191.57	211.90
5675.000	100.00	0.0	0.0	581.60	435.00	589.65	0.0	589.72	2.97	2.30	210.24	252.29
5675.000	100.00	0.0	0.0	581.60	560.00	590.75	0.0	590.83	2.62	2.39	273.53	345.95
6075.000	1170.00	0.0	0.0	583.10	290.00	588.72	0.0	589.81	10.73	2.36	123.06	88.33
6075.000	1170.00	0.0	0.0	583.10	400.00	589.77	0.0	589.87	10.80	2.59	154.62	121.74
6075.000	1170.00	0.0	0.0	583.10	435.00	590.21	0.0	590.31	9.98	2.58	168.33	137.67
6075.000	1170.00	0.0	0.0	583.10	560.00	591.26	0.0	591.37	9.85	2.78	201.80	178.47
6125.000	100.00	0.0	0.0	582.80	290.00	588.79	0.0	588.97	15.47	3.44	84.35	73.73
6125.000	100.00	0.0	0.0	582.80	400.00	589.81	0.0	590.06	16.92	4.02	99.61	97.24
6125.000	100.00	0.0	0.0	582.80	435.00	590.24	0.0	590.50	16.28	4.11	105.96	107.80
6125.000	100.00	0.0	0.0	582.80	560.00	591.26	0.0	591.59	17.23	4.62	121.23	134.91
6126.000	5.00	593.10	596.00	582.80	290.00	588.79	0.0	588.99	11.93	3.54	81.81	83.96
6126.000	5.00	593.10	596.00	582.80	400.00	589.80	0.0	590.09	17.33	4.28	93.51	96.08
6126.000	5.00	593.10	596.00	582.80	435.00	590.22	0.0	590.53	19.31	4.47	97.23	98.99
6126.000	5.00	593.10	596.00	582.80	560.00	591.19	0.0	591.65	34.80	5.44	102.98	94.92
6127.000	50.00	593.10	596.00	582.80	290.00	588.85	0.0	589.05	11.66	3.51	82.59	94.91
6127.000	50.00	593.10	596.00	582.80	400.00	589.89	0.0	590.17	17.11	4.24	94.26	96.70
6127.000	50.00	593.10	596.00	582.80	435.00	590.32	0.0	590.62	19.10	4.43	98.09	99.54
6127.000	50.00	593.10	596.00	582.80	560.00	591.37	0.0	591.73	36.89	5.43	103.20	92.20
6128.000	5.00	0.0	0.0	582.80	290.00	588.88	0.0	589.05	14.85	3.40	85.41	75.26
6128.000	5.00	0.0	0.0	582.80	400.00	589.95	0.0	590.19	15.93	3.74	101.62	100.55
6128.000	5.00	0.0	0.0	582.80	435.00	590.39	0.0	590.64	15.14	4.02	109.29	111.78
6128.000	5.00	0.0	0.0	582.80	560.00	591.56	0.0	591.97	15.21	4.45	125.35	143.59
6175.000	100.00	0.0	0.0	583.00	290.00	589.11	0.0	589.15	3.42	1.47	197.36	156.71
6175.000	100.00	0.0	0.0	583.00	400.00	590.25	0.0	590.29	3.46	1.63	245.38	215.01
6175.000	100.00	0.0	0.0	583.00	435.00	590.70	0.0	590.75	3.27	1.64	266.01	240.54
6175.000	100.00	0.0	0.0	583.00	560.00	591.93	0.0	591.98	3.08	1.74	322.33	318.90
7050.000	795.00	0.0	0.0	584.00	290.00	589.68	0.0	589.78	30.54	2.43	119.41	52.39
7050.000	795.00	0.0	0.0	584.00	400.00	590.31	0.0	590.90	26.34	2.50	160.28	77.94
7050.000	795.00	0.0	0.0	584.00	435.00	591.22	0.0	591.31	23.69	2.46	177.21	89.37
7050.000	795.00	0.0	0.0	584.00	560.00	592.38	0.0	592.46	15.23	2.26	261.50	143.50
8125.000	1030.00	0.0	0.0	585.40	290.00	592.25	0.0	592.33	20.41	2.24	129.70	64.20
8125.000	1030.00	0.0	0.0	585.40	400.00	593.15	0.0	593.24	19.79	2.45	175.27	89.95
8125.000	1030.00	0.0	0.0	585.40	435.00	593.39	0.0	593.47	18.69	2.45	193.05	100.63
8125.000	1030.00	0.0	0.0	585.40	560.00	594.03	0.0	594.12	17.08	2.51	240.74	135.51
8175.000	100.00	0.0	0.0	584.90	290.00	592.40	0.0	592.45	8.70	1.93	143.12	98.32
8175.000	100.00	0.0	0.0	584.90	400.00	593.30	0.0	593.36	7.20	1.91	211.79	149.07
8175.000	100.00	0.0	0.0	584.90	435.00	593.53	0.0	593.59	6.93	1.91	231.43	165.27
8175.000	100.00	0.0	0.0	584.90	560.00	594.16	0.0	594.22	6.43	1.93	291.02	220.73

SECNO	XLCH	ELTRO	ELLC	ELMIN	P	CMSEL	CRINS	EG	10K*S	VCH	AREA	.01K
8176.000	44.00	594.70	591.50	584.90	290.00	593.56	0.0	593.59	2.94	1.25	230.49	169.02
8176.000	44.00	594.70	591.50	584.90	400.00	595.06	0.0	595.09	1.75	1.07	342.40	302.02
8176.000	44.00	594.70	591.50	584.90	435.00	595.20	0.0	595.23	1.93	1.12	353.30	316.94
8176.000	44.00	594.70	591.50	584.90	560.00	595.60	0.0	595.63	2.43	1.31	382.81	358.92
8225.000	100.00	0.0	0.0	585.00	250.00	593.60	0.0	593.61	1.78	0.87	301.01	187.45
8225.000	100.00	0.0	0.0	585.00	340.00	595.08	0.0	595.09	1.21	0.32	412.00	309.57
8225.000	100.00	0.0	0.0	585.00	375.00	595.23	0.0	595.24	1.35	0.38	422.92	323.00
8225.000	100.00	0.0	0.0	585.00	460.00	595.64	0.0	595.65	1.52	0.99	453.02	361.17
9850.000	1500.00	0.0	0.0	586.70	250.00	594.08	0.0	594.12	3.15	1.56	161.62	37.55
9880.000	1500.00	0.0	0.0	586.70	340.00	595.34	0.0	595.35	2.58	1.03	399.90	211.61
9880.000	1500.00	0.0	0.0	586.70	375.00	595.50	0.0	595.51	2.51	1.04	431.27	236.79
9880.000	1500.00	0.0	0.0	586.70	460.00	595.92	0.0	595.93	2.18	1.01	517.05	311.38
9930.000	100.00	0.0	0.0	587.30	250.00	594.09	0.0	594.32	32.67	3.89	64.29	43.74
9930.000	100.00	0.0	0.0	587.30	340.00	595.36	0.0	595.39	4.07	1.55	236.21	158.45
9930.000	100.00	0.0	0.0	587.30	375.00	595.52	0.0	595.55	4.20	1.59	252.42	132.89
9930.000	100.00	0.0	0.0	587.30	460.00	595.93	0.0	595.97	4.22	1.65	294.39	224.00
9931.000	5.00	594.30	597.10	587.30	250.00	594.00	0.0	594.39	51.03	5.04	49.60	35.00
9931.000	5.00	594.30	597.10	587.30	340.00	595.30	0.0	595.42	23.20	3.28	133.23	64.02
9931.000	5.00	594.30	597.10	587.30	375.00	595.47	0.0	595.55	24.39	3.12	150.19	75.93
9931.000	5.00	594.30	597.10	587.30	460.00	595.90	0.0	595.99	17.13	2.74	193.07	111.16
9932.000	45.00	594.30	597.10	587.30	250.00	594.23	0.0	594.62	51.03	5.04	49.60	35.00
9932.000	45.00	594.30	597.10	587.30	340.00	595.44	0.0	595.53	21.32	2.90	147.06	73.64
9932.000	45.00	594.30	597.10	587.30	375.00	595.59	0.0	595.68	19.52	2.82	161.94	84.83
9932.000	45.00	594.30	597.10	587.30	460.00	595.98	0.0	596.05	15.26	2.59	201.13	118.53
9933.000	5.00	0.0	0.0	587.30	250.00	594.62	0.0	594.66	3.08	1.96	162.24	142.34
9933.000	5.00	0.0	0.0	587.30	340.00	595.50	0.0	595.54	2.49	1.91	250.99	215.43
9933.000	5.00	0.0	0.0	587.30	375.00	595.65	0.0	595.69	2.66	2.00	265.20	229.73
9933.000	5.00	0.0	0.0	587.30	460.00	596.02	0.0	596.07	2.88	2.14	303.09	270.83
9980.000	100.00	0.0	0.0	587.30	250.00	594.56	0.0	594.69	2.86	1.45	190.32	147.81
9980.000	100.00	0.0	0.0	587.30	340.00	595.34	0.0	595.56	1.77	1.28	365.13	255.51
9980.000	100.00	0.0	0.0	587.30	375.00	595.69	0.0	595.71	1.80	1.32	394.28	279.50
9980.000	100.00	0.0	0.0	587.30	460.00	596.07	0.0	596.09	1.73	1.35	471.23	349.76
10800.000	660.00	0.0	0.0	587.80	250.00	594.34	0.0	594.36	2.30	1.30	229.10	164.80
10800.000	660.00	0.0	0.0	587.80	340.00	595.65	0.0	595.67	1.54	1.18	324.71	274.01
10800.000	660.00	0.0	0.0	587.80	375.00	595.80	0.0	595.82	1.59	1.23	342.41	297.20
10800.000	660.00	0.0	0.0	587.80	460.00	596.18	0.0	596.20	1.52	1.29	389.08	361.16
10850.000	100.00	0.0	0.0	588.40	250.00	594.86	0.0	594.90	3.75	1.61	155.49	129.04
10850.000	100.00	0.0	0.0	588.40	340.00	595.66	0.0	595.71	4.35	1.87	181.76	162.97
10850.000	100.00	0.0	0.0	588.40	375.00	595.80	0.0	595.86	4.90	2.01	186.59	169.45
10850.000	100.00	0.0	0.0	588.40	460.00	596.17	0.0	596.26	6.13	2.32	198.60	135.82
10851.000	1.00	600.30	596.40	588.40	250.00	594.86	0.0	594.90	3.77	1.61	155.23	128.72
10851.000	1.00	600.30	596.40	588.40	340.00	595.66	0.0	595.71	4.37	1.87	181.53	162.67
10851.000	1.00	600.30	596.40	588.40	375.00	595.80	0.0	595.86	4.92	2.01	185.32	169.09
10851.000	1.00	600.30	596.40	588.40	460.00	596.17	0.0	596.26	6.13	2.32	199.60	185.82

SECND	KLCH	ELTRC	ELLC	ELMIN	Q	CWSEL	CRIWS	EB	ICKWS	VCH	AREA	.01K
10852.000	12.00	600.30	596.40	588.40	250.00	594.86	0.0	594.90	3.76	1.61	155.38	128.90
10852.000	12.00	600.30	596.40	588.40	340.00	595.66	0.0	595.72	4.36	1.87	181.70	162.90
10852.000	12.00	600.30	596.40	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.52	169.35
10852.000	12.00	600.30	596.40	588.40	460.00	596.18	0.0	596.26	6.11	2.31	197.85	186.16
10853.000	1.00	0.0	0.0	588.40	250.00	594.86	0.0	594.90	3.76	1.61	155.39	128.91
10853.000	1.00	0.0	0.0	588.40	340.00	595.66	0.0	595.72	4.36	1.87	181.72	162.92
10853.000	1.00	0.0	0.0	588.40	375.00	595.81	0.0	595.87	4.90	2.01	186.53	169.37
10853.000	1.00	0.0	0.0	588.40	460.00	596.18	0.0	596.26	6.10	2.31	198.38	186.20
10900.000	100.00	0.0	0.0	587.90	250.00	594.90	0.0	594.95	4.56	1.82	145.36	117.07
10900.000	100.00	0.0	0.0	587.90	340.00	595.70	0.0	595.76	4.23	1.95	185.55	165.25
10900.000	100.00	0.0	0.0	587.90	375.00	595.86	0.0	595.92	4.57	2.06	193.13	175.35
10900.000	100.00	0.0	0.0	587.90	460.00	596.25	0.0	596.32	5.17	2.29	212.43	202.34
11150.000	195.00	0.0	0.0	588.20	250.00	595.00	0.0	595.04	4.36	1.72	163.19	119.79
11150.000	195.00	0.0	0.0	588.20	340.00	595.80	0.0	595.83	2.75	1.53	265.54	204.91
11150.000	195.00	0.0	0.0	588.20	375.00	595.96	0.0	595.99	2.71	1.55	289.13	227.83
11150.000	195.00	0.0	0.0	588.20	460.00	596.37	0.0	596.40	2.47	1.55	346.11	292.83
12150.000	1060.00	0.0	0.0	589.50	250.00	595.63	0.0	595.71	9.75	2.35	115.35	80.04
12150.000	1060.00	0.0	0.0	589.50	340.00	596.24	0.0	596.33	8.90	2.44	153.92	113.95
12150.000	1060.00	0.0	0.0	589.50	375.00	596.40	0.0	596.49	9.02	2.52	166.06	124.84
12150.000	1060.00	0.0	0.0	589.50	460.00	596.77	0.0	596.86	8.77	2.62	201.78	155.33
13225.000	905.00	0.0	0.0	590.30	250.00	597.21	0.0	597.32	40.98	2.67	93.71	39.05
13225.000	905.00	0.0	0.0	590.30	340.00	597.80	0.0	597.95	50.99	3.13	108.68	47.61
13225.000	905.00	0.0	0.0	590.30	375.00	598.00	0.0	598.16	54.76	3.29	113.86	50.68
13225.000	905.00	0.0	0.0	590.30	460.00	598.38	0.0	598.59	63.52	3.68	127.65	57.72
13275.000	100.00	0.0	0.0	590.70	250.00	597.62	0.0	597.75	44.82	2.85	87.87	37.34
13275.000	100.00	0.0	0.0	590.70	340.00	598.34	0.0	598.53	62.05	3.50	97.12	43.16
13275.000	100.00	0.0	0.0	590.70	375.00	598.57	0.0	598.79	67.99	3.74	100.22	45.43
13275.000	100.00	0.0	0.0	590.70	460.00	599.05	0.0	599.34	83.69	4.32	106.44	50.23
13276.000	40.00	599.20	596.80	590.70	250.00	597.95	0.0	598.07	39.58	2.71	92.15	39.74
13276.000	40.00	599.20	596.80	590.70	340.00	599.00	0.0	599.16	46.79	3.22	105.71	49.71
13276.000	40.00	599.20	596.80	590.70	375.00	599.36	0.0	599.43	17.90	2.05	184.40	38.63
13276.000	40.00	599.20	596.80	590.70	460.00	599.81	0.0	599.88	15.54	1.97	217.58	116.69
13325.000	55.00	0.0	0.0	590.70	250.00	598.14	0.0	598.16	7.25	1.30	199.93	92.82
13325.000	55.00	0.0	0.0	590.70	340.00	599.21	0.0	599.23	3.25	1.00	307.04	188.61
13325.000	55.00	0.0	0.0	590.70	375.00	599.45	0.0	599.47	3.06	0.99	331.02	214.43
13325.000	55.00	0.0	0.0	590.70	460.00	599.89	0.0	599.92	2.99	1.03	375.36	266.07
13700.000	280.00	0.0	0.0	591.50	250.00	593.25	0.0	593.26	2.01	0.32	316.31	176.39
13700.000	280.00	0.0	0.0	591.50	340.00	593.27	0.0	593.27	0.96	0.61	494.93	365.62
13700.000	280.00	0.0	0.0	591.50	375.00	593.50	0.0	593.51	0.80	0.61	536.87	419.81
13700.000	280.00	0.0	0.0	591.50	460.00	593.95	0.0	593.96	0.76	0.62	614.72	529.35
13750.000	100.00	0.0	0.0	590.30	250.00	593.26	0.0	593.28	1.62	0.91	229.32	176.70
13750.000	100.00	0.0	0.0	590.30	340.00	593.27	0.0	593.29	0.82	0.71	423.02	374.79
13750.000	100.00	0.0	0.0	590.30	375.00	593.51	0.0	593.52	0.75	0.69	470.48	431.67
13750.000	100.00	0.0	0.0	590.30	460.00	593.95	0.0	593.96	0.70	0.69	559.28	550.64

SECND	XLCH	ELTRD	ELLC	EL IN	D	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
13751.000	1.00	598.50	598.30	590.30	250.00	598.15	0.0	599.33	113.35	3.41	72.98	23.48
13751.000	1.00	590.50	598.30	590.30	340.00	599.24	0.0	599.29	13.85	1.04	205.66	91.38
13751.000	1.00	598.50	598.30	590.30	375.00	599.49	0.0	599.53	3.65	0.84	254.64	127.51
13751.000	1.00	598.50	598.30	590.30	460.00	599.94	0.0	599.97	4.73	0.66	346.24	211.55
13752.000	100.00	598.50	598.30	590.30	250.00	598.79	0.0	598.88	31.35	1.48	115.55	44.65
13752.000	100.00	598.50	598.30	590.30	340.00	599.37	0.0	599.41	9.68	0.58	231.03	109.26
13752.000	100.00	598.50	598.30	590.30	375.00	599.57	0.0	599.61	7.04	0.77	271.33	141.29
13752.000	100.00	598.50	598.30	590.30	460.00	599.99	0.0	600.02	4.46	0.64	352.22	217.72
13753.000	1.00	0.0	0.0	590.30	250.00	590.98	0.0	593.89	0.74	0.65	342.99	290.53
13753.000	1.00	0.0	0.0	590.30	340.00	599.40	0.0	599.41	0.71	0.66	448.07	404.20
13753.000	1.00	0.0	0.0	590.30	375.00	599.50	0.0	599.61	0.69	0.66	487.13	452.76
13753.000	1.00	0.0	0.0	590.30	460.00	600.01	0.0	600.02	0.66	0.67	563.37	564.42
13800.000	100.00	0.0	0.0	591.40	250.00	590.39	0.0	592.90	3.48	1.10	265.61	133.94
13800.000	100.00	0.0	0.0	591.40	340.00	599.41	0.0	599.43	2.41	0.97	370.59	219.20
13800.000	100.00	0.0	0.0	591.40	375.00	599.61	0.0	599.62	2.12	0.93	409.75	257.57
13800.000	100.00	0.0	0.0	591.40	460.00	600.02	0.0	600.03	1.73	0.88	493.03	349.77
14850.000	1005.00	0.0	0.0	592.40	250.00	599.21	0.0	599.23	2.95	1.01	272.56	145.65
14850.000	1005.00	0.0	0.0	592.40	340.00	599.66	0.0	599.68	2.55	0.99	367.44	212.79
14850.000	1005.00	0.0	0.0	592.40	375.00	599.83	0.0	599.85	2.35	0.97	401.52	244.41
14850.000	1005.00	0.0	0.0	592.40	460.00	600.20	0.0	600.22	2.04	0.95	475.94	322.11
15800.000	310.00	0.0	0.0	593.20	250.00	599.71	0.0	599.79	25.89	2.25	111.11	48.21
15800.000	310.00	0.0	0.0	593.20	340.00	600.12	0.0	600.23	36.87	2.74	124.17	56.00
15800.000	310.00	0.0	0.0	593.20	375.00	600.26	0.0	600.39	40.47	2.91	129.16	58.95
15800.000	310.00	0.0	0.0	593.20	460.00	600.57	0.0	600.73	47.05	3.27	142.21	67.07
15850.000	100.00	0.0	0.0	592.60	250.00	599.94	0.0	600.19	39.04	3.98	62.75	40.54
15850.000	100.00	0.0	0.0	592.60	340.00	600.43	0.0	600.83	55.26	5.07	67.10	45.33
15850.000	100.00	0.0	0.0	592.60	375.00	600.59	0.0	601.06	63.68	5.47	69.57	46.99
15850.000	100.00	0.0	0.0	592.60	460.00	600.94	0.0	601.58	82.53	6.41	71.71	50.64
15851.000	60.00	601.70	598.30	592.60	250.00	600.34	0.0	600.86	392.84	5.75	43.45	12.61
15851.000	60.00	601.70	598.30	592.60	340.00	601.76	0.0	602.05	32.47	4.30	79.13	59.67
15851.000	60.00	601.70	598.30	592.60	375.00	601.85	0.0	602.20	38.17	4.69	79.94	60.69
15851.000	60.00	601.70	598.30	592.60	460.00	602.00	0.0	602.50	54.33	5.66	81.29	62.41
15900.000	100.00	0.0	0.0	593.30	250.00	601.13	0.0	601.16	4.69	1.25	202.40	115.39
15900.000	100.00	0.0	0.0	593.30	340.00	602.20	0.0	602.22	4.52	1.37	254.91	159.89
15900.000	100.00	0.0	0.0	593.30	375.00	602.36	0.0	602.40	5.01	1.47	263.00	167.57
15900.000	100.00	0.0	0.0	593.30	460.00	602.73	0.0	602.77	6.14	1.69	281.41	185.71
17030.000	1140.00	0.0	0.0	594.50	250.00	601.73	0.0	601.76	6.00	1.34	209.50	102.02
17030.000	1140.00	0.0	0.0	594.50	340.00	602.64	0.0	602.65	3.14	1.06	387.98	192.02
17030.000	1140.00	0.0	0.0	594.50	375.00	602.82	0.0	602.83	2.95	1.05	426.89	218.26
17030.000	1140.00	0.0	0.0	594.50	460.00	603.20	0.0	603.21	2.61	1.02	513.26	284.75
18100.000	865.00	0.0	0.0	595.70	250.00	602.27	0.0	602.30	6.43	1.26	199.54	98.62
18100.000	865.00	0.0	0.0	595.70	340.00	603.01	0.0	603.05	7.04	1.45	237.14	128.14
18100.000	865.00	0.0	0.0	595.70	375.00	603.19	0.0	603.22	7.64	1.54	246.31	135.63
18100.000	865.00	0.0	0.0	595.70	460.00	603.56	0.0	603.60	9.04	1.75	267.26	152.99

SECND	XLCH	ELTRD	ELLC	ELTIN	Q	CWSEL	CRIMS	FG	10(*S	VCH	AREA	.01K
18150.000	95.00	0.0	0.0	595.10	250.00	602.28	0.0	602.54	45.51	4.06	61.55	37.06
18150.000	95.00	0.0	0.0	595.10	340.00	602.99	0.0	603.38	65.14	5.01	67.83	41.81
18150.000	95.00	0.0	0.0	595.10	375.00	603.15	0.0	603.60	75.44	5.41	69.32	42.89
18150.000	95.00	0.0	0.0	595.10	460.00	603.47	0.0	604.10	104.01	6.37	72.24	45.10
18151.000	5.00	602.70	605.10	595.10	250.00	602.14	0.0	602.74	89.64	6.23	40.15	26.41
18151.000	5.00	602.70	605.10	595.10	340.00	602.68	0.0	603.79	165.79	3.47	40.15	26.41
18151.000	5.00	602.70	605.10	595.10	375.00	602.75	0.0	604.11	201.69	9.34	40.15	26.41
18151.000	5.00	602.70	605.10	595.10	460.00	602.85	0.0	604.89	303.48	11.45	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	250.00	602.64	0.0	603.24	89.64	6.23	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	340.00	603.59	0.0	604.70	165.79	3.47	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	375.00	603.86	0.0	605.22	201.69	9.34	40.15	26.41
18152.000	55.00	602.70	605.10	595.10	460.00	605.30	0.0	605.57	230.67	9.02	50.98	30.29
18153.000	5.00	0.0	0.0	595.10	250.00	603.17	0.0	603.37	13.80	3.59	69.55	67.29
18153.000	5.00	0.0	0.0	595.10	340.00	604.72	0.0	604.98	16.39	4.07	83.54	83.97
18153.000	5.00	0.0	0.0	595.10	375.00	605.28	0.0	605.56	17.37	4.24	88.54	89.99
18153.000	5.00	0.0	0.0	595.10	460.00	606.54	0.0	606.87	19.63	4.60	99.96	103.82
18210.000	45.00	0.0	0.0	594.90	250.00	603.40	0.0	603.44	1.48	1.61	167.51	205.60
18210.000	45.00	0.0	0.0	594.90	340.00	605.02	0.0	605.05	1.02	1.57	245.35	337.43
18210.000	45.00	0.0	0.0	594.90	375.00	605.61	0.0	605.65	0.91	1.56	277.95	393.95
18210.000	45.00	0.0	0.0	594.90	460.00	606.94	0.0	606.97	0.74	1.57	344.18	533.25
18700.000	370.00	0.0	0.0	595.50	250.00	603.45	0.0	603.49	1.32	1.48	169.30	217.50
18700.000	370.00	0.0	0.0	595.50	340.00	605.06	0.0	605.10	1.13	1.54	220.73	313.50
18700.000	370.00	0.0	0.0	595.50	375.00	605.65	0.0	605.68	1.12	1.56	240.14	354.10
18700.000	370.00	0.0	0.0	595.50	460.00	606.96	0.0	607.00	1.05	1.62	283.61	448.87
18750.000	60.00	0.0	0.0	595.80	250.00	603.32	0.0	603.56	28.90	4.66	53.62	46.51
18750.000	60.00	0.0	0.0	595.80	340.00	604.89	0.0	605.31	33.53	5.22	65.19	58.71
18750.000	60.00	0.0	0.0	595.80	375.00	605.46	0.0	605.91	35.18	5.40	69.42	63.22
18750.000	60.00	0.0	0.0	595.80	460.00	606.74	0.0	607.27	39.30	5.83	73.90	73.37
18751.000	68.00	605.10	600.90	595.80	250.00	605.35	0.0	605.55	15.08	3.64	68.60	52.34
18751.000	68.00	605.10	600.90	595.80	340.00	606.41	0.0	606.72	23.09	4.45	76.47	70.76
18751.000	68.00	605.10	600.90	595.80	375.00	606.75	0.0	607.10	26.08	4.75	78.95	73.43
18751.000	68.00	605.10	600.90	595.80	460.00	607.48	0.0	607.94	33.67	5.45	84.38	79.29
18800.000	100.00	0.0	0.0	595.30	185.00	605.61	0.0	605.62	0.32	0.83	237.35	327.19
18800.000	100.00	0.0	0.0	595.30	225.00	606.31	0.0	606.82	0.25	0.83	297.03	446.05
18800.000	100.00	0.0	0.0	595.30	280.00	607.20	0.0	607.21	0.33	0.97	316.48	488.34
18800.000	100.00	0.0	0.0	595.30	350.00	608.07	0.0	608.09	0.35	1.08	360.20	589.05
19950.000	1005.00	0.0	0.0	596.40	185.00	605.65	0.0	605.65	0.27	0.72	326.10	358.26
19950.000	1005.00	0.0	0.0	596.40	225.00	606.83	0.0	606.84	0.14	0.60	509.93	594.53
19950.000	1005.00	0.0	0.0	596.40	280.00	607.23	0.0	607.23	0.16	0.67	571.31	689.91
19950.000	1005.00	0.0	0.0	596.40	350.00	608.11	0.0	608.11	0.14	0.67	707.09	926.30

KING DRAIN

SUMMARY PRINTOUT TABLE 150

	SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFK.S	TOP/ID	XLOH
	300.000	480.00	582.60	0.0	0.0	0.60	42.00	315.00
	300.000	640.00	583.50	0.90	0.0	1.50	42.00	315.00
	300.000	720.00	584.00	0.50	0.0	2.00	42.00	315.00
	300.000	880.00	584.80	0.80	0.0	2.80	42.00	315.00
	301.000	480.00	582.57	0.0	-0.02	0.0	42.00	1.00
	301.000	640.00	583.42	0.85	-0.08	0.0	42.00	1.00
	301.000	720.00	583.89	0.47	-0.11	0.0	42.00	1.00
	301.000	880.00	584.60	0.72	-0.20	0.0	42.00	1.00
	302.000	480.00	582.58	0.0	0.01	0.0	42.00	5.20
	302.000	640.00	583.43	0.85	0.01	0.0	42.00	5.20
	302.000	720.00	583.90	0.47	0.02	0.0	42.00	5.20
	302.000	880.00	584.63	0.73	0.03	0.0	42.00	5.20
	303.000	480.00	582.62	0.0	0.04	0.0	42.00	1.00
	303.000	640.00	583.56	0.94	0.12	0.0	42.00	1.00
	303.000	720.00	584.09	0.53	0.18	0.0	42.00	1.00
	303.000	880.00	584.95	0.87	0.32	0.0	42.00	1.00
	400.000	480.00	582.72	0.0	0.10	0.0	104.69	80.00
	400.000	640.00	583.67	0.96	0.12	0.0	105.00	80.00
	400.000	720.00	584.21	0.54	0.12	0.0	105.00	80.00
	400.000	880.00	585.09	0.88	0.14	0.0	105.00	80.00
	1120.000	480.00	582.81	0.0	0.09	0.0	47.43	720.00
	1120.000	640.00	583.73	0.92	0.06	0.0	48.16	720.00
	1120.000	720.00	584.25	0.52	0.04	0.0	48.57	720.00
	1120.000	880.00	585.12	0.86	0.03	0.0	49.00	720.00
	1200.000	480.00	582.83	0.0	0.02	0.0	40.10	90.00
	1200.000	640.00	583.74	0.91	0.01	0.0	41.13	90.00
	1200.000	720.00	584.25	0.51	0.00	0.0	41.72	90.00
	1200.000	880.00	585.11	0.86	-0.01	0.0	42.00	90.00
	1201.000	480.00	582.83	0.0	-0.00	0.0	40.09	1.00
	1201.000	640.00	583.69	0.86	-0.05	0.0	41.07	1.00
	1201.000	720.00	584.15	0.47	-0.10	0.0	41.60	1.00
*	1201.000	880.00	584.91	0.75	-0.20	0.0	42.00	1.00
	1202.000	480.00	582.83	0.0	0.01	0.0	40.09	5.00
	1202.000	640.00	583.71	0.87	0.02	0.0	41.09	5.00
	1202.000	720.00	584.18	0.47	0.02	0.0	41.63	5.00
*	1202.000	880.00	584.94	0.76	0.03	0.0	42.00	5.00
	1203.000	480.00	582.84	0.0	0.01	0.0	40.10	1.00
	1203.000	640.00	583.80	0.95	0.09	0.0	41.20	1.00
	1203.000	720.00	584.35	0.55	0.17	0.0	41.83	1.00
	1203.000	880.00	585.28	0.93	0.34	0.0	42.00	1.00
	1300.000	480.00	583.01	0.0	0.16	0.0	44.49	85.00
	1300.000	640.00	583.94	0.93	0.14	0.0	44.72	85.00
	1300.000	720.00	584.48	0.54	0.13	0.0	44.85	85.00
	1300.000	880.00	585.40	0.92	0.12	0.0	45.00	85.00

SECND	Q	CHSEL	DIFMSP	DIFUSX	DIFC S	TOP.ID	XLCH
2100.000	480.00	583.71	0.0	0.70	0.0	37.37	800.00
2100.000	640.00	584.54	0.83	0.60	0.0	37.79	800.00
2100.000	720.00	585.01	0.47	0.52	0.0	38.03	800.00
2100.000	880.00	585.86	0.85	0.45	0.0	38.46	800.00
2800.000	480.00	584.45	0.0	0.74	0.0	31.71	700.00
2800.000	640.00	585.28	0.83	0.75	0.0	33.23	700.00
2800.000	720.00	585.72	0.43	0.71	0.0	34.05	700.00
2800.000	880.00	586.53	0.81	0.67	0.0	35.54	700.00
2926.000	480.00	584.47	0.0	0.01	0.0	20.00	114.00
2926.000	640.00	585.28	0.82	-0.00	0.0	20.00	114.00
2926.000	720.00	585.70	0.42	-0.01	0.0	20.00	114.00
2926.000	880.00	586.49	0.79	-0.04	0.0	20.00	114.00
2927.000	480.00	584.49	0.0	0.02	0.0	20.00	25.00
2927.000	640.00	585.92	1.43	0.64	0.0	20.00	25.00
2927.000	720.00	586.52	0.60	0.82	0.0	20.00	25.00
2927.000	880.00	587.39	0.87	0.90	0.0	148.38	25.00
3319.000	480.00	584.33	0.0	0.34	0.0	21.00	359.00
3319.000	640.00	586.24	1.42	0.33	0.0	21.00	359.00
3319.000	720.00	586.85	0.61	0.33	0.0	21.00	359.00
3319.000	880.00	587.70	0.85	0.31	0.0	21.00	359.00
3320.000	480.00	584.83	0.0	0.00	0.0	21.00	1.00
3320.000	640.00	586.24	1.42	0.00	0.0	21.00	1.00
3320.000	720.00	586.82	0.53	-0.03	0.0	21.00	1.00
3320.000	880.00	587.59	0.77	-0.11	0.0	21.00	1.00
3321.000	480.00	584.89	0.0	0.06	0.0	21.00	42.00
3321.000	640.00	586.30	1.41	0.05	0.0	21.00	42.00
3321.000	720.00	586.94	0.64	0.11	0.0	21.00	42.00
3321.000	880.00	587.76	0.82	0.17	0.0	21.00	42.00
3322.000	480.00	584.89	0.0	0.00	0.0	21.00	1.00
3322.000	640.00	586.30	1.41	0.00	0.0	21.00	1.00
3322.000	720.00	587.00	0.70	0.06	0.0	21.00	1.00
3322.000	880.00	587.97	0.97	0.21	0.0	21.00	1.00
3400.000	480.00	585.06	0.0	0.17	0.0	33.13	65.00
3400.000	640.00	586.50	1.44	0.20	0.0	36.67	65.00
3400.000	720.00	587.21	0.72	0.21	0.0	38.42	65.00
3400.000	880.00	588.24	1.02	0.27	0.0	146.64	65.00
3600.000	480.00	585.21	0.0	0.15	0.0	33.02	200.00
3600.000	640.00	586.61	1.40	0.11	0.0	36.46	200.00
3600.000	720.00	587.31	0.70	0.10	0.0	38.17	200.00
3600.000	880.00	588.32	1.01	0.08	0.0	130.34	200.00
3750.000	290.00	585.41	0.0	0.20	0.0	50.54	145.00
3750.000	400.00	586.00	1.39	0.19	0.0	62.46	145.00
3750.000	435.00	587.49	0.70	0.18	0.0	68.44	145.00
3750.000	560.00	588.49	1.00	0.18	0.0	77.05	145.00

SECNO	Q	CASEL	DIFNSP	DIFUSX	DIFKUS	TOPWID	XLCH
3800.000	290.00	585.48	0.0	0.07	0.0	50.00	455.00
3800.000	400.00	586.65	1.37	0.05	0.0	50.00	455.00
3800.000	435.00	587.53	0.68	0.04	0.0	50.00	455.00
3800.000	560.00	588.53	1.20	0.03	0.0	50.00	455.00
3850.000	290.00	585.51	0.0	0.03	0.0	17.00	100.00
3850.000	400.00	586.82	1.31	-0.03	0.0	17.00	100.00
3850.000	435.00	587.49	0.67	-0.04	0.0	17.00	100.00
3850.000	560.00	588.46	0.97	-0.06	0.0	69.44	100.00
3851.000	290.00	585.52	0.0	0.01	0.0	17.00	5.00
3851.000	400.00	586.33	1.31	0.01	0.0	17.00	5.00
3851.000	435.00	587.48	0.65	-0.01	0.0	17.00	5.00
3851.000	560.00	588.41	0.93	-0.06	0.0	59.25	5.00
3852.000	290.00	585.56	0.0	0.04	0.0	17.00	25.00
3852.000	400.00	586.37	1.31	0.04	0.0	17.00	25.00
3852.000	435.00	587.55	0.68	0.07	0.0	17.00	25.00
3852.000	560.00	588.64	1.09	0.23	0.0	99.55	25.00
3853.000	290.00	585.56	0.0	0.00	0.0	17.00	1.00
3853.000	400.00	585.87	1.31	0.00	0.0	17.00	1.00
3853.000	435.00	587.62	0.75	0.07	0.0	17.00	1.00
3853.000	560.00	588.30	1.18	0.16	0.0	126.98	1.00
3900.000	290.00	585.30	0.0	0.24	0.0	50.00	100.00
3900.000	400.00	587.15	1.35	0.29	0.0	50.00	100.00
3900.000	435.00	587.86	0.73	0.27	0.0	50.00	100.00
3900.000	560.00	589.06	1.13	0.27	0.0	50.00	100.00
4000.000	290.00	586.17	0.0	0.37	0.0	70.75	480.00
4000.000	400.00	587.39	1.21	0.23	0.0	100.00	480.00
4000.000	435.00	588.06	0.67	0.17	0.0	100.00	480.00
4000.000	560.00	589.22	1.16	0.15	0.0	100.00	480.00
5575.000	290.00	587.28	0.0	1.11	0.0	38.45	1470.00
5575.000	400.00	588.14	0.86	0.75	0.0	50.00	1470.00
5575.000	435.00	588.59	0.44	0.53	0.0	50.00	1470.00
5575.000	560.00	589.60	1.01	0.38	0.0	50.00	1470.00
5625.000	290.00	587.26	0.0	-0.02	0.0	12.00	100.00
5625.000	400.00	588.05	0.79	-0.09	0.0	12.00	100.00
5625.000	435.00	588.47	0.42	-0.12	0.0	12.00	100.00
5625.000	560.00	589.57	1.20	0.07	0.0	149.90	100.00
5626.000	290.00	587.24	0.0	-0.02	0.0	12.00	5.00
5626.000	400.00	587.99	0.75	-0.06	0.0	12.00	5.00
5626.000	435.00	588.39	0.39	-0.08	0.0	12.00	5.00
5626.000	560.00	589.66	1.27	-0.01	0.0	149.64	5.00
5627.000	290.00	587.42	0.0	0.18	0.0	12.00	40.00
5627.000	400.00	588.29	0.87	0.30	0.0	12.00	40.00
5627.000	435.00	588.74	0.44	0.35	0.0	12.00	40.00
5627.000	560.00	589.28	0.54	-0.38	0.0	12.00	40.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLOB
5628.000	290.00	587.54	0.0	0.12	0.0	12.00	5.00
5628.000	400.00	588.56	1.02	0.27	0.0	12.00	5.00
5628.000	435.00	589.09	0.53	0.36	0.0	12.00	5.00
5628.000	560.00	590.05	0.95	0.77	0.0	12.00	5.00
5675.000	290.00	587.95	0.0	0.42	0.0	50.00	100.00
5675.000	400.00	589.11	1.16	0.55	0.0	50.00	100.00
5675.000	435.00	589.65	0.53	0.55	0.0	50.00	100.00
5675.000	560.00	590.75	1.11	0.70	0.0	50.00	100.00
6075.000	290.00	588.72	0.0	0.77	0.0	29.93	1170.00
6075.000	400.00	589.77	1.05	0.66	0.0	31.07	1170.00
6075.000	435.00	590.21	0.44	0.56	0.0	31.45	1170.00
6075.000	560.00	591.26	1.05	0.50	0.0	32.36	1170.00
6125.000	290.00	588.79	0.0	0.07	0.0	15.00	100.00
6125.000	400.00	589.81	1.02	0.05	0.0	15.00	100.00
6125.000	435.00	590.24	0.42	0.03	0.0	15.00	100.00
6125.000	560.00	591.26	1.02	0.00	0.0	15.00	100.00
6126.000	290.00	588.79	0.0	-0.00	0.0	15.00	5.00
6126.000	400.00	589.80	1.01	-0.01	0.0	15.00	5.00
6126.000	435.00	590.22	0.42	-0.02	0.0	15.00	5.00
6126.000	560.00	591.19	0.97	-0.06	0.0	15.00	5.00
6127.000	290.00	588.85	0.0	0.06	0.0	15.00	50.00
6127.000	400.00	589.89	1.04	0.09	0.0	15.00	50.00
6127.000	435.00	590.32	0.43	0.10	0.0	15.00	50.00
6127.000	560.00	591.37	1.05	0.18	0.0	15.00	50.00
6128.000	290.00	588.88	0.0	0.02	0.0	15.00	5.00
6128.000	400.00	589.95	1.07	0.05	0.0	15.00	5.00
6128.000	435.00	590.39	0.44	0.07	0.0	15.00	5.00
6128.000	560.00	591.56	1.17	0.19	0.0	15.00	5.00
6175.000	290.00	589.11	0.0	0.24	0.0	41.26	100.00
6175.000	400.00	590.25	1.14	0.30	0.0	43.93	100.00
6175.000	435.00	590.70	0.45	0.31	0.0	45.00	100.00
6175.000	560.00	591.93	1.23	0.37	0.0	46.00	100.00
7050.000	290.00	589.68	0.0	0.57	0.0	33.93	795.00
7050.000	400.00	590.81	1.12	0.55	0.0	38.90	795.00
7050.000	435.00	591.22	0.42	0.52	0.0	47.59	795.00
7050.000	560.00	592.38	1.16	0.45	0.0	100.00	795.00
8125.000	290.00	592.25	0.0	2.56	0.0	28.37	1030.00
8125.000	400.00	593.15	0.90	2.35	0.0	75.00	1030.00
8125.000	435.00	593.39	0.24	2.17	0.0	75.00	1030.00
8125.000	560.00	594.03	0.64	1.65	0.0	75.00	1030.00
8175.000	290.00	592.40	0.0	0.15	0.0	57.65	100.00
8175.000	400.00	593.30	0.91	0.15	0.0	83.00	100.00
8175.000	435.00	593.53	0.23	0.14	0.0	89.40	100.00
8175.000	560.00	594.16	0.63	0.13	0.0	95.00	100.00

SECND	Q	CUSEL	DIFUSP	DIFUSX	DIFKUS	TCPAID	KLCH
8176.000	290.00	593.56	0.0	1.17	0.0	75.00	44.00
8176.000	400.00	595.06	1.49	1.76	0.0	75.00	44.00
8176.000	435.00	595.20	0.14	1.67	0.0	75.00	44.00
8176.000	560.00	595.60	0.39	1.43	0.0	75.00	44.00
8225.000	250.00	593.50	0.0	0.04	0.0	75.00	100.00
8225.000	340.00	595.08	1.48	0.03	0.0	75.00	100.00
8225.000	375.00	595.23	0.15	0.03	0.0	75.00	100.00
8225.000	460.00	595.64	0.40	0.04	0.0	75.00	100.00
9880.000	250.00	594.02	0.0	0.48	0.0	80.19	1500.00
9880.000	340.00	595.34	1.26	0.25	0.0	200.00	1500.00
9880.000	375.00	595.50	0.16	0.27	0.0	200.00	1500.00
9880.000	460.00	595.92	0.42	0.28	0.0	200.00	1500.00
9930.000	250.00	594.09	0.0	0.01	0.0	10.00	100.00
9930.000	340.00	595.36	1.27	0.02	0.0	100.00	100.00
9930.000	375.00	595.52	0.16	0.02	0.0	100.00	100.00
9930.000	460.00	595.93	0.41	0.01	0.0	100.00	100.00
9931.000	250.00	594.00	0.0	-0.09	0.0	10.00	5.00
9931.000	340.00	595.30	1.30	-0.06	0.0	100.00	5.00
9931.000	375.00	595.47	0.17	-0.05	0.0	100.00	5.00
9931.000	460.00	595.90	0.43	-0.03	0.0	100.00	5.00
9932.000	250.00	594.23	0.0	0.23	0.0	35.28	45.00
9932.000	340.00	595.44	1.21	0.14	0.0	100.00	45.00
9932.000	375.00	595.59	0.15	0.12	0.0	100.00	45.00
9932.000	460.00	595.98	0.39	0.08	0.0	100.00	45.00
9933.000	250.00	594.62	0.0	0.39	0.0	100.00	5.00
9933.000	340.00	595.50	0.89	0.07	0.0	100.00	5.00
9933.000	375.00	595.65	0.14	0.06	0.0	100.00	5.00
9933.000	460.00	596.02	0.38	0.05	0.0	100.00	5.00
9980.000	250.00	594.66	0.0	0.04	0.0	151.35	100.00
9980.000	340.00	595.54	0.88	0.04	0.0	200.00	100.00
9980.000	375.00	595.69	0.15	0.04	0.0	200.00	100.00
9980.000	460.00	596.07	0.38	0.05	0.0	200.00	100.00
10800.000	250.00	594.84	0.0	0.18	0.0	120.00	560.00
10800.000	340.00	595.65	0.81	0.11	0.0	120.00	560.00
10800.000	375.00	595.80	0.15	0.11	0.0	120.00	560.00
10800.000	460.00	596.18	0.38	0.11	0.0	120.00	560.00
10850.000	250.00	594.86	0.0	0.02	0.0	33.00	100.00
10850.000	340.00	595.66	0.80	0.00	0.0	33.00	100.00
10850.000	375.00	595.80	0.15	0.0	0.0	33.00	100.00
10850.000	460.00	596.17	0.37	-0.01	0.0	33.00	100.00
10851.000	250.00	594.86	0.0	0.00	0.0	33.00	1.00
10851.000	340.00	595.66	0.80	0.00	0.0	33.00	1.00
10851.000	375.00	595.80	0.15	0.00	0.0	33.00	1.00
10851.000	460.00	596.17	0.37	0.00	0.0	33.00	1.00

SECND	Q	CWSEL	DIFWSP	DIF.SX	DIFKWS	TOPWID	KLOW
10852.000	250.00	594.86	0.0	0.00	0.0	33.00	12.00
10852.000	340.00	595.66	0.30	0.01	0.0	33.00	12.00
10852.000	375.00	595.81	0.15	0.01	0.0	33.00	12.00
10852.000	460.00	596.18	0.37	0.01	0.0	33.00	12.00
10853.000	250.00	594.86	0.0	0.00	0.0	33.00	1.00
10853.000	340.00	595.66	0.30	0.00	0.0	33.00	1.00
10853.000	375.00	595.81	0.15	0.00	0.0	33.00	1.00
10853.000	460.00	596.18	0.37	0.00	0.0	33.00	1.00
10900.000	250.00	594.90	0.0	0.04	0.0	50.00	100.00
10900.000	340.00	595.70	0.30	0.04	0.0	50.00	100.00
10900.000	375.00	595.86	0.15	0.05	0.0	50.00	100.00
10900.000	460.00	596.25	0.39	0.06	0.0	50.00	100.00
11150.000	250.00	595.00	0.0	0.10	0.0	95.21	195.00
11150.000	340.00	595.30	0.30	0.10	0.0	140.00	195.00
11150.000	375.00	595.96	0.16	0.10	0.0	140.00	195.00
11150.000	460.00	596.37	0.41	0.12	0.0	140.00	195.00
12150.000	250.00	595.63	0.0	0.63	0.0	61.42	1060.00
12150.000	340.00	596.24	0.61	0.44	0.0	72.08	1060.00
12150.000	375.00	596.40	0.16	0.44	0.0	83.03	1060.00
12150.000	460.00	596.77	0.37	0.40	0.0	109.07	1060.00
13225.000	250.00	597.21	0.0	1.58	0.0	24.11	905.00
13225.000	340.00	597.80	0.59	1.56	0.0	25.95	905.00
13225.000	375.00	598.00	0.20	1.60	0.0	26.43	905.00
13225.000	460.00	598.38	0.38	1.61	0.0	50.00	905.00
13275.000	250.00	597.62	0.0	0.42	0.0	13.00	100.00
13275.000	340.00	598.34	0.71	0.54	0.0	13.00	100.00
13275.000	375.00	598.57	0.24	0.58	0.0	13.00	100.00
13275.000	460.00	599.05	0.48	0.68	0.0	13.00	100.00
13276.000	250.00	597.95	0.0	0.33	0.0	13.00	40.00
13276.000	340.00	599.00	1.04	0.66	0.0	13.00	40.00
13276.000	375.00	599.36	0.37	0.79	0.0	75.00	40.00
13276.000	460.00	599.81	0.44	0.75	0.0	75.00	40.00
13325.000	250.00	598.14	0.0	0.19	0.0	100.00	55.00
13325.000	340.00	599.21	1.07	0.21	0.0	100.00	55.00
13325.000	375.00	599.45	0.24	0.09	0.0	100.00	55.00
13325.000	460.00	599.89	0.44	0.09	0.0	100.00	55.00
13700.000	250.00	598.25	0.0	0.11	0.0	175.00	280.00
13700.000	340.00	599.27	1.01	0.06	0.0	175.00	280.00
13700.000	375.00	599.50	0.24	0.05	0.0	175.00	280.00
13700.000	460.00	599.95	0.44	0.05	0.0	175.00	280.00
13750.000	250.00	598.26	0.0	0.01	0.0	154.20	100.00
13750.000	340.00	599.27	1.01	0.01	0.0	200.00	100.00
13750.000	375.00	599.51	0.24	0.01	0.0	200.00	100.00
13750.000	460.00	599.95	0.44	0.01	0.0	200.00	100.00

SECNO	Q	C.SEL	DIFISP	DIF.SX	DIFKUS	TOPWID	KLOW
13751.000	250.00	598.15	0.0	-0.11	0.0	142.53	1.00
13751.000	340.00	599.24	1.09	-0.03	0.0	200.00	1.00
13751.000	375.00	599.49	0.25	-0.02	0.0	200.00	1.00
13751.000	460.00	599.94	0.45	-0.01	0.0	200.00	1.00
13752.000	250.00	598.79	0.0	0.64	0.0	200.00	100.00
13752.000	340.00	599.37	0.58	0.13	0.0	200.00	100.00
13752.000	375.00	599.57	0.20	0.08	0.0	200.00	100.00
13752.000	460.00	599.99	0.41	0.05	0.0	200.00	100.00
13753.000	250.00	598.88	0.0	0.09	0.0	200.00	1.00
13753.000	340.00	599.40	0.52	0.03	0.0	200.00	1.00
13753.000	375.00	599.60	0.20	0.03	0.0	200.00	1.00
13753.000	460.00	600.01	0.41	0.02	0.0	200.00	1.00
13800.000	250.00	598.89	0.0	0.01	0.0	200.00	100.00
13800.000	340.00	599.41	0.53	0.01	0.0	200.00	100.00
13800.000	375.00	599.61	0.20	0.01	0.0	200.00	100.00
13800.000	460.00	600.02	0.41	0.01	0.0	200.00	100.00
14850.000	250.00	599.21	0.0	0.32	0.0	188.25	1005.00
14850.000	340.00	599.66	0.45	0.25	0.0	200.00	1005.00
14850.000	375.00	599.83	0.17	0.22	0.0	200.00	1005.00
14850.000	460.00	600.20	0.37	0.19	0.0	200.00	1005.00
15800.000	250.00	599.71	0.0	0.50	0.0	31.25	810.00
15800.000	340.00	600.12	0.41	0.46	0.0	32.93	810.00
15800.000	375.00	600.26	0.14	0.42	0.0	41.40	810.00
15800.000	460.00	600.57	0.31	0.36	0.0	44.37	810.00
15850.000	250.00	599.94	0.0	0.23	0.0	9.00	100.00
15850.000	340.00	600.43	0.48	0.31	0.0	9.00	100.00
15850.000	375.00	600.59	0.16	0.33	0.0	9.00	100.00
15850.000	460.00	600.94	0.35	0.37	0.0	9.00	100.00
15851.000	250.00	600.34	0.0	0.40	0.0	9.00	60.00
15851.000	340.00	601.76	1.42	1.34	0.0	9.00	60.00
15851.000	375.00	601.85	0.09	1.26	0.0	9.00	60.00
15851.000	460.00	602.00	0.15	1.06	0.0	9.00	60.00
15900.000	250.00	601.13	0.0	0.79	0.0	41.38	100.00
15900.000	340.00	602.20	1.06	0.43	0.0	50.00	100.00
15900.000	375.00	602.36	0.17	0.51	0.0	50.00	100.00
15900.000	460.00	602.73	0.37	0.73	0.0	50.00	100.00
17030.000	250.00	601.73	0.0	0.60	0.0	153.06	1140.00
17030.000	340.00	602.64	0.91	0.44	0.0	225.00	1140.00
17030.000	375.00	602.82	0.18	0.45	0.0	225.00	1140.00
17030.000	460.00	603.20	0.38	0.47	0.0	225.00	1140.00
18100.000	250.00	602.27	0.0	0.54	0.0	48.34	865.00
18100.000	340.00	603.01	0.74	0.38	0.0	52.38	865.00
18100.000	375.00	603.19	0.17	0.37	0.0	53.21	865.00
18100.000	460.00	603.56	0.37	0.36	0.0	67.57	865.00

SECND	Q	CHSEL	DIF.SP	DIF.SK	DIF.WS	TOPWID	XLCH
18150.000	250.00	602.28	0.0	0.01	0.0	9.00	95.00
18150.000	340.00	602.99	0.70	-0.03	0.0	9.00	95.00
18150.000	375.00	603.15	0.16	-0.04	0.0	9.00	95.00
18150.000	460.00	603.47	0.32	-0.09	0.0	9.00	95.00
18151.000	250.00	602.14	0.0	-0.14	0.0	9.00	5.00
18151.000	340.00	602.68	0.53	-0.31	0.0	9.00	5.00
18151.000	375.00	602.75	0.06	-0.39	0.0	9.00	5.00
18151.000	460.00	602.35	0.09	-0.62	0.0	9.00	5.00
18152.000	250.00	602.64	0.0	0.49	0.0	9.00	55.00
18152.000	340.00	603.59	0.95	0.91	0.0	9.00	55.00
18152.000	375.00	603.86	0.28	1.11	0.0	9.00	55.00
18152.000	460.00	605.30	1.44	2.45	0.0	9.00	55.00
18153.000	250.00	603.17	0.0	0.54	0.0	9.00	5.00
18153.000	340.00	604.72	1.55	1.13	0.0	9.00	5.00
18153.000	375.00	605.28	0.56	1.42	0.0	9.00	5.00
18153.000	460.00	606.54	1.26	1.24	0.0	9.00	5.00
18210.000	250.00	603.40	0.0	0.23	0.0	50.00	45.00
18210.000	340.00	605.02	1.62	0.30	0.0	50.00	45.00
18210.000	375.00	605.61	0.59	0.33	0.0	50.00	45.00
18210.000	460.00	606.94	1.32	0.39	0.0	50.00	45.00
18700.000	250.00	603.45	0.0	0.06	0.0	30.52	370.00
18700.000	340.00	605.06	1.61	0.04	0.0	33.00	370.00
18700.000	375.00	605.65	0.59	0.03	0.0	33.00	370.00
18700.000	460.00	606.96	1.32	0.03	0.0	33.00	370.00
18750.000	250.00	603.32	0.0	-0.13	0.0	7.40	60.00
18750.000	340.00	604.39	1.56	-0.17	0.0	7.40	60.00
18750.000	375.00	605.46	0.57	-0.19	0.0	7.40	60.00
18750.000	460.00	606.74	1.28	-0.22	0.0	7.40	60.00
18751.000	250.00	605.35	0.0	2.02	0.0	7.40	68.00
18751.000	340.00	606.41	1.06	1.52	0.0	7.40	68.00
18751.000	375.00	606.75	0.34	1.29	0.0	7.40	68.00
18751.000	460.00	607.48	0.73	0.74	0.0	7.40	68.00
18800.000	185.00	606.61	0.0	0.27	0.0	50.00	100.00
18800.000	225.00	606.81	1.19	0.40	0.0	50.00	100.00
18800.000	280.00	607.20	0.39	0.45	0.0	50.00	100.00
18800.000	350.00	608.07	0.87	0.59	0.0	50.00	100.00
19950.000	185.00	605.65	0.0	0.03	0.0	155.00	1005.00
19950.000	225.00	606.83	1.19	0.03	0.0	155.00	1005.00
19950.000	280.00	607.23	0.40	0.03	0.0	155.00	1005.00
19950.000	350.00	608.11	0.88	0.03	0.0	155.00	1005.00

SUMMARY OF ERRORS

CAUTION SECND 1201.000 PROFILE 4 BRIDGE DECK DEFINITION ERROR

CAUTION SECND 1202.000 PROFILE 4 BRIDGE DECK DEFINITION ERROR

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: LULL DRAIN

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

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*****************************************************
 HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         JSEL      FQ

      0.        6.        0.        0.  0.002400      0.0       0.0       0.   500.000     0.0

J2  NPROF     IPLOT     PREVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE

    15.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
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*PROF 2

CCHV    0.100 CEHV    0.300
*SECNO 130.000
   SECNO    DEPTH    CNSEL    CRIWS    ASELK    EG       WV       WL       QLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VCL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      TN       ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

        A 130 FT U/S FROM CONFLUENCE WITH KING DRAIN,BACKWATER OF SAGINAW 593.36

   130.00     5.79   586.19     0.0    600.00   586.50     0.30     0.0      0.0    587.00
     470.       0.     470.       0.       0.     107.       0.       0.       0.    587.40
      0.0      0.0     4.40      0.0    0.040    0.037    0.040     0.0    580.40   101.34
 0.002398     130.     130.     130.        0        0        9    -0.00    28.33   130.18

CCHV    0.300 CEHV    0.500
*SECNO 234.000

3470 ENCROACHMENT STATIONS      102.5     127.5  TYPE      1  TARGET      25.000

        B  FOOT BRIDGE, TR 536.5, LC 535.6

   234.00     5.33   586.43     0.0      0.0   586.75     0.32     0.25     0.01   586.50
     470.       0.     470.       0.       0.     103.       0.       0.       0. 100000.00
      0.01      0.0     4.55      0.0    0.040    0.037    0.040    0.037   580.60   102.50
 0.002394     103.     103.     103.        1        0        0    -0.00    25.00   127.50

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       DWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.54      2.50     25.00      8.00      0.0      82.50      2.00    580.60    580.60

*SECNO 235.000
3280 CROSS SECTION    235.00 EXTENDED     0.14 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLWC       HB       QWEIR      QPR       BAREA   TRAPEZOID      ELLC     ELTRD
                                                                AREA
   587.21    586.75     0.0        30.      439.       83.       90.      585.60    586.50

3470 ENCROACHMENT STATIONS      102.5     127.5  TYPE      1  TARGET      25.000
   235.00     6.24   586.84     0.0      0.0   587.11     0.27     0.36     0.0    586.50
     470.       0.     470.       0.       0.     114.       0.       0.       0. 100000.00
      0.01      0.0     4.14      0.0    0.040    0.037    0.040    0.036   580.60   102.50
 0.001816       5.       5.       5.        2        0        3    -0.00    25.00   127.50

*SECNO 350.000

        C

   350.00     6.29   587.09     0.0      0.0   587.32     0.23     0.20     0.01   590.00
     470.       0.     470.       0.       0.     122       0        1.       0     589.50
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    0.001     0.0     0.74     0.1     0.040    0.037    0.040    0.037   530.50    93.39
 0.001671    114.     1.4.    114.       0        0        0    -0.00    30.94   130.34

CCHV    0.100 CEHV    0.300
*SECNO 800.000
   SECNO     DEPTH     CLSEL     CRIT3     ASELK     EG        HV        PL        CLOSS    BANK ELEV
   Q         ALOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       ITN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

        0

   800.00     5.38    587.87      0.0       0.0    583.11      0.24      0.79      0.00    590.00
    470.       0.      470.       0.        0.      121.       0.        2.        0.     589.30
     0.05      0.0     3.87      0.0      0.040    0.037     0.040     0.037    582.00     96.52
 0.001854     450.     450.      450.       0        0        0     -0.00    33.11    131.63

CCHV    0.300 CEHV    0.500
*SECNO 901.000

3470 ENCROACHMENT STATIONS      100.0     142.0  TYPE      1  TARGET      42.000

     E. WILKINS ST CULVERT, TW 590.5, LC 587.7

     8.2X5.0 STRUCTURAL PLATE PIPE ARCH

   901.00     6.24    587.94      0.0       0.0    588.50      0.56      0.23      0.16    583.30
    470.      70.      325.      76.       20.       47.       22.       2.        1.     583.30
     0.05     3.45      6.87     3.48     0.040    0.037     0.040    0.037    531.90    106.04
 0.003653     90.      90.       90.        2        0        0     -0.00    28.68    134.72

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       SWP       BAREA     SS        ELCHU     ELCHD
    0.0       2.36      2.50     42.00      6.40      0.0      40.00      0.0     582.30    582.30

*SECNO 902.000
3280 CROSS SECTION    902.00 EXTENDED      0.52 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLAC      HB        CWEIR     QPR       BAREA   TRAPEZOID     ELLC      ELTRD
                                                             AREA
   593.00   588.78     0.0       32.       399.      40.       45.      587.70    590.50

3470 ENCROACHMENT STATIONS      100.0     142.0  TYPE      1  TARGET      42.000
   902.00     9.42    591.32      0.0       0.0    591.41      0.10      2.91      0.0    583.90
    470.     114.     232.     124.       56.       76.       72.       2.        1.     583.80
     0.05     1.74     3.05     1.73     0.040    0.037     0.040    0.037    531.90    100.00
 0.000380     31.      31.      31.        2        0        3     -0.00    42.00    142.00

*SECNO 1020.000
3280 CROSS SECTION   1020.00 EXTENDED      1.00 FEET
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3470 ENCROACHMENT STATIONS       100.0      142.0  TYPE       1  TARGET        42.000

        F

  1020.00      9.00    591.40      0.0       0.0     591.46      0.05      0.03      0.01    590.00
     470.        0.      470.       0.        0.      250.        0.        3.        1.  100000.00
     0.07       0.0      1.03      0.0     0.040     0.037     0.040     0.037    582.40    100.00
 0.000241      100.     100.      100.         2         0         0     -0.00     42.00    142.00

CCHV    0.100 CEHV    0.300
*SECNO 1870.000

3470 ENCROACHMENT STATIONS       112.0      132.0  TYPE       1  TARGET        20.000

        G

  1870.00      7.63    591.68      0.0     591.65    591.34      0.17      0.36      0.03100000.00
     470.        0.      470.       0.        0.      144.        0.        7.        1.  100000.00
     0.14       0.0      3.26      0.0     0.040     0.037     0.040     0.037    584.00    112.00
 0.000891      850.     850.      850.         1         0         0     -0.00     20.00    132.00

CCHV    0.300 CEHV    0.500
*SECNO 1997.000
   SECNO     DEPTH     CWSEL     CRIMS     WSELK     EG        HV        HL        DLOSS    BANK ELEV
   C         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    ICC       ICONT     CORAR     TOPWID     ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       595.00 ELREA       595.00

        H  WASHINGTON ST CULVERT, TR 595.8, LC 593.2

           14.3X8.9 STRUCTURAL PLATE PIPE ARCH

  1997.00      7.38    591.68      0.0     591.58    592.05      0.37      0.11      0.10    586.60
     470.        0.      470.       0.        0.       97.        0.        7.        1.    586.60
     0.15       0.0      4.86      0.0     0.040     0.037     0.040     0.037    584.30    113.00
 0.001303      100.     100.      100.         2         0         0     -0.00     14.00    127.00

*SECNO 1998.000

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   595.00 MAX ELLC   595.80

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       595.00 ELREA       595.00

  1996.00      7.31    591.61      0.0     591.51    592.14      0.53      0.01      0.08    586.60
     470.        0.      470.       0.        0.       81.        0.        7.        1.    586.60
     0.15       0.0      5.83      0.0     0.040     0.031     0.040     0.037    584.30    113.00
 0.003688        5.        5.        5.         2         0         0    -41.04     14.00    127.00

*SECNO 1999.000

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   595.00 MAX ELLC   595.80
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 595.80 ELREA 595.30

1999.00	7.49	591.79	0.0	591.69	592.30	0.51	0.16	0.00	586.50
470.	0.	470.	0.	0.	82.	0.	7.	1.	586.60
0.15	0.0	5.75	0.0	0.040	0.031	0.040	0.037	584.30	113.00
0.003603	43.	43.	43.	2	0	0	-44.23	14.00	127.00

*SECNO 2000.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 595.80 ELREA 595.30

2000.00	7.73	592.03	0.0	591.93	592.36	0.33	0.01	0.05	586.50
470.	0.	470.	0.	0.	102.	0.	7.	1.	586.60
0.15	0.0	4.63	0.0	0.040	0.027	0.040	0.037	584.30	113.00
0.000589	5.	5.	5.	2	0	0	-0.00	14.00	127.00

*SECNO 2125.000
3250 CROSS SECTION 2125.00 EXTENDED 0.89 FEET

3470 ENCROACHMENT STATIONS 160.0 208.7 TYPE 1 TARGET 49.700

I STATION 21+03-BEGIN RELOCATION

2125.00	8.19	592.39	0.0	592.30	592.47	0.09	0.04	0.07	594.50
470.	0.	470.	0.	0.	201.	0.	7.	1.	100000.00
0.16	0.0	2.34	0.0	0.040	0.027	0.040	0.036	584.20	164.31
0.000246	100.	100.	100.	2	0	0	-0.00	40.99	205.29

CCHV 0.100 CEHV 0.300
*SECNO 3000.000

SECNO	DEPTH	C'SEL	CRIMS	HSELK	EG	HV	HL	QLOSS	BANK ELEV.
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XML	XNCH	XCR	VTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	ICC	ICONT	CCRAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS 155.3 215.7 TYPE 1 TARGET 59.900

J

3000.00	8.01	592.61	0.0	592.53	592.70	0.09	0.23	0.07	597.20
470.	0.	470.	0.	0.	192.	0.	11.	2.	100000.00
0.26	0.0	2.45	0.0	0.040	0.027	0.040	0.033	584.60	164.98
0.000275	875.	875.	875.	2	0	0	-0.00	39.93	204.96

*SECNO 3800.000
3230 CROSS SECTION 3300.00 EXTENDED 0.33 FEET

3470 ENCROACHMENT STATIONS 166.0 203.5 TYPE 1 TARGET 37.500

K STATION 38+44-END RELOCATION

3800.00	7.73	592.63	0.0	592.77	592.94	0.10	0.23	0.00	592.50
470.	0.	470.	0.	0.	182.	0.	15.	3.	100000.00
0.35	0.0	2.53	0.0	0.040	0.027	0.040	0.032	585.10	166.00
0.000309	300.	300.	300.	1	0	0	-0.00	37.50	203.50

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*SECNO 3900.000

3470 ENCROACHMENT STATIONS        55.0      140.0  TYPE       1  TARGET        85.000

      L

  3900.00      7.58    592.03      0.0     592.82    592.97      0.03      0.03      0.00    590.90
     470.       45.      405.       19.       64.      165.       24.       15.        3.    590.40
     0.36      0.71      2.45      0.79     0.040     0.027     0.040     0.032    535.30     55.00
 0.000222      100.      100.      100.         2         0         0     -0.01     35.00    140.00

*SECNO 4650.000

3470 ENCROACHMENT STATIONS        55.0      160.0  TYPE       1  TARGET       105.000

      M  STATION 47+10 TO 51+81-DIC ON SOUTH SIDE OF DRAIN

  4650.00      6.77    593.07      0.0     593.01    593.17      0.09      0.20      0.00    592.50
     470.       12.      445.       13.       27.      178.       18.       19.        5.    591.40
     0.45      0.43      2.53      0.76     0.040     0.027     0.040     0.031    506.30     55.00
 0.000312      750.      750.      750.         1         0         0     -0.01    105.00    160.00

*SECNO 4750.000
3280 CROSS SECTION   4750.00 EXTENDED      0.32 FEET

3470 ENCROACHMENT STATIONS        60.0      145.0  TYPE       1  TARGET        85.000

      N

  4750.00      6.52    593.12      0.0     593.07    593.19      0.07      0.03      0.00    590.90
     470.       48.      421.        1.       65.      185.        3.       20.        5.    592.80
     0.46      0.74      2.27      0.25     0.040     0.027     0.040     0.031    536.50     60.00
 0.000219      100.      100.      100.         2         0         0     -0.00     35.00    145.00

*SECNO 5130.000
3280 CROSS SECTION   5130.00 EXTENDED      0.71 FEET

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

      O

  5130.00      6.51    593.21      0.0     593.15    593.28      0.07      0.08      0.00    591.00
     470.       63.      405.        1.       99.      182.        7.       22.        6.    593.00
     0.51      0.53      2.23      0.20     0.040     0.027     0.040     0.031    536.70     20.00
 0.000218      380.      380.      380.         1         0         0     -0.00    150.00    170.00

*SECNO 5230.000
3280 CROSS SECTION   5230.00 EXTENDED      0.33 FEET

      P
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 5220.00    6.13   593.13    0.0    593.07   593.36    0.21    0.04    0.05   592.50
    470.     19.    4.9.      2.      27.     113.      4.      23.      6.    592.60
    0.52    0.68    3.96    0.46    0.040   0.027    0.040   0.031   537.00    50.00
0.000886    100.    100.    100.       2       0        0   -0.01   100.85   150.36

*SECNO 5823.000

3470 ENCROACHMENT STATIONS      95.0     145.0  TYPE      1  TARGET      50.000

        Q

 5828.00    6.04   593.64    0.0    593.61   593.36    0.21    0.49    0.00   592.50
    470.     12.    450.      8.      12.     119.      9.      25.      7.    592.60
    0.56    0.99    3.79    0.39    0.040   0.027    0.040   0.030   537.60    95.00
0.000759    598.    593.    593.       2       0        0   -0.00    50.00   145.00

CCHV    0.300 CEHV    0.300
*SECNO 5958.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS      50.0     170.0  TYPE      1  TARGET     120.000

        R. SHERIDAN RD CULVERT, TR 596.6, LC 594.9

          7.0 ROUND CORRUGATED METAL PIPE

 5958.00    5.36   593.25   592.96   593.21   594.52    1.27    0.14    0.53   591.40
    310.     11.    290.      10.      4.      31.      3.      25.      7.    591.40
    0.57    2.78    9.32    2.75    0.040   0.027    0.040   0.030   537.90   107.39
0.007005    100.    100.    100.       6      15        0   -0.00    14.85   122.25

*SECNO 5959.000

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE,NRD  11 MIN ELTRD   596.00 MAX ELLC   596.60

3470 ENCROACHMENT STATIONS     111.5     113.5  TYPE      1  TARGET       7.000
 ELENCL    596.60  ELENCR    596.60
 5959.00    5.14   593.04    0.0    593.01   594.33    1.79    0.05    0.26   591.40
    310.      0.     310.      0.      0.      29.      0.      25.      7.    596.60
    0.57    0.0    10.73    0.0    0.040   0.027    0.040   0.030   537.90   111.50
0.014786     5.      5.      5.       2       0        0   -0.75    7.00   113.50

*SECNO 5960.000

3301 HV CHANGED MORE THAN HVINS

   SECNO    DEPTH    CMSEL    CRIWS    MSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XML      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

3370 NORMAL BRIDGE,NRD  11 MIN ELTRD   596.00 MAX ELLC   596.60
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3470 ENCROACHMENT STATIONS        111.5      113.5  TYPE       1  TARGET        7.000
 ELENCL      596.60  ELENCR      596.60
  5960.00      6.53   594.40      0.0     594.48   595.62      1.15      0.60      0.19    591.40
     310.        0.     310.        0.        0.      36.        0.       25.        7.    596.60
     0.57       0.0     8.59       0.0     0.040    0.027     0.040     0.030    537.90    111.50
 0.009848       50.     50.        50.         3        0         0     -3.55      7.00    118.50


*SECNO 5961.000

3470 ENCROACHMENT STATIONS        111.5      113.5  TYPE       1  TARGET        7.000
 ELENCL      596.60  ELENCR      596.60
  5961.00      7.05   594.95      0.0     594.95   595.76      0.81      0.04      0.10    591.40
     310.        0.     310.        0.        0.      43.        0.       25.        7.    596.60
     0.57       0.0     7.22       0.0     0.040    0.027     0.040     0.030    537.90    111.50
 0.005355        5.      5.         5.         3        0         0     -0.00      7.00    118.50


*SECNO 6100.000
3280 CROSS SECTION   6100.00 EXTENDED      2.00 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS         50.0      200.0  TYPE       1  TARGET      150.000

        S

  6100.00      8.00   596.00      0.0     596.01   596.01      0.01      0.01      0.24    593.50
     310.       47.     137.       76.      119.     176.      182.       25.        8.    593.10
     0.61       0.39    1.06       0.42    0.040    0.027     0.040     0.030    533.00     50.00
 0.000037       112.    112.       112.         2        0         0     -0.00    150.00    200.00


CCHV    0.100 CEHV    0.300
*SECNO 6965.000

3470 ENCROACHMENT STATIONS         80.0      130.0  TYPE       1  TARGET       50.000

        T

  6965.00      7.23   596.03      0.0     596.04   596.09      0.07      0.06      0.02    595.20
     310.        6.     304.        0.       16.     145.        0.       32.       10.  100000.00
     0.73       0.41    2.10       0.0     0.040    0.027     0.040     0.030    538.80     80.00
 0.000206       865.    865.       865.         2        0         0     -0.00     50.00    130.00


CCHV    0.300 CEHV    0.500
*SECNO 7081.000

        U  PRIVATE DRIVE CULVERT, TR 596.3, LC 594.7


        8.6X5.9 STRUCTURAL PLATE PIPE ARCH

  7081.00      7.21   596.01      0.0     596.01   596.17      0.16      0.03      0.04    590.70
     310.       45.     216.       49.       32.      59.       35.       32.       10.    590.70
     0.73       1.40    3.67       1.41    0.040    0.027     0.040     0.030    538.80    103.65
 0.000436       100.    100.       100.         2        0         0     -0.00     33.64    137.29


*SECNO 7082.000
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```
3301 HV CHANGED MORE THAN HVINS

     SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
     Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
     TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       STN       ELMIN       SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOP WID     ENDST

3370 NORMAL BRIDGE,NRO  11 MIN ELTRD   596.30 MAX ELLC   596.50

  7082.00     6.78    595.53    592.53    595.58    596.61     1.03      0.01      0.44    590.70
    310.       0.      310.       0.        0.       38.       0.       32.       10.     590.70
     0.73      0.0      8.15      0.0      0.040     0.027     0.040     0.030   538.80    104.63
 0.011183      5.       5.        5.        4        15         0      -73.35    31.60    136.24

*SECNO 7083.000

3370 NORMAL BRIDGE,NRO  11 MIN ELTRD   596.30 MAX ELLC   596.50

  7083.00     7.05    595.85    592.53    595.85    596.98     1.03      0.27      0.0     590.70
    310.       0.      310.       0.        0.       38.       0.       32.       10.     590.70
     0.74      0.0      8.15      0.0      0.040     0.027     0.040     0.030   588.80    104.03
 0.011183     24.      24.       24.        4        15         0      -82.00    32.87    136.89

*SECNO 7084.000
3280 CROSS SECTION   7084.00 EXTENDED      0.62 FEET

3301 HV CHANGED MORE THAN HVINS

  7084.00     3.32    597.12      0.0     597.12    597.17     0.06      0.00      0.29    590.70
    310.      63.     171.       77.       04.       69.     112.       32.       10.     590.70
     0.74      0.75     2.49      0.58     0.040     0.027     0.040     0.030   538.80     50.00
 0.000164      5.       5.        5.        3         0         0      -0.02   175.00    225.00

*SECNO 7200.000
3280 CROSS SECTION   7200.00 EXTENDED      0.65 FEET

3470 ENCROACHMENT STATIONS      100.0     150.0  TYPE      1  TARGET      50.000

        V

  7200.00     8.15    597.15      0.0     597.15    597.19     0.04      0.01      0.01    595.40
    310.       2.      303.       5.        5.      195.      13.       33.       10.     596.00
     0.75      0.38     1.56      0.36     0.040     0.027     0.040     0.030   539.00    100.00
 0.000091    100.     100.      100.        2         0         0      -0.00    50.00    150.00

CCHV    0.100 CEHV    0.300
*SECNO 8140.000
3280 CROSS SECTION   8140.00 EXTENDED      2.25 FEET

3470 ENCROACHMENT STATIONS      110.0     150.0  TYPE      1  TARGET      40.000

        W

  8140.00     7.65    597.25      0.0     597.24    597.29     0.04      0.09      0.00    597.00
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     310.      0.      3.0.      0.      0.     193.      0.     37.     11.  100000.00
    0.91     0.12     1.61     0.0     0.040    0.027    0.040   0.029   529.60   110.00
0.000114     925.     925.     925.       2        0        0    -0.00   39.33   149.38


CCHV   0.300 CEHV   0.500
*SECNO 8269.000
   SECNO    DEPTH    CHSEL    CRINS    HSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        ELOB     QCH      QROB     ALOB     ACH      AROB     VCL      T A.  LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XML      XNCH     XMR      ITN      ELVIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   ICC      ICONT    CCRAT    TOPMID     ENDST


X  DRIVEWAY CULVERT. TR 593.3. LC 595.6

8.6X5.9 STRUCTURAL PLATE PIPE ARCH

 8269.00     7.53   597.23     0.0   597.21   597.34     0.12     0.02     0.04   591.60
   310.      55.     201.      53.      43.      62.      41.      37.      11.   591.60
    0.93     1.31     3.26     1.27    0.040    0.027    0.040    0.029   539.70   109.37
0.000324     100.     100.     100.       2        0        0    -0.00   39.12   149.00

*SECNO 8270.000

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE.NRO  12 MIN ELTRD   597.80 MAX ELLC   600.00

 8270.00     7.39   596.79   593.44   596.78   597.78     0.99     0.00     0.44   591.60
   310.      0.      310.      0.       0.      39.       0.      37.      11.   591.60
    0.93     0.0     7.93     0.0     0.040    0.027    0.040   0.029   539.70   111.56
0.010543     5.      5.       5.       4        16       0     -91.08   36.31   147.87

*SECNO 8271.000

3370 NORMAL BRIDGE.NRO  12 MIN ELTRD   597.80 MAX ELLC   600.00

 8271.00     7.60   597.30   593.44   597.29   598.29     0.99     0.51     0.0   591.60
   310.      0.      310.      0.       0.      39.       0.      38.      11.   591.60
    0.93     0.0     7.93     0.0     0.040    0.027    0.040   0.029   539.70   109.50
0.010543     48.     48.      48.       4        16       0    -110.23   39.69   149.19

*SECNO 8272.000
3280 CROSS SECTION   8272.00 EXTENDED      0.72 FEET


3301 HV CHANGED MORE THAN HVINS

 8272.00     3.82   598.52     0.0   598.51   598.57     0.05     0.00     0.23   591.60
   310.      68.     163.      74.      68.      73.      98.      33.      11.   591.60
    0.93     1.00     2.31     0.75    0.040    0.027    0.040   0.029   539.70   103.38
0.000130     5.      5.       5.       2        0        0    -0.00   96.62   200.00

*SECNO 8541.000

3265 DIVIDED FLOW

3280 CROSS SECTION   8541.00 EXTENDED      2.55 FEET
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        Y  WILLIAMSTON RD CULVERT, TR 598.8, LC 595.3

  8541.00     8.54   598.54     0.0    598.53   598.59     0.05     0.02     0.00   590.80
     310.      45.     204.      60.      50.      93.     114.      39.      12.    590.80
     0.96     0.57     2.20     0.53    0.040    0.027    0.040    0.029   590.00    50.00
 0.000098     209.     209.     209.        2        0        0    -0.00   136.69   200.00


 SPECIAL BRIDGE

 SB  XK      XKOR      COEQ      RDLEN     BWC      BWP      BAREA     SS       ELCHU     ELCHD
     0.0      1.67      2.50     32.00     11.00     0.0     57.10     0.0     590.00    590.00

 *SECNO 8542.000
 3280 CROSS SECTION   8542.00 EXTENDED      3.03 FEET

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

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      HB       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  599.31    598.59     0.0        52.      257.       57.       58.      595.30    598.80


  8542.00     9.03   599.03     0.0    599.03   599.07     0.03     0.47     0.0    590.80
     310.      54.     135.      71.     109.      98.     150.      39.      12.    590.80
     0.98     0.49     1.89     0.48    0.040    0.027    0.040    0.029   590.00    50.00
 0.000066      53.      58.      53.        2        0        2    -0.01   150.00   200.00


 *SECNO 8675.000
 3280 CROSS SECTION   8675.00 EXTENDED      3.07 FEET


        Z

  8675.00     8.97   599.07     0.0    599.07   599.08     0.01     0.00     0.01   596.50
     310.      33.     138.      84.     123.     216.     222.      40.      12.    595.50
     1.02     0.31     0.87     0.38    0.040    0.027    0.040    0.029   590.10    50.00
 0.000022     105.     105.     105.        2        0        0    -0.01   150.00   200.00


 CCHV    0.100 CEHV    0.300
 *SECNO 9030.000
 3280 CROSS SECTION   9030.00 EXTENDED      2.87 FEET


 3470 ENCROACHMENT STATIONS      101.0     133.0  TYPE      1  TARGET       32.000

        AA

  9030.00     8.77   599.07     0.0    599.07   599.10     0.03     0.01     0.01   596.70
     310.       0.     310.       0.       0.     209.       0.      43.      13. 100000.00
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    1.09      0.0      1.43      0.0     0.040    0.027    0.040    0.029   590.30   101.00
 0.000081     355.     355.      355.        2        0        0    -0.00    32.00   133.00

CCHV    0.300 CEHV    0.500
*SECNO 9150.000
3280 CROSS SECTION   9150.00 EXTENDED      7.05 FEET

3470 ENCROACHMENT STATIONS      109.5     126.3  TYPE      1  TARGET       16.000
        AB  GRAND TRUNK WESTERN RAILROAD CULVERT, TR 600.7, LC 595.4

            5 & 4.5 ROUND CONCRETE PIPES

  9150.00     8.65   599.05      0.0    599.08   599.15     0.10     0.02     0.03   592.90
     310.       0.     310.       0.       0.     121.       0.      44.      13. 100000.00
     1.10      0.0     2.57      0.0     0.040    0.027    0.040    0.029   590.40   109.50
 0.000405     105.     105.      105.        2        0        0    -0.00    16.80   126.30

SPECIAL BRIDGE

SD  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    1.25      1.65      2.50      32.00     16.00     7.20      35.50     0.0      591.50    591.50

*SECNO 9151.000
3280 CROSS SECTION   9151.00 EXTENDED      8.82 FEET

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC     ELTRD
                                                                AREA
  601.00    599.27     0.21       16.      296.       36.       34.      595.40    600.70

  9151.00    10.42   600.82      0.0    600.83   600.82     0.00     1.67     0.0   592.90
     310.      60.      79.      171.     247.     151.     519.      44.      13.   592.70
     1.13     0.24     0.52      0.33    0.040    0.027    0.040    0.029   590.40    50.00
 0.000007      45.      45.       45.        0        0        3    -0.00   150.00   200.00

*SECNO 9275.000
3280 CROSS SECTION   9275.00 EXTENDED      4.31 FEET

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

3470 ENCROACHMENT STATIONS      101.0     133.0  TYPE      1  TARGET       32.000
        AC  STATION 93+00-TRANSITION POINT, DITCH WIDTH FROM 8 FT CHANGE TO 6 FT

  9275.00    10.41   600.81      0.0    600.83   600.83     0.02     0.00     0.01   597.00
     310.       0.     310.       0.       0.     259.       0.      46.      13. 100000.00
     1.16      0.0     1.19      0.0     0.040    0.027    0.040    0.029   590.40   101.00
 0.000044     105.     105.      105.        2        0        0    -0.00    32.00   133.00
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CCHV    0.100 CEHV    0.300
*SECNO 9335.000
3230 CROSS SECTION   9335.00 EXTENDED      2.81 FEET


3470 ENCROACHMENT STATIONS      104.0      134.5  TYPE      1  TARGET       30.500

        AD

  9335.00    10.21   600.51     0.0    600.83   600.84     0.03     0.00     0.00   596.50
     310.       0.     310.      0.       0.     234.       0.      46.      13. 100000.00
     1.17     0.0     1.33     0.0    0.040    0.027    0.040    0.029   590.60   104.00
 0.000058      60.      60.      60.        0        0        0    -0.00    30.50   134.50

*SECNO 10200.000
3280 CROSS SECTION  10200.00 EXTENDED      3.36 FEET


3470 ENCROACHMENT STATIONS       97.0      126.0  TYPE      1  TARGET       29.000

        AE

 10200.00     9.56   600.86     0.0    600.84   600.89     0.03     0.05     0.00   596.90
     310.       0.     310.      0.       1.     212.       0.      51.      14. 100000.00
     1.33     0.13     1.46     0.0    0.040    0.027    0.040    0.029   591.30    97.00
 0.000065     865.     865.     865.        0        0        0    -0.00    29.00   126.00
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*************************************************
HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST.

LULL DRAIN

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKAS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
130.000	586.19 ✓	-13.01	585.50	28.33	0.0	470.00	0.0	0.0	0.0	100.00	132.50	0.0
130.000	586.19	-13.01	585.50	28.33	0.0	470.00	0.0	0.0	0.0	100.00	132.50	0.0
234.000	586.43	0.0	585.75	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
234.000	586.43	0.0	586.75	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	586.84	0.0	587.11	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	586.84	0.0	587.11	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
350.000	587.09	0.0	587.32	30.94	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
350.000	587.09	0.0	587.32	30.94	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	587.87	0.0	588.11	33.11	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	587.87	0.0	588.11	33.11	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
901.000	587.94	0.0	588.50	28.68	69.71	324.59	75.70	42.00	100.00	115.80	124.20	142.00
901.000	587.94	0.0	588.50	28.68	69.71	324.59	75.70	42.00	100.00	115.80	124.20	142.00
902.000	591.32	0.0	591.41	42.00	114.50	231.66	123.84	42.00	100.00	115.80	124.20	142.00
902.000	591.32	0.0	591.41	42.00	114.50	231.66	123.84	42.00	100.00	115.80	124.20	142.00
1020.000	591.40	0.0	591.46	42.00	0.0	470.00	0.0	42.00	100.00	100.00	142.00	142.00
1020.000	591.40	0.0	591.46	42.00	0.0	470.00	0.0	42.00	100.00	100.00	142.00	142.00
1870.000	591.65	0.0	591.74	40.37	0.0	470.00	0.0	0.0	0.0	97.00	146.00	0.0
1870.000	591.68	0.02	591.34	20.00	0.0	470.00	0.0	20.00	112.00	97.00	146.00	132.00
1997.000	591.56	0.0	591.96	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1997.000	591.68	0.10	592.05	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	591.51	0.0	592.05	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	591.61	0.10	592.14	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	591.69	0.0	592.21	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	591.79	0.10	592.30	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	591.93	0.0	592.27	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	592.03	0.10	592.36	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0

SECND	CWSEL	DIFKWS	ES	TOPWID	QLOB	QCH	DROP	PERENC	STENCL	STCHL	STCHR	STENCR
2125.000	592.30	0.0	592.39	40.62	0.0	470.00	0.0	48.70	160.00	160.00	208.70	208.70
2125.000	592.39	0.09	592.47	40.98	0.0	470.00	0.0	48.70	160.00	160.00	208.70	208.70
3000.000	592.53	0.0	592.63	39.66	0.0	470.00	0.0	59.90	155.80	155.80	215.70	215.70
3000.000	592.61	0.08	592.70	39.98	0.0	470.00	0.0	59.90	155.80	155.80	215.70	215.70
3800.000	592.77	0.0	592.87	37.50	0.0	470.00	0.0	37.50	166.00	166.00	203.50	203.50
3800.000	592.83	0.07	592.94	37.50	0.0	470.00	0.0	37.50	166.00	166.00	203.50	203.50
3900.000	592.82	0.0	592.90	94.87	44.77	404.29	20.94	0.0	0.0	97.70	127.00	0.0
3900.000	592.88	0.07	592.97	85.00	45.31	405.33	19.36	85.00	55.00	97.70	127.00	140.00
4650.000	593.01	0.0	593.11	130.02	10.58	443.86	15.54	0.0	0.0	106.00	147.00	0.0
4650.000	593.07	0.06	593.17	105.00	11.62	444.89	13.49	105.00	55.00	106.00	147.00	160.00
4750.000	593.07	0.0	593.14	150.00	66.05	401.88	2.07	0.0	0.0	100.00	136.00	0.0
4750.000	593.12	0.05	593.19	85.00	48.09	421.18	0.72	85.00	60.00	100.00	136.00	145.00
5130.000	593.15	0.0	593.22	150.00	59.59	409.60	0.81	0.0	0.0	100.00	136.00	0.0
5130.000	593.21	0.06	593.28	150.00	63.04	405.53	1.43	0.0	0.0	100.00	136.00	0.0
5230.000	593.07	0.0	593.32	90.91	15.28	453.22	1.50	0.0	0.0	107.00	134.20	0.0
5230.000	593.13	0.06	593.36	100.86	13.58	449.39	2.02	0.0	0.0	107.00	134.20	0.0
5828.000	593.61	0.0	593.83	50.00	11.27	450.69	3.05	50.00	95.00	106.40	134.20	145.00
5828.000	593.64	0.03	593.86	50.00	11.62	450.02	3.37	50.00	95.00	106.40	134.20	145.00
5958.000	593.21	0.0	594.52	14.68	10.17	290.65	9.18	120.00	50.00	111.50	118.50	170.00
5958.000	593.26	0.04	594.52	14.35	10.60	289.83	8.57	120.00	50.00	111.50	113.50	170.00
5959.000	593.01	0.0	594.82	7.00	0.0	310.00	0.0	7.00	111.50	111.50	113.50	118.50
5959.000	593.04	0.04	594.53	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5960.000	594.48	0.0	595.63	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5960.000	594.48	-0.01	595.62	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	594.96	0.0	595.77	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	594.95	-0.01	595.76	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
6100.000	596.01	0.0	596.02	150.00	46.78	186.96	76.26	150.00	50.00	100.00	129.00	200.00
6100.000	596.00	-0.00	596.01	150.00	46.73	187.08	76.19	150.00	50.00	100.00	129.00	200.00
6965.000	596.04	0.0	596.09	132.42	7.57	301.99	0.44	0.0	0.0	103.00	138.00	0.0
6965.000	596.03	-0.01	596.09	50.00	6.48	303.52	0.0	50.00	80.00	103.00	138.00	130.00
7031.000	596.01	0.0	596.17	33.64	44.82	216.45	48.73	0.0	0.0	115.70	124.30	0.0
7081.000	596.01	0.00	596.17	33.64	44.82	216.45	48.73	0.0	0.0	115.70	124.30	0.0
7082.000	595.58	0.0	596.51	31.60	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7082.000	595.58	0.00	596.51	31.60	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7083.000	595.85	0.0	596.38	32.86	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7083.000	595.85	0.00	596.38	32.87	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7084.000	597.12	0.0	597.17	175.00	62.95	170.59	76.46	0.0	0.0	115.70	124.30	0.0
7084.000	597.12	0.00	597.17	175.00	62.97	170.53	76.50	0.0	0.0	115.70	124.30	0.0

SECND	CASEL	DIFCAS	EG	TOPWID	ILOP	QCP	QROB	PERENC	STENCL	STCPL	STCPR	STENCR
7200.000	597.16	0.0	597.19	150.00	20.10	272.99	16.90	0.0	0.0	103.00	139.00	0.0
7200.000	597.15	-0.01	597.19	50.00	1.95	303.30	4.75	50.00	100.00	103.00	136.00	150.00
8140.000	597.24	0.0	597.27	80.80	0.03	292.73	17.23	0.0	0.0	111.00	150.50	0.0
8140.000	597.25	0.01	597.29	39.38	0.03	309.97	0.0	40.00	110.00	111.00	150.50	150.00
8269.000	597.21	0.0	597.33	39.04	56.22	201.26	52.52	0.0	0.0	125.70	134.30	0.0
8269.000	597.23	0.01	597.34	39.12	56.37	201.03	52.60	0.0	0.0	125.70	134.30	0.0
8270.000	596.78	0.0	597.77	35.25	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8270.000	596.79	0.01	597.76	36.31	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	597.29	0.0	598.28	39.61	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	597.30	0.01	598.29	39.69	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8272.000	598.51	0.0	598.56	95.56	67.98	168.78	73.24	0.0	0.0	125.70	134.30	0.0
8272.000	598.52	0.01	598.57	95.62	68.03	168.40	73.57	0.0	0.0	125.70	134.30	0.0
8541.000	598.53	0.0	598.58	136.11	45.67	204.86	59.48	0.0	0.0	112.50	123.50	0.0
8541.000	598.54	0.01	598.59	136.69	45.82	204.47	59.71	0.0	0.0	112.50	123.50	0.0
8542.000	599.03	0.0	599.06	150.00	53.59	185.32	71.09	0.0	0.0	112.50	123.50	0.0
8542.000	599.03	0.01	599.07	150.00	53.69	185.07	71.23	0.0	0.0	112.50	123.50	0.0
8675.000	599.07	0.0	599.07	150.00	37.66	188.54	83.90	0.0	0.0	101.00	133.00	0.0
8675.000	599.07	0.01	599.08	150.00	37.72	188.43	83.96	0.0	0.0	101.00	133.00	0.0
9030.000	599.07	0.0	599.09	150.00	35.42	192.84	81.74	0.0	0.0	101.00	133.00	0.0
9030.000	599.07	-0.01	599.10	32.00	0.0	310.00	0.0	32.00	101.00	101.00	133.00	133.00
9150.000	599.08	0.0	599.09	150.00	42.09	90.36	177.55	0.0	0.0	109.50	126.30	0.0
9150.000	599.05	-0.03	599.15	16.30	0.0	310.00	0.0	16.30	109.50	109.50	126.30	126.30
9151.000	600.33	0.0	600.83	150.00	60.51	73.65	170.34	0.0	0.0	109.50	126.30	0.0
9151.000	600.32	-0.01	600.82	150.00	60.42	73.70	170.38	0.0	0.0	109.50	126.30	0.0
9275.000	600.83	0.0	600.84	150.00	43.98	168.11	92.91	0.0	0.0	101.00	133.00	0.0
9275.000	600.81	-0.02	600.83	32.00	0.0	310.00	0.0	32.00	101.00	101.00	133.00	133.00
9335.000	600.83	0.0	600.84	150.00	75.49	183.06	46.43	0.0	0.0	104.00	134.50	0.0
9335.000	600.81	-0.02	600.84	30.50	0.0	310.00	0.0	30.50	104.00	104.00	134.50	134.50
10200.000	600.84	0.0	600.85	150.00	63.93	183.13	62.94	0.0	0.0	97.30	126.00	0.0
10200.000	600.86	0.02	600.89	29.00	0.15	309.85	0.0	29.00	97.00	97.30	126.00	126.00

LULL CRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	EL'IN	C	CHSEL	CRI'S	E^	10(*S	VCH	AREA	.01K
130.000	130.00	0.0	0.0	580.40	470.00	586.19	0.0	586.50	23.98	4.40	106.73	95.98
130.000	130.00	0.0	0.0	580.40	470.00	586.19	0.0	586.50	23.98	4.40	106.73	95.98
234.000	103.00	0.0	0.0	580.60	470.00	586.43	0.0	586.75	23.94	4.55	103.41	96.07
234.000	103.00	0.0	0.0	580.60	470.00	586.43	0.0	586.75	23.94	4.55	103.41	96.07
235.000	4.50	586.50	585.60	580.60	470.00	586.84	0.0	587.11	18.16	4.14	113.57	110.29
235.000	4.50	586.50	585.60	580.60	470.00	586.04	0.0	587.11	18.16	4.14	113.57	110.29
350.000	114.00	0.0	0.0	580.80	470.00	587.09	0.0	587.32	16.71	3.84	122.31	114.98
350.000	114.00	0.0	0.0	580.80	470.00	587.09	0.0	587.32	16.71	3.84	122.31	114.98
800.000	450.00	0.0	0.0	582.00	470.00	587.87	0.0	588.11	10.54	3.39	120.70	109.16
800.000	450.00	0.0	0.0	582.00	470.00	587.87	0.0	588.11	10.54	3.39	120.70	109.16
901.000	90.00	0.0	0.0	581.90	470.00	587.94	0.0	588.50	36.53	6.87	89.25	77.76
901.000	90.00	0.0	0.0	581.90	470.00	587.94	0.0	588.50	36.53	6.87	89.25	77.76
902.000	31.00	590.50	587.70	581.90	470.00	591.32	0.0	591.41	3.88	3.06	213.00	238.58
902.000	31.00	590.50	587.70	581.90	470.00	591.32	0.0	591.41	3.88	3.06	213.00	238.58
1020.000	100.00	0.0	0.0	582.40	470.00	591.40	0.0	591.46	2.41	1.88	249.95	302.44
1020.000	100.00	0.0	0.0	582.40	470.00	591.40	0.0	591.46	2.41	1.88	249.95	302.44
1870.000	850.00	0.0	0.0	584.00	470.00	591.65	0.0	591.74	4.57	2.35	199.96	219.84
1870.000	850.00	0.0	0.0	584.00	470.00	591.68	0.0	591.84	8.91	3.26	143.97	157.44
1997.000	100.00	0.0	0.0	584.30	470.00	591.58	0.0	591.96	13.69	4.93	95.24	127.05
1997.000	100.00	0.0	0.0	584.30	470.00	591.68	0.0	592.05	13.03	4.86	95.66	130.23
1998.000	5.00	595.00	595.80	584.30	470.00	591.51	0.0	592.05	37.42	5.38	79.92	76.84
1998.000	5.00	595.00	595.80	584.30	470.00	591.61	0.0	592.14	36.88	5.83	80.59	77.40
1999.000	43.00	595.00	595.80	584.30	470.00	591.69	0.0	592.21	36.49	5.80	81.10	77.81
1999.000	43.00	595.00	595.80	584.30	470.00	591.79	0.0	592.30	36.03	5.75	81.72	78.30
2000.000	5.00	0.0	0.0	584.30	470.00	591.93	0.0	592.27	5.17	4.69	100.13	139.25
2000.000	5.00	0.0	0.0	584.30	470.00	592.03	0.0	592.36	5.89	4.63	101.53	193.68
2125.000	100.00	0.0	0.0	584.20	470.00	592.30	0.0	592.39	2.58	2.39	196.38	292.37
2125.000	100.00	0.0	0.0	584.20	470.00	592.39	0.0	592.47	2.46	2.34	200.54	299.68
3000.000	875.00	0.0	0.0	584.60	470.00	592.53	0.0	592.63	2.87	2.49	188.98	277.32
3000.000	875.00	0.0	0.0	584.60	470.00	592.61	0.0	592.70	2.75	2.45	192.13	283.53
3800.000	800.00	0.0	0.0	585.10	470.00	592.77	0.0	592.87	3.23	2.62	179.45	261.61
3800.000	800.00	0.0	0.0	585.10	470.00	592.83	0.0	592.94	3.09	2.58	182.02	267.30
3900.000	100.00	0.0	0.0	585.30	470.00	592.82	0.0	592.90	2.29	2.48	255.06	310.31
3900.000	100.00	0.0	0.0	585.30	470.00	592.88	0.0	592.97	2.22	2.46	253.29	315.63
4650.000	750.00	0.0	0.0	586.30	470.00	593.01	0.0	593.11	3.24	2.53	228.36	260.91
4650.000	750.00	0.0	0.0	586.30	470.00	593.07	0.0	593.17	3.12	2.50	222.50	266.23

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CASEL	CRIMS	EC	IOK*S	VCH	AREA	.01K
4750.000	100.00	0.0	0.0	586.50	470.00	593.07	0.0	593.14	2.06	2.19	296.94	327.57
4750.000	100.00	0.0	0.0	586.50	470.00	593.12	0.0	593.19	2.19	2.27	252.37	317.43
5130.000	330.00	0.0	0.0	586.70	470.00	593.15	0.0	593.22	2.32	2.29	273.57	308.54
5130.000	330.00	0.0	0.0	586.70	470.00	593.21	0.0	593.28	2.18	2.23	283.28	318.52
5230.000	100.00	0.0	0.0	587.00	470.00	593.07	0.0	593.32	9.47	4.05	139.16	152.73
5230.000	100.00	0.0	0.0	587.00	470.00	593.13	0.0	593.36	8.06	3.96	145.36	157.93
5828.000	593.00	0.0	0.0	587.60	470.00	593.61	0.0	593.33	7.77	3.81	133.65	153.59
5828.000	593.00	0.0	0.0	587.60	470.00	593.64	0.0	593.36	7.59	3.79	139.99	170.63
5958.000	100.00	0.0	0.0	587.90	310.00	593.21	592.98	594.52	72.65	9.43	37.78	36.37
5958.000	100.00	0.0	0.0	587.90	310.00	593.26	592.96	594.52	70.05	9.32	38.38	37.04
5959.000	5.00	596.00	596.50	587.90	310.00	593.01	0.0	594.32	150.59	10.81	23.67	25.26
5959.000	5.00	596.00	596.50	587.90	310.00	593.04	0.0	594.33	147.86	10.73	28.88	25.49
5960.000	50.00	596.00	596.50	587.90	310.00	594.48	0.0	595.63	98.64	3.59	36.10	31.21
5960.000	50.00	596.00	596.50	587.90	310.00	594.48	0.0	595.62	98.48	3.59	36.08	31.24
5961.000	5.00	0.0	0.0	587.90	310.00	594.96	0.0	595.77	53.39	7.21	43.00	42.42
5961.000	5.00	0.0	0.0	587.90	310.00	594.95	0.0	595.76	53.55	7.22	42.95	42.36
6100.000	112.00	0.0	0.0	588.00	310.00	596.01	0.0	596.02	0.37	1.06	473.22	507.57
6100.000	112.00	0.0	0.0	588.00	310.00	596.00	0.0	596.01	0.37	1.06	477.59	506.67
6965.000	865.00	0.0	0.0	588.80	310.00	596.04	0.0	596.09	1.53	1.85	195.01	242.46
6965.000	865.00	0.0	0.0	588.80	310.00	596.03	0.0	596.09	2.06	2.10	160.53	216.03
7081.000	100.00	0.0	0.0	588.80	310.00	596.01	0.0	596.17	4.36	3.67	125.48	148.53
7081.000	100.00	0.0	0.0	588.80	310.00	596.01	0.0	596.17	4.36	3.67	125.48	148.54
7082.000	5.00	596.30	596.50	588.80	310.00	595.58	592.53	596.61	111.83	8.15	38.05	29.31
7082.000	5.00	596.30	596.50	588.80	310.00	595.53	592.53	596.61	111.83	8.15	38.05	29.31
7083.000	24.00	596.30	596.50	588.80	310.00	595.35	592.53	596.88	111.83	8.15	38.05	29.31
7083.000	24.00	596.30	596.50	588.80	310.00	595.35	592.53	596.88	111.83	8.15	38.05	29.31
7084.000	5.00	0.0	0.0	588.80	310.00	597.12	0.0	597.17	1.64	2.49	264.24	241.75
7084.000	5.00	0.0	0.0	588.80	310.00	597.12	0.0	597.17	1.64	2.49	264.42	241.89
7200.000	100.00	0.0	0.0	589.00	310.00	597.16	0.0	597.19	0.73	1.40	311.14	362.33
7200.000	100.00	0.0	0.0	589.00	310.00	597.15	0.0	597.19	0.91	1.56	213.23	325.01
8140.000	925.00	0.0	0.0	589.60	310.00	597.24	0.0	597.27	1.02	1.52	236.94	307.17
8140.000	925.00	0.0	0.0	589.60	310.00	597.25	0.0	597.29	1.14	1.61	192.79	290.69
8269.000	100.00	0.0	0.0	589.70	310.00	597.21	0.0	597.33	3.26	3.27	145.73	171.60
8269.000	100.00	0.0	0.0	589.70	310.00	597.23	0.0	597.34	3.24	3.26	146.16	172.32
8270.000	5.00	597.80	600.00	589.70	310.00	596.78	593.44	597.77	105.43	7.98	38.36	30.19
8270.000	5.00	597.80	600.00	589.70	310.00	596.79	593.44	597.70	105.43	7.98	38.36	30.19
8271.000	48.00	597.80	600.00	589.70	310.00	597.29	593.44	598.28	105.43	7.98	38.36	30.19
8271.000	48.00	597.80	600.00	589.70	310.00	597.30	593.44	598.29	105.43	7.98	38.36	30.19

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	C.SEL	CRIWS	ZG	10K#S	VCH	AREA	.01K
8272.000	5.00	0.0	0.0	589.70	310.00	590.51	0.0	598.56	1.32	2.32	237.42	270.23
8272.000	5.00	0.0	0.0	589.70	310.00	591.52	0.0	598.57	1.30	2.31	233.60	271.49
8541.000	209.00	0.0	0.0	590.00	310.00	593.53	0.0	590.50	0.98	2.21	284.53	312.43
8541.000	209.00	0.0	0.0	590.00	310.00	593.54	0.0	590.59	0.98	2.20	286.13	313.70
8542.000	53.00	593.80	595.30	590.00	310.00	599.03	0.0	599.06	0.67	1.89	355.87	379.26
8542.000	53.00	593.80	595.30	590.00	310.00	599.03	0.0	599.07	0.66	1.89	356.72	380.16
8675.000	105.00	0.0	0.0	590.10	310.00	599.07	0.0	599.07	0.22	0.67	560.91	658.93
8675.000	105.00	0.0	0.0	590.10	310.00	599.07	0.0	599.08	0.22	0.67	561.58	660.06
9030.000	355.00	0.0	0.0	590.30	310.00	599.07	0.0	599.08	0.25	0.92	533.23	615.00
9030.000	355.00	0.0	0.0	590.30	310.00	599.07	0.0	599.10	0.81	1.48	209.18	344.16
9150.000	105.00	0.0	0.0	590.40	310.00	599.08	0.0	599.09	0.19	0.75	554.42	719.25
9150.000	105.00	0.0	0.0	590.40	310.00	599.05	0.0	599.15	4.05	2.57	120.79	153.95
9151.000	45.00	600.70	595.40	590.40	310.00	600.83	0.0	600.03	0.07	0.52	919.24	1138.58
9151.000	45.00	600.70	595.40	590.40	310.00	600.82	0.0	600.82	0.07	0.52	916.63	1185.42
9275.000	105.00	0.0	0.0	590.40	310.00	600.83	0.0	600.84	0.09	0.65	755.05	1007.21
9275.000	105.00	0.0	0.0	590.40	310.00	600.31	0.0	600.03	0.44	1.19	259.49	469.43
9335.000	60.00	0.0	0.0	590.60	310.00	600.83	0.0	600.84	0.16	0.80	615.26	773.47
9335.000	60.00	0.0	0.0	590.60	310.00	600.31	0.0	600.84	0.58	1.33	233.69	408.03
10200.000	865.00	0.0	0.0	591.30	310.00	600.34	0.0	600.85	0.20	0.87	585.62	701.69
10200.000	865.00	0.0	0.0	591.30	310.00	600.86	0.0	600.89	0.65	1.46	213.26	385.22

LULL DRAIN

SUMMARY PRINTOUT TABLE 150

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLOP
130.000	470.00	586.19	0.0	0.0	-13.31	28.33	130.00
130.000	470.00	586.19	0.0	0.0	-13.31	28.33	130.00
234.000	470.00	586.43	0.0	0.24	0.0	25.00	103.00
234.000	470.00	586.43	0.0	0.24	0.0	25.00	103.00
235.000	470.00	586.84	0.0	0.41	0.0	25.00	4.50
235.000	470.00	586.84	0.0	0.41	0.0	25.00	4.50
350.000	470.00	587.09	0.0	0.25	0.0	30.94	114.00
350.000	470.00	587.09	0.0	0.25	0.0	30.94	114.00
800.000	470.00	587.87	0.0	0.79	0.0	33.11	450.00
800.000	470.00	587.87	0.0	0.79	0.0	33.11	450.00
901.000	470.00	587.94	0.0	0.06	0.0	28.58	90.00
901.000	470.00	587.94	0.0	0.06	0.0	28.58	90.00
902.000	470.00	591.32	0.0	3.38	0.0	42.00	31.00
902.000	470.00	591.32	0.0	3.38	0.0	42.00	31.00
1020.000	470.00	591.40	0.0	0.08	0.0	42.00	100.00
1020.000	470.00	591.40	0.0	0.08	0.0	42.00	100.00
1870.000	470.00	591.65	0.0	0.25	0.0	40.37	850.00
1870.000	470.00	591.68	0.02	0.28	0.02	20.00	850.00
1997.000	470.00	591.58	0.0	-0.07	0.0	14.00	100.00
1997.000	470.00	591.68	0.10	0.01	0.10	14.00	100.00
1998.000	470.00	591.51	0.0	-0.07	0.0	14.00	5.00
1998.000	470.00	591.61	0.10	-0.07	0.10	14.00	5.00
1999.000	470.00	591.69	0.0	0.18	0.0	14.00	43.00
1999.000	470.00	591.79	0.10	0.18	0.10	14.00	43.00
2000.000	470.00	591.93	0.0	0.24	0.0	14.00	5.00
2000.000	470.00	592.03	0.10	0.24	0.10	14.00	5.00
2125.000	470.00	592.30	0.0	0.37	0.0	40.62	100.00
2125.000	470.00	592.39	0.09	0.36	0.09	40.98	100.00
3000.000	470.00	592.53	0.0	0.23	0.0	39.66	375.00
3000.000	470.00	592.61	0.08	0.22	0.08	39.98	375.00
3800.000	470.00	592.77	0.0	0.24	0.0	37.50	900.00
3800.000	470.00	593.30	0.07	0.23	0.07	37.50	900.00
3900.000	470.00	592.32	0.0	0.05	0.0	94.87	100.00
3900.000	470.00	592.88	0.07	0.05	0.07	85.00	100.00
4650.000	470.00	593.01	0.0	0.20	0.0	130.02	750.00
4650.000	470.00	593.07	0.06	0.19	0.06	105.00	750.00

SECND	Q	CWSEL	DIFMSP	DIFMSX	DIFKMS	TOPWID	XLCH
4750.000	470.00	593.07	0.0	0.06	0.0	150.00	100.00
4750.000	470.00	593.12	0.05	0.05	0.05	85.00	100.00
5130.000	470.00	593.15	0.0	0.08	0.0	150.00	380.00
5130.000	470.00	593.21	0.06	0.09	0.06	150.00	380.00
5230.000	470.00	593.07	0.0	-0.03	0.0	98.91	100.00
5230.000	470.00	593.13	0.06	-0.08	0.06	100.86	100.00
5828.000	470.00	593.51	0.0	0.54	0.0	50.00	598.00
5828.000	470.00	593.54	0.03	0.51	0.03	50.00	598.00
5958.000	310.00	593.21	0.0	-0.40	0.0	14.68	100.00
5958.000	310.00	593.26	0.04	-0.39	0.04	14.85	100.00
5959.000	310.00	593.01	0.0	-0.21	0.0	7.00	5.00
5959.000	310.00	593.04	0.04	-0.21	0.04	7.00	5.00
5960.000	310.00	594.48	0.0	1.47	0.0	7.00	50.00
5960.000	310.00	594.48	-0.01	1.43	-0.01	7.00	50.00
5961.000	310.00	594.96	0.0	0.47	0.0	7.00	5.00
5961.000	310.00	594.95	-0.01	0.47	-0.01	7.00	5.00
6100.000	310.00	596.01	0.0	1.05	0.0	150.00	112.00
6100.000	310.00	596.00	-0.00	1.05	-0.00	150.00	112.00
6965.000	310.00	596.04	0.0	0.03	0.0	132.42	865.00
6965.000	310.00	596.03	-0.01	0.02	-0.01	50.00	865.00
7081.000	310.00	596.01	0.0	-0.03	0.0	33.64	100.00
7081.000	310.00	596.01	0.00	-0.02	0.00	33.64	100.00
7082.000	310.00	595.58	0.0	-0.43	0.0	31.60	5.00
7082.000	310.00	595.58	0.00	-0.43	0.00	31.60	5.00
7083.000	310.00	595.85	0.0	0.27	0.0	32.86	24.00
7083.000	310.00	595.85	0.00	0.27	0.00	32.87	24.00
7084.000	310.00	597.12	0.0	1.27	0.0	175.00	5.00
7084.000	310.00	597.12	0.00	1.27	0.00	175.00	5.00
7200.000	310.00	597.16	0.0	0.05	0.0	150.00	100.00
7200.000	310.00	597.15	-0.01	0.04	-0.01	50.00	100.00
8140.000	310.00	597.24	0.0	0.07	0.0	80.80	925.00
8140.000	310.00	597.25	0.01	0.09	0.01	39.38	925.00
8269.000	310.00	597.21	0.0	-0.02	0.0	39.04	100.00
8269.000	310.00	597.23	0.01	-0.02	0.01	39.12	100.00
8270.000	310.00	596.78	0.0	-0.43	0.0	35.25	5.00
8270.000	310.00	596.79	0.01	-0.43	0.01	35.31	5.00
8271.000	310.00	597.29	0.0	0.51	0.0	39.61	43.00
8271.000	310.00	597.30	0.01	0.51	0.01	39.69	43.00

SECND	Q	CUSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLOP
8272.000	310.00	598.51	0.0	1.22	0.0	95.56	5.00
8272.000	310.00	598.52	0.01	1.22	0.01	95.62	5.00
8541.000	310.00	598.53	0.0	0.02	0.0	136.11	209.00
8541.000	310.00	598.54	0.01	0.02	0.01	136.69	209.00
8542.000	310.00	599.03	0.0	0.49	0.0	150.00	58.00
8542.000	310.00	599.03	0.01	0.49	0.01	150.00	58.00
8675.000	310.00	599.07	0.0	0.04	0.0	150.00	105.00
8675.000	310.00	599.07	0.01	0.04	0.01	150.00	105.00
9030.000	310.00	599.07	0.0	0.01	0.0	150.00	355.00
9030.000	310.00	599.07	-0.01	-0.00	-0.01	32.00	355.00
9150.000	310.00	599.09	0.0	0.01	0.0	150.00	105.00
9150.000	310.00	599.05	-0.03	-0.02	-0.03	16.90	105.00
9151.000	310.00	600.83	0.0	1.75	0.0	150.00	45.00
9151.000	310.00	600.82	-0.01	1.77	-0.01	150.00	45.00
9275.000	310.00	600.83	0.0	-0.00	0.0	150.00	105.00
9275.000	310.00	600.81	-0.02	-0.01	-0.02	32.00	105.00
9335.000	310.00	600.83	0.0	-0.00	0.0	150.00	60.00
9335.000	310.00	600.81	-0.02	-0.00	-0.02	30.50	60.00
10200.000	310.00	600.84	0.0	0.01	0.0	150.00	365.00
10200.000	310.00	600.86	0.02	0.05	0.02	29.00	365.00

SUMMARY OF ERRORS

FLOODWAY DATA, LULL DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
130.000	29.	107.	4.4	586.2	586.2	0.0
234.000	25.	103.	4.5	586.4	586.4	0.0
235.000	25.	114.	4.1	586.8	586.8	0.0
350.000	31.	122.	3.8	587.1	587.1	0.0
800.000	33.	121.	3.9	587.9	587.9	0.0
901.000	29.	89.	5.3	587.9	587.9	0.0
902.000	42.	213.	2.2	591.3	591.3	0.0
1020.000	42.	250.	1.9	591.4	591.4	0.0
1870.000	20.	144.	3.3	591.7	591.7	0.0
1997.000	14.	77.	4.9	591.7	591.6	0.1
1998.000	14.	51.	5.8	591.6	591.5	0.1
1999.000	14.	52.	5.8	591.8	591.7	0.1
2000.000	14.	102.	4.6	592.0	591.9	0.1
2125.000	41.	201.	2.3	592.4	592.3	0.1
3000.000	40.	192.	2.4	592.6	592.5	0.1
3800.000	37.	192.	2.6	592.9	592.8	0.1
3900.000	85.	253.	1.9	592.9	592.8	0.1
4650.000	105.	222.	2.1	593.1	593.0	0.1
4750.000	85.	253.	1.9	593.1	593.1	0.0
5130.000	150.	200.	1.6	593.3	593.2	0.1
5230.000	101.	145.	3.2	593.2	593.1	0.1
5828.000	50.	140.	3.4	593.6	593.6	0.0
5958.000	15.	38.	3.1	593.2	593.2	0.0
5959.000	7.	29.	10.7	593.0	593.0	0.0
5960.000	7.	36.	3.6	594.5	594.5	0.0
5961.000	7.	43.	7.2	595.0	595.0	0.0
6100.000	150.	470.	0.6	596.0	596.0	0.0
6965.000	50.	151.	1.9	596.0	596.0	0.0
7081.000	34.	125.	2.5	596.0	596.0	0.0
7082.000	32.	38.	8.1	595.6	595.6	0.0
7083.000	33.	38.	8.1	595.8	595.8	0.0
7084.000	175.	264.	1.2	597.1	597.1	0.0
7200.000	50.	213.	1.5	597.2	597.2	0.0
8140.000	39.	193.	1.6	597.2	597.2	0.0
8269.000	39.	145.	2.1	597.2	597.2	0.0
8270.000	36.	39.	3.0	596.8	596.8	0.0
8271.000	40.	39.	3.0	597.3	597.3	0.0
8272.000	97.	239.	1.3	598.5	598.5	0.0
8541.000	150.	256.	1.1	598.5	598.5	0.0
8542.000	150.	357.	0.9	599.0	599.0	0.0
8675.000	150.	562.	0.6	599.1	599.1	0.0
9030.000	32.	209.	1.5	599.1	599.1	0.0
9150.000	17.	121.	2.6	599.1	599.1	0.0
9151.000	150.	917.	0.3	600.8	600.8	0.0
9275.000	32.	259.	1.2	600.8	600.8	0.0
9335.000	30.	234.	1.3	600.8	600.8	0.0
10200.000	29.	213.	1.5	600.8	600.8	0.0

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: LULL DRAIN

4) DOCUMENT TYPE: 100YR - NATURAL

00BREAK00

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*****************************************
HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
ERROR CORR -  01,02,03
MODIFICATION -  50,51,52,53
*****************************************

C
T1      LULL DRAIN, SAGINAW, PROJECT NO. 8556, NEWLULA
T2      LULL DRAIN, CLEANED, NEW CULVERTS, PORTION RELOCATED, 1930
T3      LULL DRAIN

J1  ICHECK    INQ       NWPV      IDIR      STRT      METRIC    HVINS     Q         NSEL      FQ
        0.        4.        0.        0.  0.002400    0.0       0.0       0.   600.000    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IEN       CHNMY     ITRACE
       0.0       0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

     110.000   150.000   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

QT      5.000   330.000   430.000   470.000   560.000   470.000     0.0       0.0       0.0       0.0
NC      0.040     0.040     0.037     0.100     0.300     0.0       0.0       0.0       0.0       0.0

        A 130 FT U/S FROM CONFLUENCE WITH KING DRAIN,BACKWATER OF SAGINAW 593.36

X1    130.000     6.000   100.000   132.500   130.000   130.000   130.000     0.0       0.0       0.0
GR    586.600    50.000   587.000   100.000   530.400   111.000   580.400   119.000   587.400   132.500
GR    586.700   175.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.0       0.0       0.0       0.300     0.500     0.0       0.0       0.0       0.0       0.0

        B FOOT BRIDGE, TR 536.5, LC 585.6

X1    234.000     9.000   102.500   127.500   103.000   103.000   103.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     102.500     0.0     127.500     0.0       0.0       0.0       0.0
GR    586.600    50.000   586.500   102.500   585.600   102.500   530.600   111.000   580.600   119.000
GR    585.600   127.500   586.500   127.500   536.700   175.000     0.0       0.0       0.0       0.0
SB      0.0       1.540     2.500    25.000     8.000     0.0      82.500     2.000   580.600   580.600

X1    235.000     0.0       0.0       0.0       4.500     4.500     4.500     0.0       0.0       0.0
X2      0.0       0.0       1.000   585.600   586.500     0.0       0.0       0.0       0.0       0.0
X3      0.0       0.0       0.0     102.500     0.0     127.500     0.0       0.0       0.0       0.0

        C

X1    350.000     7.000    94.000   134.700   114.000   114.000   114.000     0.0       0.0       0.0
GR    589.600    50.000   591.300    93.000   590.000    94.000   590.800   111.000   580.800   119.000
GR    589.500   134.700   589.700   200.000     0.0       0.0       0.0       0.0       0.0       0.0
NC      0.0       0.0       0.0       0.100     0.300     0.0       0.0       0.0       0.0       0.0

        D

X1    800.000     7.000    94.000   134.700   450.000   450.000   450.000     0.0       0.0       0.0
GR    589.600    50.000   591.300    88.000   590.000    94.000   582.000   111.000   582.000   119.000
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GR	589.300	134.700	580.700	200.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

E WILKINS ST CULVERT, TR 590.5, LC 587.7

3.2X5.0 STRUCTURAL PLATE PIPE ARCH

X1	901.000	11.000	115.300	124.200	90.000	90.000	90.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	100.000	0.0	142.000	0.0	0.0	0.0	0.0
GR	589.300	50.000	590.500	100.000	583.300	115.300	582.300	117.000	582.000	118.000
GR	581.900	120.000	582.000	122.000	582.300	123.000	583.200	124.200	590.800	142.000
GR	590.300	200.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SE	0.0	2.350	2.500	42.000	8.400	0.0	40.000	0.0	582.300	582.300

X1	902.000	0.0	0.0	0.0	31.000	31.000	31.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	587.700	590.500	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	100.000	0.0	142.000	0.0	0.0	0.0	0.0
BT	9.000	100.000	590.500	590.500	115.300	590.500	583.300	117.000	590.500	586.300
BT	118.000	590.500	587.100	120.000	590.500	587.700	122.000	590.500	587.100	123.000
BT	590.500	586.300	124.200	590.500	583.800	142.000	590.800	590.300	0.0	0.0

F

X1	1020.000	9.000	100.000	142.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	100.000	0.0	142.000	0.0	0.0	0.0	0.0
GR	589.800	50.000	590.000	100.000	583.600	111.000	583.200	114.400	582.400	115.000
GR	582.400	124.000	590.800	142.000	590.400	160.000	590.400	200.000	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	112.000	132.000

G

X1	1870.000	7.000	97.000	146.000	850.000	850.000	850.000	0.0	0.0	0.0
GR	594.000	50.000	594.000	97.000	584.000	116.000	594.000	124.000	584.500	129.000
GR	594.000	146.000	594.000	200.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

H WASHINGTON ST CULVERT, TR 595.89, LC 593.2

14.3X9.9 STRUCTURAL PLATE PIPE ARCH

X1	1997.000	13.000	113.000	127.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	595.000	595.000	0.0
GR	595.000	50.000	595.800	97.000	586.600	113.000	585.100	114.000	584.700	116.000
GR	584.400	118.000	584.300	120.000	584.400	122.000	584.700	124.000	585.100	126.000
GR	586.600	127.000	595.300	146.000	595.300	200.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	1998.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	595.000	595.000	0.0
BT	12.000	50.000	595.000	595.000	97.000	595.000	595.800	113.000	595.300	586.600
BT	114.000	595.600	588.900	116.000	595.800	590.900	118.000	595.800	592.900	120.000
BT	595.800	593.200	122.000	595.800	592.900	124.000	595.800	590.900	126.000	595.800
BT	583.900	127.000	595.300	586.600	146.000	595.800	595.800	0.0	0.0	0.0

X1	1999.000	0.0	0.0	0.0	43.000	43.000	43.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	595.900	595.300	0.0
NC	0.0	0.0	0.027	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	2000.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	595.300	595.300	0.0

I STATION 21+08-BEGIN RELOCATION

X1	2125.000	7.000	160.000	208.700	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	208.700	0.0	0.0	0.0	0.0
GR	594.500	100.000	594.500	160.000	584.200	181.000	584.200	189.000	594.100	208.700
GR	593.900	220.000	591.500	260.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

J

X1	3000.000	6.000	155.800	215.700	375.000	375.000	375.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	155.800	0.0	215.700	0.0	0.0	0.0	0.0
GR	597.200	100.000	597.200	155.800	584.600	181.000	584.600	139.000	593.000	215.700
GR	598.000	240.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

K STATION 38+44-END RELOCATION

X1	3800.000	7.000	165.000	203.500	300.000	300.000	300.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	165.000	0.0	203.500	0.0	0.0	0.0	0.0
GR	592.500	100.000	592.500	165.000	585.100	181.000	585.100	189.000	592.300	203.500
GR	593.500	220.000	592.500	240.000	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	55.000	140.000

L

X1	3900.000	8.000	97.700	127.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	592.000	50.000	590.900	97.700	585.300	109.000	585.300	117.000	590.400	127.000
GR	591.600	140.000	593.100	145.000	595.500	200.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	55.000	160.000

M STATION 47+10 TO 51+81-DIG ON SOUTH SIDE OF DRAIN

X1	4550.000	7.000	106.000	147.000	750.000	750.000	750.000	0.0	0.0	0.0
GR	592.600	50.000	592.500	106.000	586.300	124.000	586.300	132.000	589.500	139.000
GR	591.400	147.000	594.000	200.000	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	60.000	145.000

N

X1	4750.000	9.000	100.000	135.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	592.300	20.000	591.300	97.000	590.800	100.000	586.500	104.000	587.500	114.200
GR	586.500	116.000	586.500	124.000	592.800	135.000	592.800	170.000	0.0	0.0

O

X1	5130.000	0.0	0.0	0.0	330.000	380.000	380.000	0.0	0.200	0.0

P

X1	5230.000	6.000	107.000	134.200	100.000	100.000	100.000	0.0	0.0	0.0
GR	592.300	50.000	592.500	107.000	587.000	116.000	587.000	124.000	592.600	134.200
GR	594.700	200.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Q

X1	5828.000	6.000	106.400	134.200	598.000	598.000	598.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	95.000	0.0	145.000	0.0	0.0	0.0	0.0
GR	593.600	50.000	592.500	106.400	587.600	116.000	587.600	124.000	592.600	134.200
GR	594.700	200.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

R SHERIDAN RD CULVERT, TR 596.6, LC 594.9

7.0 ROUND CORRUGATED METAL PIPE

X1	5958.000	11.000	111.500	118.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	50.000	0.0	170.000	0.0	0.0	0.0	0.0
QT	5.000	215.000	280.000	310.000	370.000	310.000	0.0	0.0	0.0	0.0
GR	596.000	50.000	596.500	100.000	591.400	111.500	589.600	112.000	588.600	113.000
GR	587.900	115.000	583.600	117.000	589.600	118.000	591.400	118.500	596.600	129.000
GR	596.000	179.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	5959.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	111.500	596.600	118.500	596.600	0.0	0.0	0.0
BT	11.000	50.000	596.000	596.000	100.000	596.600	596.600	111.500	596.600	591.400
BT	112.000	596.600	593.200	113.000	596.600	594.400	115.000	596.600	594.900	117.000
BT	596.600	594.400	113.000	596.600	593.200	118.500	596.600	591.400	129.000	596.600
BT	596.600	179.000	596.000	596.000	0.0	0.0	0.0	0.0	0.0	0.0

X1	5960.000	0.0	0.0	0.0	50.000	50.000	50.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	111.500	596.600	118.500	596.600	0.0	0.0	0.0

X1	5961.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	111.500	596.600	118.500	596.600	0.0	0.0	0.0

S

X1	6100.000	6.000	100.000	129.000	112.000	112.000	112.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	50.000	0.0	200.000	0.0	0.0	0.0	0.0
GR	594.000	0.0	593.500	100.000	588.000	111.000	588.000	119.000	593.100	129.000
GR	594.000	225.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	80.000	130.000

T

X1	6965.000	6.000	103.000	133.000	865.000	865.000	865.000	0.0	0.0	0.0
GR	596.500	0.0	595.200	103.000	588.800	116.000	588.800	124.000	595.300	135.000
GR	596.500	225.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

U PRIVATE DRIVE CULVERT, TR 596.3, LC 594.7

6.6X5.9 STRUCTURAL PLATE PIPE ARCH

X1	7081.000	11.000	115.700	124.300	100.000	100.000	100.000	0.0	0.0	0.0
GR	596.500	50.000	596.300	103.000	590.700	115.700	589.300	116.500	588.900	118.000
GR	588.800	120.000	580.900	122.000	589.300	123.500	590.700	124.300	596.300	138.000
GR	596.500	225.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	7082.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
BT	11.000	50.000	596.500	596.500	103.000	596.300	596.300	115.700	596.300	590.700
BT	116.500	596.300	592.800	118.000	596.300	594.100	120.000	596.300	594.700	122.000
BT	596.300	594.100	123.500	596.300	592.800	124.300	596.300	590.700	133.000	596.300
BT	596.300	200.000	596.500	596.500	0.0	0.0	0.0	0.0	0.0	0.0
X1	7083.000	0.0	0.0	0.0	24.000	24.000	24.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	7084.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	100.000	150.000

V

X1	7200.000	6.000	103.000	133.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	596.700	50.000	595.400	103.000	589.000	115.000	589.000	124.000	596.000	135.000
GR	596.500	200.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	110.000	150.000

W

X1	8140.000	10.000	111.000	150.500	925.000	925.000	925.000	0.0	0.0	0.0
GR	600.000	50.000	599.200	100.000	597.500	105.000	597.000	111.300	591.000	119.000
GR	590.600	123.600	589.600	126.000	589.600	134.000	597.800	150.500	595.000	200.000
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

X DRIVEWAY CULVERT, TR 593.3, LC 595.6

8.6X5.9 STRUCTURAL PLATE PIPE ARCH

X1	8269.000	12.000	125.700	134.300	100.000	100.000	100.000	0.0	0.0	0.0
GR	600.000	50.000	599.200	100.000	597.000	111.000	591.600	125.700	590.200	126.500
GR	589.800	123.000	589.700	130.000	589.800	132.000	590.200	133.500	591.600	134.300
GR	597.800	150.500	597.800	200.000	0.0	0.0	0.0	0.0	0.0	0.0
X1	8270.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
BT	12.000	50.000	600.000	600.000	100.000	599.200	599.200	111.000	593.300	597.000
BT	125.700	598.300	591.600	126.500	598.300	593.900	128.000	593.300	595.100	130.000
BT	598.300	595.600	132.000	598.300	595.100	133.500	598.300	593.900	134.300	593.300
BT	591.600	150.500	597.800	597.800	200.000	597.800	597.800	0.0	0.0	0.0
X1	8271.000	0.0	0.0	0.0	48.000	48.000	48.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	8272.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0

Y WILLIAMSTON RD CULVERT, TR 598.8, LC 595.3

X1	8541.000	8.000	112.500	123.500	209.000	209.000	209.000	0.0	0.0	0.0
GR	596.900	50.000	598.300	101.000	590.800	112.500	590.000	114.000	590.000	122.000
GR	590.800	123.500	598.300	133.000	596.000	200.000	0.0	0.0	0.0	0.0
SB	0.0	1.670	2.500	32.000	11.000	0.0	57.100	0.0	590.200	590.000
X1	8542.000	0.0	0.0	0.0	58.000	58.000	58.000	0.0	0.0	0.0

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X2      0.0       0.0       1.000   595.300   593.800     0.0       0.0       0.0       0.0       0.0
BT      6.000    50.000   593.800   593.800   101.000   593.500   593.300   112.500   593.300   595.300
BT    123.500   593.800   595.300   133.000   593.800   593.800   200.000   593.300   593.300     0.0

Z

X1   8675.000     6.000   101.000   133.000   105.000   105.000   105.000     0.0       0.0       0.0
GR    596.800    50.000   596.500   101.000   590.100   114.000   590.100   122.000   595.500   133.000
GR    596.000   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.0       0.0       0.0       0.100     0.300     0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     101.000   133.000

AA

X1   9030.000     0.0       0.0       0.0     355.000   355.000   355.000     0.0       0.200     0.0
NC      0.0       0.0       0.0       0.300     0.500     0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     109.500   126.300

AB  GRAND TRUNK WESTERN RAILROAD CULVERT, TR 600.7, LC 595.4

5 & 4.5 ROUND CONCRETE PIPES

X1   9150.000    14.000   109.500   126.300   105.000   105.000   105.000     0.0       0.0       0.0
GR    597.500    50.000   596.500   101.000   592.900   109.500   591.400   110.000   590.400   112.000
GR    591.400   114.000   592.900   114.500   592.700   121.700   591.600   122.000   590.400   124.000
GR    591.600   126.000   592.700   126.300   595.500   133.000   592.000   200.000     0.0       0.0
SB      1.250     1.650     2.500    32.000    16.000     7.200    35.500     0.0     591.500   591.500

X1   9151.000     0.0       0.0       0.0      45.000    45.000    45.000     0.0       0.0       0.0
X2      0.0       0.0       1.000   595.400   600.700     0.0       0.0       0.0       0.0       0.0
BT     14.000    50.000   600.700   597.500   101.000   600.700   596.500   109.500   600.700   592.900
BT    110.000   600.700   594.200   112.000   600.700   595.400   114.000   600.700   594.200   114.500
BT    600.700   592.900   121.700   600.700   592.700   122.000   600.700   593.300   124.000   600.700
BT    594.900   126.000   600.700   593.800   126.300   600.700   592.700   133.000   600.700   595.500
BT    200.000   600.700   592.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     101.000   133.000

AC  STATION 93+00-TRANSITION POINT, DITCH WIDTH FROM 8 FT CHANGE TO 6 FT

X1   9275.000     6.000   101.000   133.000   105.000   105.000   105.000     0.0       0.0       0.0
GR    597.300    50.000   597.000   101.000   590.400   114.000   590.400   122.000   596.000   133.000
GR    596.500   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.0       0.0       0.0       0.100     0.300     0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     104.000   134.500

AD

X1   9335.000     9.000   104.000   134.500    60.000    60.000    60.000     0.0       0.0       0.0
GR    597.300    50.000   596.500   104.000   593.400   109.000   593.300   110.000   590.600   115.000
GR    590.600   121.000   597.500   134.500   598.600   150.000   598.000   200.000     0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     97.000   126.000

AE

X1  10200.000    10.000    97.300   126.000   365.000   365.000   365.000     0.0       0.0       0.0
GR    597.500    50.000   596.900    97.300   591.300   103.000   591.300   114.200   593.400   113.000
GR    593.500   120.000   597.000   126.300   597.800   132.000   593.800   145.000   597.500   200.000
EJ      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 130.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       CLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOP'ID    ENDST

        A 130 FT U/S FROM CONFLUENCE WITH KING DRAIN.BACKWATER OF SAGINAW 593.36

   130.00     5.79   586.19     0.0    600.00   586.50     0.30     0.0      0.0    587.00
     470.       0.     470.       0.       0.     107.       0.       0.       0.    587.40
     0.0      0.0     4.40      0.0    0.040    0.037    0.040     0.0    580.40    101.34
 0.002398     130.    130.     130.        0        0        9    -0.00    23.83    130.18

CCHV    0.300 CEHV    0.500
*SECNO 234.000

3470 ENCROACHMENT STATIONS      102.5     127.5  TYPE      1  TARGET       25.000

        3  FOOT BRIDGE, TR 536.5, LC 585.6

   234.00     5.83   586.43     0.0      0.0   586.75     0.32     0.25     0.01    586.50
     470.       0.     470.       0.       0.     103.       0.       0.       0.  100000.00
     0.01      0.0     4.55      0.0    0.040    0.037    0.040    0.037   580.60    102.50
 0.002394     103.    103.     103.        1        0        0    -0.00    25.00    127.50

SPECIAL BRIDGE

SB  XK        XKOR      COEQ      RDLEN     BWC       SWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.54      2.50     25.00      8.00      0.0      92.50     2.00     580.60    580.60

*SECNO 235.000
3280 CROSS SECTION    235.00 EXTENDED      0.14 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID     ELLC     ELTRD
                                                                AREA
   587.21    586.75     0.0        30.      439.       83.       90.      535.60    536.50

3470 ENCROACHMENT STATIONS      102.5     127.5  TYPE      1  TARGET       25.000
   235.00     6.24   586.84     0.0      0.0   587.11     0.27     0.36     0.0    586.50
     470.       0.     470.       0.       0.     114.       0.       0.       0.  100000.00
     0.01      0.0     4.14      0.0    0.040    0.037    0.040    0.036   580.60    102.50
 0.001816       5.      5.        5.        2        0        3    -0.00    25.00    127.50

*SECNO 350.000

        C

   350.00     6.29   587.09     0.0      0.0   587.32     0.23     0.20     0.01    590.00
     470.       0.     470.       0.       0.     122.       0.       1.       0.    589.50
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    0.01      0.0      3.54      0.0      0.040    0.037    0.040    0.037   580.80    99.39
 0.001671    114.     114.     114.        0        0        0    -0.00    30.94   130.34

CCHV    0.100 CEHV    0.300
*SECNO 800.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       FL       OLOSS   BANK ELEV
   G        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      XTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

        0

   800.00     5.88   587.87      0.0      0.0   588.11     0.24     0.79     0.00   590.00
     470.       0.     470.       0.       0.     121.       0.       2.       0.   589.30
     0.05      0.0     3.89      0.0    0.040    0.037    0.040    0.037   582.00    98.52
 0.001854     450.     450.     450.        0        0        0    -0.00    33.11   131.63

CCHV    0.300 CEHV    0.500
*SECNO 901.000

3470 ENCROACHMENT STATIONS      100.0     142.0  TYPE      1  TARGET       42.000

        E  WILKINS ST CULVERT, TR 590.5, LC 587.7

          8.2X5.8 STRUCTURAL PLATE PIPE ARCH

   901.00     6.04   537.94      0.0      0.0   588.50     0.56     0.23     0.15   583.80
     470.      70.     325.      76.      20.      47.      22.       2.       1.   583.80
     0.05     3.45     6.87     3.48    0.040    0.037    0.040    0.037   581.90   106.04
 0.003653      90.      90.      90.        2        0        0    -0.00    28.63   134.72

SPECIAL BRIDGE

SB  XK        XKOR      COFG      RDLEN     BWC       BWP       SAREA     SS        ELCHU     ELCHD
    0.0       2.36      2.50      42.00     8.40      0.0       40.00     0.0      582.30    582.30

*SECNO 902.000
3230 CROSS SECTION    902.00 EXTENDED      0.52 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLWC      HB       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
   593.00   538.78     0.0        82.      389.       40.       45.      587.70    590.50

3470 ENCROACHMENT STATIONS      100.0     142.0  TYPE      1  TARGET       42.000
   902.00     9.42   591.32      0.0      0.0   591.41     0.10     2.91     0.0    583.80
     470.     114.     232.     124.      66.      76.      72.       2.       1.   583.80
     0.05     1.74     3.06     1.73    0.040    0.037    0.040    0.037   581.90   100.00
 0.000388      31.      31.      31.        2        0        3    -0.00    42.00   142.00

*SECNO 1020.000
3230 CROSS SECTION   1020.00 EXTENDED      1.00 FEET
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3470 ENCROACHMENT STATIONS       100.0      142.0  TYPE      1  TARGET        42.000

        F

  1020.00      9.00    591.40      0.0       0.0     591.46      0.05      0.03      0.01    590.00
     470.        0.      470.       0.        0.      250.        0.        3.        1.  100000.00
     0.07       0.0      1.69      0.0     0.040     0.037     0.040     0.037    532.40    100.00
 0.000241      100.     100.      100.         2         0         0     -0.00     42.00    142.00

CCHV     0.100 CEHV     0.300
*SECNO 1870.000

        G

  1870.00      7.65    591.65      0.0       0.0     591.74      0.09      0.28      0.01    594.00
     470.        0.      470.       0.        0.      200.        0.        7.        1.    594.00
     0.17       0.0      2.35      0.0     0.040     0.037     0.040     0.037    584.00    101.45
 0.000457      850.     850.      850.         1         0         0     -0.00     40.37    141.51

CCHV     0.300 CEHV     0.500
*SECNO 1997.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XML       XNCH      XMR       XTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        595.00 ELREA        595.00

        H  WASHINGTON ST CULVERT, TR 595.8, LC 593.2

           14.3X6.9 STRUCTURAL PLATE PIPE ARCH

  1997.00      7.28    591.53      0.0       0.0     591.96      0.38      0.07      0.15    586.60
     470.        0.      470.       0.        0.       95.        0.        7.        2.    586.60
     0.18       0.0      4.95      0.0     0.040     0.037     0.040     0.037    584.30    113.00
 0.001369      100.     100.      100.         2         0         0     -0.00     14.00    127.00

*SECNO 1998.000

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   595.00 MAX ELLC   595.60

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        595.00 ELREA        595.00

  1998.00      7.21    591.51      0.0       0.0     592.05      0.54      0.01      0.08    586.60
     470.        0.      470.       0.        0.       80.        0.        7.        2.    586.60
     0.18       0.0      5.85      0.0     0.040     0.031     0.040     0.037    584.30    113.00
 0.003742        5.        5.        5.         2         0         0    -39.26     14.00    127.00

*SECNO 1999.000

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   595.00 MAX ELLC   595.80

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        595.80 ELREA        595.80
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  1999.00     7.39   591.69     0.0      0.0    592.21     0.52     0.16     0.00   586.60
     470.       0.     470.       0.       0.      31.       0.       7.       2.    586.60
     0.18      0.0     5.33      0.0    0.040    0.031    0.040    0.037   534.30   113.00
 0.003649      43.      43.      43.        2        0        0   -42.43    14.00   127.00

*SECNO 2000.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       595.80 ELREA       595.80

  2000.00     7.63   591.93     0.0      0.0    592.27     0.34     0.01     0.05   586.60
     470.       0.     470.       0.       0.     100.       0.       9.       2.    586.60
     0.18      0.0     4.69      0.0    0.040    0.027    0.040    0.037   534.30   113.00
 0.000517       5.       5.       5.        2        0        0    -0.00    14.00   127.00

*SECNO 2125.000
3280 CROSS SECTION   2125.00 EXTENDED      0.80 FEET


3470 ENCROACHMENT STATIONS       160.0     208.7  TYPE       1  TARGET       48.700

        I  STATION 21+08-BEGIN RELOCATION

  2125.00     8.10   592.30     0.0      0.0    592.39     0.09     0.04     0.08   594.50
     470.       0.     470.       0.       0.     197.       0.       8.       2. 100000.00
     0.19      0.0     2.37      0.0    0.040    0.027    0.040    0.036   534.20   164.49
 0.000258     100.     100.     100.        2        0        0    -0.00    40.62   205.11


CCHV    0.100 CEHV    0.300
*SECNO 3000.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        DLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS       155.8     215.7  TYPE       1  TARGET       59.900

        J

  3000.00     7.93   592.53     0.0      0.0    592.63     0.10     0.24     0.00   597.20
     470.       0.     470.       0.       0.     189.       0.      12.       2. 100000.00
     0.29      0.0     2.49      0.0    0.040    0.027    0.040    0.033   534.60   165.14
 0.000287     875.     875.     875.        2        0        0    -0.00    39.66   204.40

*SECNO 3800.000
3280 CROSS SECTION   3800.00 EXTENDED      0.26 FEET


3470 ENCROACHMENT STATIONS       166.0     203.5  TYPE       1  TARGET       37.500

        K  STATION 38+44-END RELOCATION

  3800.00     7.67   592.77     0.0      0.0    592.87     0.11     0.24     0.00   592.50
     470.       0.     470.       0.       0.     179.       0.      15.       3. 100000.00
     0.37      0.0     2.62      0.0    0.040    0.027    0.040    0.032   535.10   166.00
 0.000323     800.     800.     800.        1        0        0    -0.00    37.50   203.50

*SECNO 3900.000
```

3280 CROSS SECTION 3900.00 EXTENDED 0.82 FEET

L

3900.00	7.52	592.82	0.0	0.0	592.90	0.08	0.03	0.00	590.90
470.	43.	404.	21.	65.	163.	27.	16.	3.	590.40
0.38	0.69	2.43	0.79	0.040	0.027	0.040	0.032	535.30	50.00
0.000229	100.	100.	100.	2	0	0	-0.00	94.87	144.87

*SECNO 4650.000
3280 CROSS SECTION 4650.00 EXTENDED 0.42 FEET

A STATION 47+10 TO 51+81-DIG ON SOUTH SIDE OF DRAIN

4650.00	6.71	593.01	0.0	0.0	593.11	0.09	0.20	0.00	592.50
470.	11.	444.	16.	26.	175.	27.	20.	5.	591.40
0.47	0.40	2.53	0.58	0.040	0.027	0.040	0.031	586.30	50.00
0.000324	750.	750.	750.	1	0	0	-0.01	130.02	180.02

*SECNO 4750.000
3280 CROSS SECTION 4750.00 EXTENDED 0.77 FEET

N

4750.00	6.57	593.07	0.0	0.0	593.14	0.06	0.03	0.00	590.80
470.	66.	402.	2.	104.	184.	9.	20.	6.	592.80
0.49	0.63	2.19	0.22	0.040	0.027	0.040	0.031	536.50	20.00
0.000206	100.	100.	100.	2	0	0	-0.00	150.00	170.00

*SECNO 5130.000
3280 CROSS SECTION 5130.00 EXTENDED 0.65 FEET

SECNO	DEPTH	CHSEL	CRIWS	HSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VCL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

D

5130.00	6.45	593.15	0.0	0.0	593.22	0.07	0.08	0.00	591.00
470.	60.	410.	1.	94.	179.	5.	23.	7.	593.00
0.54	0.63	2.29	0.16	0.040	0.027	0.040	0.031	536.70	20.00
0.000232	380.	380.	380.	2	0	0	-0.00	150.00	170.00

*SECNO 5230.000
3280 CROSS SECTION 5230.00 EXTENDED 0.27 FEET

P

5230.00	6.07	593.07	0.0	0.0	593.32	0.25	0.04	0.05	592.50
470.	15.	453.	2.	24.	112.	3.	23.	7.	592.60

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    0.54     0.64     4.05     0.43    0.040    0.027    0.040    0.031   587.00    50.00
 0.000947    100.     100.     100.        2        0        0    -0.01    98.91   148.91


*SECNO 5828.000

3470 ENCROACHMENT STATIONS        95.0      145.0  TYPE       1  TARGET        50.000

        Q

  5828.00     6.01   593.61      0.0      0.0   593.83     0.22     0.51     0.00   592.50
     470.      11.    451.       3.      11.    118.       9.      25.       6.   592.60
     0.59     0.99     3.31     0.39    0.040    0.027    0.040    0.030   587.60    95.00
 0.000777     59.0     593.     593.        2        0        0    -0.00    50.00   145.00


CCHV   0.300 CEHV    0.500
*SECNO 5958.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS        50.0      170.0  TYPE       1  TARGET       120.000

        R  SHERIDAN RD CULVERT, TR 596.6, LC 594.9


           7.0 ROUND CORRUGATED METAL PIPE

  5958.00     5.31   593.21   592.98      0.0   594.52     1.30     0.14     0.54   591.40
     310.      10.    291.       9.       4.      31.       3.      25.       3.   591.40
     0.59     2.79     9.43     2.76    0.040    0.027    0.040    0.030   537.90   107.49
 0.007265     100.     100.     100.        6       11        0    -0.00    14.68   122.17


*SECNO 5959.000

3301 HV CHANGED MORE THAN HVINS


3370 NORMAL BRIDGE,NRD  11 MIN ELTRD   596.00 MAX ELLC   596.60


3470 ENCROACHMENT STATIONS       111.5      113.5  TYPE       1  TARGET         7.000
 ELENCL     596.60  ELENCR     596.60
  5959.00     5.11   593.01      0.0      0.0   594.32     1.82     0.05     0.26   591.40
     310.       0.     310.       0.       0.      29.       0.      25.       8.   596.60
     0.59     0.0     10.81     0.0    0.040    0.027    0.040    0.030   587.90   111.50
 0.015059       5.       5.       5.        2        0        0    -0.72     7.00   113.50


*SECNO 5960.000

3301 HV CHANGED MORE THAN HVINS

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


3370 NORMAL BRIDGE,NRD  11 MIN ELTRD   596.00 MAX ELLC   596.60


3470 ENCROACHMENT STATIONS       111.5      113.5  TYPE       1  TARGET         7.000
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 ELENCL    596.60  ELENCR    596.60
 5960.00     6.56   594.45     0.0       0.0    595.63     1.15      0.50      0.20   591.40
     310.      0.     310.      0.        0.      30.       0.       25.        3.   596.60
    0.59     0.0      6.59     0.0     0.040     0.027     0.040     0.030    587.90   111.50
0.009364      50.      50.      50.         3         0         0     -3.57      7.00   118.50

*SECNO 5961.000

3470 ENCROACHMENT STATIONS      111.5     118.5  TYPE      1  TARGET        7.000
 ELENCL     596.60  ELENCR    596.60
 5961.00     7.06   594.98     0.0       0.0    595.77     0.81      0.04      0.10   591.40
     310.      0.     310.      0.        0.      43.       0.       25.        8.   596.60
    0.59     0.0      7.21     0.0     0.040     0.027     0.040     0.030    587.93   111.50
0.005339      5.       5.       5.         3         0         0     -0.00      7.00   118.50

*SECNO 6100.000
3280 CROSS SECTION   6100.00 EXTENDED      2.01 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS       50.0     200.0  TYPE      1  TARGET      150.000
      S
 6100.00     8.01   596.01     0.0       0.0    596.02     0.01      0.01      0.24   593.50
     310.      47.     137.      76.      119.     175.     133.       26.        8.   593.10
    0.63     0.39     1.06     0.42     0.040     0.027     0.040     0.030    588.00    50.00
0.000037     112.     112.     112.         2         0         0     -0.00    150.00   200.00

CCHV   0.100 CEHV    0.300
*SECNO 6965.000
      T
 6965.00     7.24   596.04     0.0       0.0    596.09     0.05      0.06      0.01   595.20
     310.      8.     302.      0.       28.     163.       4.       33.       11.   595.80
    0.76     0.27     1.85     0.12     0.040     0.027     0.040     0.030    568.80    35.04
0.000163     365.     365.     365.         2         0         0     -0.01    132.42   168.46

CCHV   0.300 CEHV    0.500
*SECNO 7081.000
      U  PRIVATE DRIVE CULVERT, TR 596.3, LC 594.7

         8.6X5.9 STRUCTURAL PLATE PIPE ARCH

 7081.00     7.21   596.01     0.0       0.0    596.17     0.16      0.03      0.05   590.70
     310.      45.     216.      43.      32.      59.      35.       33.       11.   590.70
    0.77     1.40     3.67     1.41     0.040     0.027     0.040     0.030    503.80   103.66
0.000436     100.     100.     100.         2         0         0     -0.00     33.64   137.29

*SECNO 7082.000

3301 HV CHANGED MORE THAN HVINS

   SECNO     DEPTH     CNSEL     CRIVS     SELK      EG        HV        HL      QLOSS   BANK ELEV
   0         GLOB      QCH       QCHF      GLOB      ACH       ABOV      VOL       T.A   LEFT/RIGHT
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     TIME      VLOB      VCH       VRDI      XNL       XNCH      XNP       VT        ELMIN     SSTA
     SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICOUT     CORAP     TOP.ID    EXDST


3370 NORMAL BRIDGE,NRD  11 MIN ELTRD  596.30 MAX ELLC  596.50

   7082.00     6.73    595.51    592.53      0.0     596.61     1.03      0.01      0.44    590.70
     310.       0.       310.       0.        0.       38.       0.       33.       11.     590.70
      0.77      0.0      8.15      0.0      0.040     0.027     0.040     0.030    588.80    104.64
  0.011183       5.       5.        5.        4        15         0     -73.32     31.60    136.23

*SECNO 7083.000

3370 NORMAL BRIDGE,NRD  11 MIN ELTRD  596.30 MAX ELLC  596.50

   7083.00     7.05    595.85    592.53      0.0     596.88     1.03      0.27      0.0     590.70
     310.       0.       310.       0.        0.       38.       0.       33.       11.     590.70
      0.77      0.0      8.15      0.0      0.040     0.027     0.040     0.030    588.80    104.03
  0.011183      24.      24.       24.        4        15         0     -81.97     32.86    136.39

*SECNO 7084.000
3230 CROSS SECTION   7084.00 EXTENDED      0.62 FEET

3301 HV CHANGED MORE THAN HVINS

   7084.00     3.32    597.12      0.0       0.0     597.17     0.06      0.00      0.29    590.70
     310.      63.      171.      75.       34.       65.      112.      33.       11.     590.70
      0.78      0.75     2.49      0.68     0.040     0.027     0.040     0.030    588.80     50.00
  0.000164       5.       5.        5.        3         0         0     -0.02    175.00    225.00

*SECNO 7200.000
3230 CROSS SECTION   7200.00 EXTENDED      0.67 FEET

V

   7200.00     8.16    597.16      0.0       0.0     597.19     0.03      0.01      0.01    595.40
     310.      20.      273.      17.       59.      195.      57.       34.       12.     596.00
      0.60      0.34     1.40      0.30     0.040     0.027     0.040     0.030    589.00     50.00
  0.000073     100.     100.      100.        2         0         0     -0.01    150.00    200.00

CCHV    0.100 CEHV    0.300
*SECNO 8140.000

3265 DIVIDED FLOW

3230 CROSS SECTION   8140.00 EXTENDED      2.24 FEET

H

   8140.00     7.64    597.24      0.0       0.0     597.27     0.03      0.08      0.00    597.00
     310.       0.      293.      17.        0.      192.      44.       40.       14.     597.80
      0.97      0.09     1.52      0.39     0.040     0.027     0.040     0.029    589.60    103.14
  0.000102     925.     925.      925.        2         0         0     -0.00     30.60    200.00
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CCHV   [illegible] CEHV   [illegible]
*SECNO 8269.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EC        HV        HL        CLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       NTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    TDC       ICONT     CORAR     TOP ID      ENDST

        X  DRIVEWAY CULVERT, TR 598.3, LC 595.6

           8.5X5.9 STRUCTURAL PLATE PIPE ARCH

  8269.00     7.51    597.21      0.0       0.0    597.33      0.12      0.02      0.04    591.60
     310.      56.     201.       53.       43.      62.       41.       40.       14.     591.60
     0.98     1.31      3.27      1.28     0.040    0.027     0.040     0.029    589.70    109.93
 0.000326     100.     100.      100.         2        0         0     -0.00     39.04    148.97

*SECNO 8270.000

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   597.80 MAX ELLC   600.00

  8270.00     7.08    596.74    593.44      0.0    597.77      0.99      0.00      0.44    591.60
     310.       0.     310.        0.        0.      39.        0.       40.       14.     591.60
     0.98      0.0      7.98      0.0     0.040    0.027     0.040     0.029    589.70    111.59
 0.010543       5.       5.        5.         4       16         0    -90.68     36.25    147.84

*SECNO 8271.000

3370 NORMAL BRIDGE,NRD  12 MIN ELTRD   597.80 MAX ELLC   600.00

  8271.00     7.59    597.29    593.44      0.0    598.28      0.99      0.51      0.0     591.60
     310.       0.     310.        0.        0.      39.        0.       40.       14.     591.60
     0.99      0.0      7.98      0.0     0.040    0.027     0.040     0.029    589.70    109.56
 0.010543      48.      48.       48.         4       16         0   -109.80     39.61    149.16

*SECNO 8272.000
3230 CROSS SECTION   8272.00 EXTENDED      0.71 FEET

3301 HV CHANGED MORE THAN HVINS

  8272.00     8.81    598.51      0.0       0.0    598.56      0.05      0.00      0.28    591.60
     310.      63.     169.       73.       68.      73.       97.       40.       14.     591.60
     0.99     1.01      2.32      0.75     0.040    0.027     0.040     0.029    589.70    103.44
 0.000132       5.       5.        5.         2        0         0     -0.00     96.56    200.00

*SECNO 8541.000

3265 DIVIDED FLOW

3230 CROSS SECTION   8541.00 EXTENDED      2.54 FEET

        Y  WILLIAMSTON RD CULVERT, TR 598.3, LC 595.3
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8541.00	6.50	593.50	0.0	0.0	596.58	0.05	0.02	0.00	590.00
310.	45.	203.	59.	79.	93.	113.	42.	15.	590.80
1.02	0.58	2.21	0.53	0.040	0.027	0.040	0.029	590.00	50.00
0.000096	209.	209.	209.	2	0	0	-0.01	136.11	200.00

SPECIAL BRIDGE

SB	XK	XKOR	COPD	RDLEN	BHC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	1.67	2.50	32.00	11.00	0.0	57.10	0.0	590.00	590.00

*SECND 8542.000
3230 CROSS SECTION 8542.00 EXTENDED 3.03 FEET

SECND	DEPTH	CISEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTA	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	EPDST

PRESSURE AND WEIR FLOW

ESPRS	EGLNC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
599.30	598.58	0.0	50.	258.	57.	53.	595.30	598.80

8542.00	9.03	597.03	0.0	0.0	599.06	0.03	0.43	0.0	590.80
310.	54.	105.	71.	109.	99.	149.	42.	15.	590.80
1.03	0.49	1.39	0.48	0.040	0.027	0.040	0.029	590.00	50.00
0.000067	53.	53.	53.	2	0	2	-0.01	150.00	200.00

*SECND 8675.000
3230 CROSS SECTION 8675.00 EXTENDED 3.07 FEET

Z

8675.00	8.97	599.07	0.0	0.0	599.07	0.01	0.00	0.01	596.50
310.	33.	103.	64.	123.	215.	222.	43.	16.	595.50
1.08	0.31	0.87	0.38	0.040	0.027	0.040	0.029	590.10	50.00
0.000022	105.	105.	105.	2	0	0	-0.01	150.00	200.00

CCHV 0.100 CEHV 0.300
*SECND 9030.000
3230 CROSS SECTION 9030.00 EXTENDED 2.80 FEET

AA

9030.00	8.77	599.07	0.0	0.0	599.08	0.01	0.01	0.00	596.70
310.	35.	193.	82.	114.	210.	210.	43.	17.	595.70
1.22	0.31	0.92	0.39	0.040	0.027	0.040	0.029	590.30	50.00
0.000025	355.	355.	355.	0	0	0	-0.01	150.00	200.00

CCHV 0.300 CEHV 0.500
*SECND 9150.000
3230 CROSS SECTION 9150.00 EXTENDED 7.05 FEET

AB GRAND TRUNK WESTERN RAILROAD CULVERT, TR 600,7, LC 595.4

5 & 4.5 ROUND CONCRETE PIPES

9150.00	6.6	595.03	0.0	0.0	594.05	0.00	0.00	0.00	592.90
310.	42.	90.	179.	143.	121.	330.	49.	17.	592.70
1.27	0.29	0.75	0.45	0.040	0.027	0.040	0.029	590.40	50.00
0.000019	105.	105.	105.	0	0	0	-0.00	150.00	200.00

SPECIAL BRIDGE

SB KK	XKOR	CDEQ	ROLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.65	2.50	32.00	16.00	7.20	35.50	0.0	591.50	591.50

*SECNO 9151.000
3280 CROSS SECTION 9151.00 EXTENDED 8.83 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	HO	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
601.03	599.09	0.01	18.	294.	36.	34.	595.40	600.70

9151.00	10.43	600.83	0.0	0.0	600.33	0.00	1.75	0.0	592.90
310.	61.	79.	171.	248.	151.	520.	50.	17.	592.70
1.31	0.24	0.52	0.33	0.040	0.027	0.040	0.029	590.40	50.00
0.000007	45.	45.	45.	0	0	3	-0.00	150.00	200.00

*SECNO 9275.000
3280 CROSS SECTION 9275.00 EXTENDED 4.33 FEET

SECNO	DEPTH	CNSEL	CRITS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	ELOB	QCH	QROB	ALOB	VCH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XML	XVCH	XWR	HTW	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	ICC	ICONT	CORAR	TOPWID	ENDST

AC STATION 93+00-TRANSITION POINT, DITCH WIDTH FROM 8 FT CHANGE TO 6 FT

9275.00	10.43	600.83	0.0	0.0	600.84	0.00	0.00	0.00	597.00
310.	49.	168.	93.	188.	260.	307.	52.	18.	596.00
1.37	0.26	0.65	0.30	0.040	0.027	0.040	0.029	590.40	50.00
0.000009	105.	105.	105.	0	0	0	-0.01	150.00	200.00

CCHV 0.100 CEHV 0.300
*SECNO 9335.000
3280 CROSS SECTION 9335.00 EXTENDED 3.53 FEET

AD

9335.00	10.23	600.83	0.0	0.0	600.64	0.01	0.00	0.00	596.50

316.	75.	105.	45.	212.	234.	170.	53.	18.	597.50
1.40	0.30	0.81	0.27	0.040	0.027	0.040	0.029	590.60	50.00
0.000016	63.	30.	50.	0	0	0	-0.01	150.00	200.00

*SECNO. 10200.000
3230 CROSS SECTION 10200.00 EXTENDED 3.34 FEET

AE

10200.00	9.54	600.84	0.0	0.0	500.85	0.01	0.02	0.00	596.90
310.	64.	193.	63.	172.	212.	202.	65.	21.	597.00
1.76	0.37	0.87	0.31	0.040	0.027	0.040	0.029	591.30	50.00
0.000020	865.	865.	865.	0	0	0	-0.01	150.00	200.00

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BRIDGEPORT TWP

3) WATERCOURSE: LULL DRAIN ( )

4) DOCUMENT TYPE: SUMMARY

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*************************************************
HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
ERROR CORR -  01.02.03
MODIFICATION -  50.51.52 53
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NOTE- ASTERISK, * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

LULL DRAIN

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	ES	TOPWID	WLOB	CCW	OROB	PERENC	STENCL	STCHL	STCHR	STENCR
130.000	585.29	-14.71	585.54	25.59	0.0	330.00	0.0	0.0	0.0	100.00	132.50	0.0
130.000	585.96	-14.04	586.24	27.97	0.0	430.00	0.0	0.0	0.0	100.00	132.50	0.0
130.000	586.19	-13.91	586.50	29.83	0.0	470.00	0.0	0.0	0.0	100.00	132.50	0.0
130.000	586.69	-13.31	587.02	42.40	0.13	559.87	0.0	0.0	0.0	100.00	132.50	0.0
234.000	585.54	0.0	585.80	24.79	0.0	330.00	0.0	25.00	102.50	102.50	127.50	127.50
234.000	586.19	0.0	586.50	25.00	0.0	430.00	0.0	25.00	102.50	102.50	127.50	127.50
234.000	586.43	0.0	586.75	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
234.000	586.93	0.0	587.29	25.00	0.0	560.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	585.68	0.0	585.92	25.00	0.0	330.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	586.56	0.0	586.81	25.00	0.0	430.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	586.84	0.0	587.11	25.00	0.0	470.00	0.0	25.00	102.50	102.50	127.50	127.50
235.000	587.42	0.0	587.72	25.00	0.0	560.00	0.0	25.00	102.50	102.50	127.50	127.50
350.000	585.95	0.0	586.16	26.79	0.0	330.00	0.0	0.0	0.0	94.00	134.70	0.0
350.000	586.80	0.0	587.02	29.90	0.0	430.00	0.0	0.0	0.0	94.00	134.70	0.0
350.000	587.09	0.0	587.32	30.94	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
350.000	587.69	0.0	587.93	33.16	0.0	560.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	586.84	0.0	587.05	23.73	0.0	330.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	587.60	0.0	587.83	31.92	0.0	430.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	587.87	0.0	588.11	33.11	0.0	470.00	0.0	0.0	0.0	94.00	134.70	0.0
800.000	588.44	0.0	588.68	35.56	0.0	560.00	0.0	0.0	0.0	94.00	134.70	0.0
901.000	586.93	0.0	587.49	23.76	36.15	254.58	39.26	42.00	100.00	115.80	124.20	142.00
901.000	587.68	0.0	588.23	27.39	59.65	305.57	64.78	42.00	100.00	115.80	124.20	142.00
901.000	587.94	0.0	588.50	28.68	69.71	324.59	75.70	42.00	100.00	115.80	124.20	142.00
901.000	588.49	0.0	589.06	31.38	93.55	364.85	101.60	42.00	100.00	115.80	124.20	142.00
902.000	589.30	0.0	589.43	35.37	63.29	197.98	68.73	42.00	100.00	115.80	124.20	142.00
902.000	591.04	0.0	591.13	42.00	102.17	217.93	109.91	42.00	100.00	115.80	124.20	142.00
902.000	591.32	0.0	591.41	42.00	114.50	231.66	123.84	42.00	100.00	115.80	124.20	142.00
902.000	591.84	0.0	591.95	42.00	141.71	263.70	154.59	42.00	100.00	115.80	124.20	142.00
1020.000	589.44	0.0	589.50	38.11	0.0	330.00	0.0	42.00	100.00	100.00	142.00	142.00
1020.000	591.12	0.0	591.17	42.00	0.0	430.00	0.0	42.00	100.00	100.00	142.00	142.00
1020.000	591.40	0.0	591.46	42.00	0.0	470.00	0.0	42.00	100.00	100.00	142.00	142.00
1020.000	591.93	0.0	591.99	42.00	0.0	560.00	0.0	42.00	100.00	100.00	142.00	142.00

SECND	CASEL	DIFCUS	ES	TOPAID	OLDB	SCH	DROB	PERENC	STENCL	STCHL	STCHR	STENCR
1870.000	589.32	0.0	589.92	33.59	0.0	330.00	0.0	0.0	0.0	97.00	146.00	0.0
1870.000	591.37	0.0	591.45	39.31	0.0	430.00	0.0	0.0	0.0	97.00	146.00	0.0
1870.000	591.65	0.0	591.74	40.37	0.0	470.00	0.0	0.0	0.0	97.00	146.00	0.0
1870.000	592.20	0.0	592.30	42.40	0.0	560.00	0.0	0.0	0.0	97.00	146.00	0.0
1997.000	589.81	0.0	590.15	14.00	0.0	330.00	0.0	0.0	0.0	113.00	127.00	0.0
1997.000	591.31	0.0	591.65	14.00	0.0	430.00	0.0	0.0	0.0	113.00	127.00	0.0
1997.000	591.58	0.0	591.96	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1997.000	592.10	0.0	592.56	14.00	0.0	560.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	589.79	0.0	590.19	14.00	0.0	330.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	591.25	0.0	591.72	14.00	0.0	430.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	591.51	0.0	592.05	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1998.000	591.99	0.0	592.70	14.00	0.0	560.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	589.93	0.0	590.31	14.00	0.0	330.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	591.41	0.0	591.86	14.00	0.0	430.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	591.69	0.0	592.21	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
1999.000	592.23	0.0	592.92	14.00	0.0	560.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	590.02	0.0	590.34	14.00	0.0	330.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	591.60	0.0	591.91	14.00	0.0	430.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	591.93	0.0	592.27	14.00	0.0	470.00	0.0	0.0	0.0	113.00	127.00	0.0
2000.000	592.60	0.0	593.01	14.00	0.0	560.00	0.0	0.0	0.0	113.00	127.00	0.0
2125.000	590.35	0.0	590.46	32.77	0.0	330.00	0.0	48.70	160.00	160.00	208.70	208.70
2125.000	591.93	0.0	592.02	39.16	0.0	430.00	0.0	48.70	160.00	160.00	208.70	208.70
2125.000	592.30	0.0	592.39	40.62	0.0	470.00	0.0	48.70	160.00	160.00	208.70	208.70
2125.000	593.05	0.0	593.14	43.64	0.0	560.00	0.0	48.70	160.00	160.00	208.70	208.70
3000.000	590.73	0.0	590.34	32.46	0.0	330.00	0.0	59.90	155.80	155.80	215.70	215.70
3000.000	592.17	0.0	592.27	39.24	0.0	430.00	0.0	59.90	155.80	155.80	215.70	215.70
3000.000	592.53	0.0	592.53	39.66	0.0	470.00	0.0	59.90	155.80	155.80	215.70	215.70
3000.000	593.27	0.0	593.37	42.61	0.0	560.00	0.0	59.90	155.80	155.80	215.70	215.70
3800.000	591.09	0.0	591.21	32.17	0.0	330.00	0.0	37.50	166.00	166.00	203.50	203.50
3800.000	592.42	0.0	592.52	37.33	0.0	430.00	0.0	37.50	166.00	166.00	203.50	203.50
3800.000	592.77	0.0	592.87	37.50	0.0	470.00	0.0	37.50	166.00	166.00	203.50	203.50
3800.000	593.49	0.0	593.60	37.50	0.0	560.00	0.0	37.50	166.00	166.00	203.50	203.50
3900.000	591.13	0.0	591.26	47.47	0.24	328.51	1.25	0.0	0.0	97.70	127.00	0.0
3900.000	592.46	0.0	592.55	93.42	28.79	386.14	15.07	0.0	0.0	97.70	127.00	0.0
3900.000	592.82	0.0	592.90	94.87	44.77	404.29	20.94	0.0	0.0	97.70	127.00	0.0
3900.000	593.56	0.0	593.63	100.27	81.05	443.41	35.55	0.0	0.0	97.70	127.00	0.0
4650.000	591.56	0.0	591.68	41.47	0.0	329.96	0.04	0.0	0.0	106.00	147.00	0.0
4650.000	592.69	0.0	592.79	123.24	1.47	419.42	9.10	0.0	0.0	106.00	147.00	0.0
4650.000	593.01	0.0	593.11	130.02	10.58	443.88	15.54	0.0	0.0	106.00	147.00	0.0
4650.000	593.71	0.0	593.79	144.05	40.30	485.61	34.09	0.0	0.0	106.00	147.00	0.0
4750.000	591.64	0.0	591.73	62.82	1.33	328.17	0.0	0.0	0.0	100.00	136.00	0.0
4750.000	592.75	0.0	592.82	113.91	44.36	385.54	0.0	0.0	0.0	100.00	136.00	0.0
4750.000	593.07	0.0	593.14	150.00	66.05	401.88	2.07	0.0	0.0	100.00	136.00	0.0
4750.000	593.75	0.0	593.81	150.00	114.91	430.78	14.31	0.0	0.0	100.00	136.00	0.0

SECND	CNSEL	DIFKNS	ES	TOPVID	OLOB	SCH	CRD3	PERENC	STENCL	STCHL	STCHR	STENCR
5130.000	591.78	0.0	591.38	53.14	1.34	328.56	0.0	0.0	0.0	100.00	136.00	0.0
5130.000	592.04	0.0	592.92	115.70	30.31	391.69	0.0	0.0	0.0	100.00	136.00	0.0
5130.000	593.15	0.0	593.22	150.00	59.59	409.60	0.81	0.0	0.0	100.00	136.00	0.0
5130.000	593.81	0.0	593.87	150.00	101.56	439.51	11.83	0.0	0.0	100.00	136.00	0.0
5230.000	591.71	0.0	592.30	24.29	0.0	330.00	0.0	0.0	0.0	107.00	134.20	0.0
5230.000	592.76	0.0	593.02	80.85	1.96	427.95	0.09	0.0	0.0	107.00	134.20	0.0
5230.000	593.07	0.0	593.32	93.91	15.23	453.22	1.50	0.0	0.0	107.00	134.20	0.0
5230.000	593.75	0.0	593.74	120.34	62.70	483.67	13.63	0.0	0.0	107.00	134.20	0.0
5828.000	592.56	0.0	592.77	30.89	0.00	330.00	0.0	50.00	95.00	106.40	134.20	145.00
5828.000	593.38	0.0	593.59	50.00	7.42	417.79	4.79	50.00	95.00	106.40	134.20	145.00
5828.000	593.61	0.0	593.83	50.00	11.27	450.69	8.05	50.00	95.00	106.40	134.20	145.00
5828.000	594.13	0.0	594.36	50.00	20.99	522.38	16.63	50.00	95.00	106.40	134.20	145.00
5958.000	592.27	0.0	593.45	10.70	1.58	212.00	1.42	120.00	50.00	111.50	113.50	170.00
5958.000	593.03	0.0	594.23	13.90	7.50	265.73	6.77	120.00	50.00	111.50	113.50	170.00
5958.000	593.21	0.0	594.52	14.68	10.17	290.65	9.18	120.00	50.00	111.50	113.50	170.00
5958.000	593.69	0.0	595.06	16.71	18.44	334.91	16.65	120.00	50.00	111.50	118.50	170.00
5959.000	592.29	0.0	593.52	7.00	0.0	215.00	0.0	7.00	111.50	111.50	113.50	118.50
5959.000	592.90	0.0	594.45	7.00	0.0	280.00	0.0	7.00	111.50	111.50	113.50	118.50
5959.000	593.01	0.0	594.82	7.00	0.0	310.00	0.0	7.00	111.50	111.50	113.50	118.50
5959.000	593.26	0.0	595.60	7.00	0.0	370.00	0.0	7.00	111.50	111.50	118.50	118.50
5960.000	593.29	0.0	594.07	7.00	0.0	215.00	0.0	7.00	111.50	111.50	113.50	118.50
5960.000	594.11	0.0	595.13	7.00	0.0	280.00	0.0	7.00	111.50	111.50	113.50	118.50
5960.000	594.48	0.0	595.63	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5960.000	595.14	0.0	596.71	7.00	0.0	370.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	593.44	0.0	594.13	7.00	0.0	215.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	594.46	0.0	595.24	7.00	0.0	280.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	594.96	0.0	595.77	7.00	0.0	310.00	0.0	7.00	111.50	111.50	118.50	118.50
5961.000	596.19	0.0	596.98	7.00	0.0	370.00	0.0	7.00	111.50	111.50	118.50	118.50
6100.000	594.33	0.0	594.36	150.00	10.54	182.08	22.38	150.00	50.00	100.00	129.00	200.00
6100.000	595.47	0.0	595.48	150.00	35.45	184.76	59.79	150.00	50.00	100.00	129.00	200.00
6100.000	596.01	0.0	596.02	150.00	45.78	185.96	76.26	150.00	50.00	100.00	129.00	200.00
6100.000	597.22	0.0	597.23	150.00	69.37	191.78	100.34	150.00	50.00	100.00	129.00	200.00
6965.000	594.44	0.0	594.50	30.76	0.0	215.00	0.0	0.0	0.0	103.00	138.00	0.0
6965.000	595.52	0.0	595.57	59.94	0.64	279.36	0.0	0.0	0.0	103.00	138.00	0.0
6965.000	596.04	0.0	596.09	132.42	7.57	301.99	0.44	0.0	0.0	103.00	138.00	0.0
6965.000	597.24	0.0	597.27	225.00	54.51	284.77	30.71	0.0	0.0	103.00	138.00	0.0
7081.000	594.42	0.0	594.60	26.15	21.26	170.64	23.11	0.0	0.0	115.70	124.30	0.0
7081.000	595.49	0.0	595.66	31.19	36.55	203.71	39.74	0.0	0.0	115.70	124.30	0.0
7081.000	596.01	0.0	596.17	33.64	44.32	215.45	43.73	0.0	0.0	115.70	124.30	0.0
7081.000	597.23	0.0	597.30	175.00	78.11	195.31	96.57	0.0	0.0	115.70	124.30	0.0
7082.000	594.26	0.0	594.78	25.41	0.0	215.00	0.0	0.0	0.0	115.70	124.30	0.0
7082.000	595.16	0.0	596.00	29.63	0.0	280.00	0.0	0.0	0.0	115.70	124.30	0.0
7082.000	595.58	0.0	596.61	31.60	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7082.000	597.22	0.0	597.31	175.00	86.40	152.39	131.22	0.0	0.0	115.70	124.30	0.0

SECND	C.SEL	DIF(.S	ES	TOP.HD	FLOB	BCH	BRCB	PERENC	STENCL	STCHL	STCHR	STENCR
7083.000	594.39	0.0	594.59	25.99	0.0	215.00	0.0	0.0	0.0	115.70	124.30	0.0
7083.000	595.33	0.0	595.22	30.66	0.0	280.00	0.0	0.0	0.0	115.70	124.30	0.0
7083.000	595.85	0.0	596.83	32.36	0.0	310.00	0.0	0.0	0.0	115.70	124.30	0.0
7083.000	597.23	0.0	597.35	175.00	39.47	144.53	155.00	0.0	0.0	115.70	124.30	0.0
7084.000	594.87	0.0	595.01	28.29	24.24	164.40	25.35	0.0	0.0	115.70	124.30	0.0
7084.000	596.34	0.0	596.44	60.76	42.95	190.35	46.70	0.0	0.0	115.70	124.30	0.0
7084.000	597.12	0.0	597.17	175.00	62.95	170.59	76.46	0.0	0.0	115.70	124.30	0.0
7084.000	597.31	0.0	597.37	175.00	79.59	191.20	99.22	0.0	0.0	115.70	124.30	0.0
7200.000	595.02	0.0	595.06	32.25	0.0	215.00	0.0	0.0	0.0	103.00	138.00	0.0
7200.000	595.44	0.0	596.48	132.44	5.74	272.48	1.78	0.0	0.0	103.00	138.00	0.0
7200.000	597.16	0.0	597.19	150.00	20.10	272.99	16.90	0.0	0.0	103.00	138.00	0.0
7200.000	597.36	0.0	597.39	150.00	23.66	315.93	25.42	0.0	0.0	103.00	138.00	0.0
8140.000	595.20	0.0	595.25	35.41	0.0	214.96	0.04	0.0	0.0	111.00	150.50	0.0
8140.000	596.56	0.0	596.60	63.91	0.0	272.56	7.44	0.0	0.0	111.00	150.50	0.0
8140.000	597.24	0.0	597.27	80.80	0.03	292.73	17.23	0.0	0.0	111.00	150.50	0.0
8140.000	597.45	0.0	597.49	87.48	0.19	345.50	24.32	0.0	0.0	111.00	150.50	0.0
8269.000	595.17	0.0	595.35	27.63	23.98	163.09	22.94	0.0	0.0	125.70	134.30	0.0
8269.000	596.53	0.0	596.67	34.90	44.14	193.54	42.22	0.0	0.0	125.70	134.30	0.0
8269.000	597.21	0.0	597.33	39.04	56.22	201.26	52.52	0.0	0.0	125.70	134.30	0.0
8269.000	597.42	0.0	597.57	40.58	70.27	235.31	64.42	0.0	0.0	125.70	134.30	0.0
8270.000	595.01	0.0	595.52	26.80	0.0	215.00	0.0	0.0	0.0	125.70	134.30	0.0
8270.000	596.20	0.0	597.01	33.14	0.0	280.00	0.0	0.0	0.0	125.70	134.30	0.0
8270.000	596.78	0.0	597.77	36.25	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8270.000	596.79	0.0	596.20	36.31	0.0	370.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	595.25	0.0	595.74	23.08	0.0	215.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	596.61	0.0	597.42	35.35	0.0	280.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	597.29	0.0	596.28	39.51	0.0	310.00	0.0	0.0	0.0	125.70	134.30	0.0
8271.000	597.51	0.0	593.92	41.32	0.0	370.00	0.0	0.0	0.0	125.70	134.30	0.0
8272.000	595.72	0.0	595.85	30.61	28.26	159.72	27.03	0.0	0.0	125.70	134.30	0.0
8272.000	597.56	0.0	597.64	41.75	54.92	175.36	49.72	0.0	0.0	125.70	134.30	0.0
8272.000	598.51	0.0	598.56	96.56	67.98	168.78	73.24	0.0	0.0	125.70	134.30	0.0
8272.000	599.29	0.0	599.33	105.71	83.97	175.05	110.98	0.0	0.0	125.70	134.30	0.0
8541.000	595.82	0.0	595.93	24.17	10.36	182.13	14.49	0.0	0.0	112.50	123.50	0.0
8541.000	597.60	0.0	597.68	86.03	32.09	211.83	35.08	0.0	0.0	112.50	123.50	0.0
8541.000	598.53	0.0	598.58	136.11	45.67	204.86	59.48	0.0	0.0	112.50	123.50	0.0
8541.000	599.31	0.0	599.35	150.00	70.21	206.46	93.33	0.0	0.0	112.50	123.50	0.0
8542.000	596.08	0.0	596.13	26.86	19.37	180.37	15.26	0.0	0.0	112.50	123.50	0.0
8542.000	598.17	0.0	598.22	116.23	37.02	196.49	46.50	0.0	0.0	112.50	123.50	0.0
8542.000	599.03	0.0	599.06	150.00	53.59	185.32	71.09	0.0	0.0	112.50	123.50	0.0
8542.000	599.48	0.0	599.52	150.00	73.31	199.25	97.43	0.0	0.0	112.50	123.50	0.0
8675.000	596.16	0.0	596.22	98.35	0.0	207.15	7.85	0.0	0.0	101.00	133.00	0.0
8675.000	598.23	0.0	598.24	150.00	23.66	190.58	65.66	0.0	0.0	101.00	133.00	0.0
8675.000	599.07	0.0	599.07	150.00	37.56	188.54	83.00	0.0	0.0	101.00	133.00	0.0
8675.000	599.52	0.0	599.53	150.00	50.80	213.98	105.21	0.0	0.0	101.00	133.00	0.0

SECND	CWSEL	DIFRWS	EG	TOPWID	CLDB	GCH	DROB	PERENC	STENCL	STCHL	STCHR	STENCR
9030.000	596.24	0.0	596.29	98.08	0.0	210.50	4.50	0.0	0.0	101.00	133.00	0.0
9030.000	598.24	0.0	598.26	150.00	20.97	196.21	62.82	0.0	0.0	101.00	133.00	0.0
9030.000	599.07	0.0	599.09	150.00	35.42	192.04	81.74	0.0	0.0	101.00	133.00	0.0
9030.000	599.53	0.0	599.54	150.00	43.55	211.21	103.24	0.0	0.0	101.00	133.00	0.0
9150.000	596.30	0.0	596.31	98.52	6.60	90.25	113.15	0.0	0.0	109.50	126.30	0.0
9150.000	598.26	0.0	598.26	150.00	27.06	89.52	163.42	0.0	0.0	109.50	126.30	0.0
9150.000	599.08	0.0	599.09	150.00	42.09	90.36	177.55	0.0	0.0	109.50	126.30	0.0
9150.000	599.54	0.0	599.54	150.00	55.08	103.36	209.56	0.0	0.0	109.50	126.30	0.0
9151.000	597.23	0.0	597.24	136.57	10.26	73.75	125.99	0.0	0.0	109.50	126.30	0.0
9151.000	599.35	0.0	599.35	150.00	46.33	76.15	157.51	0.0	0.0	109.50	126.30	0.0
9151.000	600.83	0.0	600.83	150.00	60.51	73.65	170.34	0.0	0.0	109.50	126.30	0.0
9151.000	601.09	0.0	601.10	150.00	74.69	92.40	202.90	0.0	0.0	109.50	126.30	0.0
9275.000	597.23	0.0	597.25	133.36	0.38	192.26	22.36	0.0	0.0	101.00	133.00	0.0
9275.000	599.35	0.0	599.35	150.00	36.29	166.57	77.04	0.0	0.0	101.00	133.00	0.0
9275.000	600.83	0.0	600.84	150.00	43.98	168.11	92.91	0.0	0.0	101.00	133.00	0.0
9275.000	601.09	0.0	601.10	150.00	60.72	196.53	112.75	0.0	0.0	101.00	133.00	0.0
9335.000	597.22	0.0	597.26	79.90	4.27	210.73	0.0	0.0	0.0	104.00	134.50	0.0
9335.000	599.34	0.0	599.35	150.00	60.65	192.20	27.16	0.0	0.0	104.00	134.50	0.0
9335.000	600.83	0.0	600.84	150.00	75.49	188.08	46.43	0.0	0.0	104.00	134.50	0.0
9335.000	601.09	0.0	601.10	150.00	91.99	219.33	59.68	0.0	0.0	104.00	134.50	0.0
10200.000	597.37	0.0	597.43	63.90	1.87	213.04	0.09	0.0	0.0	97.30	126.00	0.0
10200.000	599.37	0.0	599.38	150.00	50.45	189.60	39.37	0.0	0.0	97.30	126.00	0.0
10200.000	600.84	0.0	600.85	150.00	63.93	183.13	62.94	0.0	0.0	97.30	126.00	0.0
10200.000	601.11	0.0	601.12	150.00	73.14	211.95	79.91	0.0	0.0	97.30	126.00	0.0

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SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRITS	EG	10(*S	VCH	AREA	.01K
130.000	130.00	0.0	0.0	580.40	330.00	585.29	0.0	585.54	23.92	4.01	82.21	67.47
130.000	130.00	0.0	0.0	580.40	430.00	585.96	0.0	586.24	23.97	4.30	99.93	37.83
130.000	130.00	0.0	0.0	580.40	470.00	586.19	0.0	586.50	23.98	4.40	106.73	95.98
130.000	130.00	0.0	0.0	580.40	560.00	586.69	0.0	587.02	23.95	4.61	122.13	114.41
234.000	103.00	0.0	0.0	580.60	330.00	585.54	0.0	585.80	24.35	4.07	81.00	66.37
234.000	103.00	0.0	0.0	580.60	430.00	586.19	0.0	586.50	23.82	4.41	97.55	88.11
234.000	103.00	0.0	0.0	580.60	470.00	586.43	0.0	586.75	23.94	4.55	103.41	96.07
234.000	103.00	0.0	0.0	580.60	560.00	586.93	0.0	587.29	24.34	4.83	115.33	113.51
235.000	4.50	586.50	585.60	580.60	330.00	585.68	0.0	585.92	21.43	3.90	84.66	71.28
235.000	4.50	586.50	585.60	580.60	430.00	586.56	0.0	586.81	13.41	4.04	106.41	100.22
235.000	4.50	586.50	585.60	580.60	470.00	586.84	0.0	587.11	13.16	4.14	113.57	110.29
235.000	4.50	586.50	585.60	580.60	560.00	587.42	0.0	587.72	15.14	4.37	123.13	131.49
350.000	114.00	0.0	0.0	580.80	330.00	585.95	0.0	586.16	19.11	3.69	89.52	75.43
350.000	114.00	0.0	0.0	580.80	430.00	586.80	0.0	587.02	17.06	3.78	113.61	104.11
350.000	114.00	0.0	0.0	580.80	470.00	587.09	0.0	587.32	16.71	3.84	122.31	114.93
350.000	114.00	0.0	0.0	580.80	560.00	587.69	0.0	587.93	15.95	3.95	141.78	140.23
800.000	450.00	0.0	0.0	582.00	330.00	586.84	0.0	587.05	20.74	3.71	89.06	72.45
800.000	450.00	0.0	0.0	582.00	430.00	587.60	0.0	587.83	19.12	3.85	111.69	98.34
800.000	450.00	0.0	0.0	582.00	470.00	587.87	0.0	588.11	18.54	3.89	120.70	109.15
800.000	450.00	0.0	0.0	582.00	560.00	588.44	0.0	588.68	17.53	3.99	140.38	133.74
901.000	90.00	0.0	0.0	581.90	330.00	586.93	0.0	587.48	43.29	6.56	62.90	50.16
901.000	90.00	0.0	0.0	581.90	430.00	587.68	0.0	588.23	37.99	6.78	81.36	69.77
901.000	90.00	0.0	0.0	581.90	470.00	587.94	0.0	588.50	35.53	6.87	89.25	77.76
901.000	90.00	0.0	0.0	581.90	560.00	588.49	0.0	589.06	33.83	7.03	105.76	96.29
902.000	31.00	590.50	587.70	581.90	330.00	589.30	0.0	589.43	6.59	3.37	132.92	123.52
902.000	31.00	590.50	587.70	581.90	430.00	591.04	0.0	591.13	3.82	2.97	201.23	220.12
902.000	31.00	590.50	587.70	581.90	470.00	591.32	0.0	591.41	3.38	3.06	213.00	238.58
902.000	31.00	590.50	587.70	581.90	560.00	591.84	0.0	591.95	4.17	3.29	234.92	274.31
1020.000	100.00	0.0	0.0	582.40	330.00	589.44	0.0	589.50	3.58	1.94	169.77	174.53
1020.000	100.00	0.0	0.0	582.40	430.00	591.12	0.0	591.17	2.34	1.91	233.15	281.23
1020.000	100.00	0.0	0.0	582.40	470.00	591.40	0.0	591.46	2.41	1.88	249.95	302.44
1020.000	100.00	0.0	0.0	582.40	560.00	591.93	0.0	591.99	2.66	2.06	272.16	343.50
1870.000	850.00	0.0	0.0	584.00	330.00	589.82	0.0	589.92	6.96	2.50	131.99	125.05
1870.000	850.00	0.0	0.0	584.00	430.00	591.37	0.0	591.45	4.49	2.28	193.50	202.97
1870.000	850.00	0.0	0.0	584.00	470.00	591.65	0.0	591.74	4.57	2.35	199.96	219.84
1870.000	850.00	0.0	0.0	584.00	560.00	592.20	0.0	592.30	4.85	2.51	222.77	254.40
1997.000	100.00	0.0	0.0	584.30	330.00	589.81	0.0	590.15	13.47	4.69	70.41	76.79
1997.000	100.00	0.0	0.0	584.30	430.00	591.31	0.0	591.65	13.15	4.71	91.38	118.58
1997.000	100.00	0.0	0.0	584.30	470.00	591.59	0.0	591.96	13.69	4.93	95.24	127.05
1997.000	100.00	0.0	0.0	584.30	560.00	592.10	0.0	592.56	15.20	5.46	102.51	143.62
1998.000	5.00	595.00	595.80	584.30	330.00	589.79	0.0	590.19	28.08	5.05	65.29	62.27
1998.000	5.00	595.00	595.80	584.30	430.00	591.25	0.0	591.72	32.66	5.51	78.09	75.24
1998.000	5.00	595.00	595.80	584.30	470.00	591.51	0.0	592.05	37.42	5.88	79.92	76.84
1998.000	5.00	595.00	595.80	584.30	560.00	591.99	0.0	592.70	49.98	6.75	82.94	79.21

SECNC	XLCH	ELTRO	ELLC	ELMIN	Q	CMSEL	CRIMS	BG	10M*S	VCM	AREA	.01K
1999.000	43.00	595.00	595.80	584.30	330.00	589.93	0.0	590.31	26.76	4.95	66.69	63.80
1999.000	43.00	595.00	595.80	584.30	430.00	591.41	0.0	591.36	31.83	5.43	77.20	76.22
1999.000	43.00	595.00	595.80	584.30	470.00	591.69	0.0	592.21	36.49	5.30	81.10	77.81
1999.000	43.00	595.00	595.80	584.30	560.00	592.23	0.0	592.52	43.34	5.64	84.29	80.13
2000.000	5.00	0.0	0.0	584.30	330.00	590.02	0.0	590.34	8.55	4.49	73.42	112.83
2000.000	5.00	0.0	0.0	584.30	430.00	591.00	0.0	591.91	6.05	4.50	95.48	174.85
2000.000	5.00	0.0	0.0	584.30	470.00	591.93	0.0	592.27	5.17	4.69	100.13	189.25
2000.000	5.00	0.0	0.0	584.30	560.00	592.60	0.0	593.01	5.48	5.11	109.57	219.91
2125.000	100.00	0.0	0.0	584.20	330.00	590.35	0.0	590.46	4.28	2.63	125.37	159.55
2125.000	100.00	0.0	0.0	584.20	430.00	591.93	0.0	592.02	2.66	2.36	182.35	263.94
2125.000	100.00	0.0	0.0	584.20	470.00	592.30	0.0	592.39	2.58	2.39	196.83	292.37
2125.000	100.00	0.0	0.0	584.20	560.00	593.05	0.0	593.14	2.46	2.45	223.42	356.73
3000.000	875.00	0.0	0.0	584.60	330.00	590.73	0.0	590.84	4.40	2.56	123.92	157.33
3000.000	875.00	0.0	0.0	584.60	430.00	592.17	0.0	592.27	2.95	2.46	175.09	250.34
3000.000	875.00	0.0	0.0	584.60	470.00	592.53	0.0	592.63	2.87	2.49	198.98	277.32
3000.000	875.00	0.0	0.0	584.60	560.00	593.27	0.0	593.37	2.74	2.55	219.34	338.56
3800.000	800.00	0.0	0.0	585.10	330.00	591.09	0.0	591.21	4.80	2.75	120.15	150.53
3800.000	800.00	0.0	0.0	585.10	430.00	592.42	0.0	592.52	3.37	2.58	166.74	234.40
3800.000	800.00	0.0	0.0	585.10	470.00	592.77	0.0	592.87	3.23	2.62	179.45	261.61
3800.000	800.00	0.0	0.0	585.10	560.00	593.49	0.0	593.60	3.00	2.71	206.62	323.45
3900.000	100.00	0.0	0.0	585.30	330.00	591.13	0.0	591.26	5.03	2.39	117.96	147.16
3900.000	100.00	0.0	0.0	585.30	430.00	592.46	0.0	592.55	2.62	2.53	220.93	265.71
3900.000	100.00	0.0	0.0	585.30	470.00	592.82	0.0	592.90	2.29	2.48	255.06	310.31
3900.000	100.00	0.0	0.0	585.30	560.00	593.56	0.0	593.63	1.82	2.40	323.07	414.81
4650.000	750.00	0.0	0.0	586.30	330.00	591.56	0.0	591.68	6.35	2.83	116.39	130.92
4650.000	750.00	0.0	0.0	586.30	430.00	592.69	0.0	592.79	3.80	2.59	186.22	220.72
4650.000	750.00	0.0	0.0	586.30	470.00	593.01	0.0	593.11	3.24	2.53	228.36	260.91
4650.000	750.00	0.0	0.0	586.30	560.00	593.71	0.0	593.79	2.36	2.39	322.70	364.44
4750.000	100.00	0.0	0.0	586.50	330.00	591.64	0.0	591.73	3.66	2.46	139.43	172.38
4750.000	100.00	0.0	0.0	586.50	430.00	592.75	0.0	592.82	2.34	2.24	250.60	280.87
4750.000	100.00	0.0	0.0	586.50	470.00	593.07	0.0	593.14	2.06	2.19	296.94	327.57
4750.000	100.00	0.0	0.0	586.50	560.00	593.75	0.0	593.81	1.56	2.07	399.17	448.76
5130.000	380.00	0.0	0.0	586.70	330.00	591.78	0.0	591.88	3.35	2.50	135.84	168.22
5130.000	380.00	0.0	0.0	586.70	430.00	592.84	0.0	592.92	2.59	2.33	237.69	267.00
5130.000	380.00	0.0	0.0	586.70	470.00	593.15	0.0	593.22	2.32	2.29	273.57	308.64
5130.000	380.00	0.0	0.0	586.70	560.00	593.81	0.0	593.87	1.75	2.16	379.10	423.01
5230.000	100.00	0.0	0.0	587.00	330.00	591.71	0.0	592.00	15.49	4.34	76.05	33.85
5230.000	100.00	0.0	0.0	587.00	430.00	592.76	0.0	593.02	11.00	4.14	109.91	129.67
5230.000	100.00	0.0	0.0	587.00	470.00	593.07	0.0	593.32	9.47	4.05	139.16	152.73
5230.000	100.00	0.0	0.0	587.00	560.00	593.75	0.0	593.94	6.46	3.71	214.12	220.37
5828.000	598.00	0.0	0.0	587.60	330.00	592.56	0.0	592.77	10.70	3.71	89.01	100.86
5828.000	598.00	0.0	0.0	587.60	430.00	593.38	0.0	593.59	8.09	3.75	126.78	151.19
5828.000	598.00	0.0	0.0	587.60	470.00	593.61	0.0	593.83	7.77	3.81	138.65	168.59
5828.000	598.00	0.0	0.0	587.60	560.00	594.13	0.0	594.36	7.12	3.94	164.51	209.88

SECND	XLCH	ELTRC	ELLC	ELTIM	D	DISEL	CRITS	EC	10K*S	VCH	AREA	.01K
5956.000	100.00	0.0	0.0	587.90	215.00	592.27	591.97	593.45	85.26	3.76	25.43	23.15
5958.000	100.00	0.0	0.0	587.90	280.00	593.03	592.70	594.23	70.07	0.00	35.14	33.45
5958.000	100.00	0.0	0.0	587.90	310.00	593.21	592.98	594.52	72.65	9.43	37.78	36.37
5958.000	100.00	0.0	0.0	587.90	370.00	593.59	593.46	595.06	81.30	9.80	45.32	44.77
5959.000	5.00	596.00	596.60	587.90	215.00	592.29	0.0	593.52	110.58	8.90	24.15	20.45
5959.000	5.00	596.00	596.60	587.90	280.00	592.90	0.0	594.45	130.37	10.01	27.97	24.52
5959.000	5.00	596.00	596.60	587.90	310.00	593.01	0.0	594.62	150.59	10.91	28.67	25.26
5959.000	5.00	596.00	596.60	587.90	370.00	593.26	593.14	595.60	190.14	12.26	30.19	26.83
5960.000	50.00	596.00	596.60	587.90	215.00	593.29	0.0	594.07	53.62	7.09	30.32	26.96
5960.000	50.00	596.00	596.60	587.90	280.00	594.11	0.0	595.13	83.56	8.11	34.54	30.63
5960.000	50.00	596.00	596.60	587.90	310.00	594.48	0.0	595.63	93.64	8.59	36.10	31.21
5960.000	50.00	596.00	596.60	587.90	370.00	595.14	0.0	596.71	165.89	10.05	35.40	28.73
5961.000	5.00	0.0	0.0	587.90	215.00	593.44	0.0	594.13	51.47	6.63	32.42	29.97
5961.000	5.00	0.0	0.0	587.90	280.00	594.46	0.0	595.24	53.41	7.08	39.54	38.31
5961.000	5.00	0.0	0.0	587.90	310.00	594.96	0.0	595.77	53.39	7.21	43.00	42.42
5961.000	5.00	0.0	0.0	587.90	370.00	596.19	0.0	596.98	49.22	7.17	51.58	52.74
6100.000	112.00	0.0	0.0	588.00	215.00	594.33	0.0	594.36	1.03	1.42	227.22	211.47
6100.000	112.00	0.0	0.0	588.00	280.00	595.47	0.0	595.48	0.50	1.15	397.58	397.63
6100.000	112.00	0.0	0.0	588.00	310.00	596.01	0.0	596.02	0.37	1.06	478.22	507.57
6100.000	112.00	0.0	0.0	588.00	370.00	597.22	0.0	597.23	0.21	0.91	660.66	800.22
6965.000	865.00	0.0	0.0	588.80	215.00	594.44	0.0	594.50	2.62	1.97	109.41	132.81
6965.000	865.00	0.0	0.0	588.80	280.00	595.52	0.0	595.57	2.03	1.93	148.85	196.40
6965.000	865.00	0.0	0.0	588.80	310.00	596.04	0.0	596.09	1.63	1.35	195.01	242.46
6965.000	865.00	0.0	0.0	588.80	370.00	597.24	0.0	597.27	0.68	1.39	443.67	449.57
7081.000	100.00	0.0	0.0	588.80	215.00	594.42	0.0	594.60	6.51	3.76	78.03	84.27
7081.000	100.00	0.0	0.0	588.80	280.00	595.49	0.0	595.66	5.02	3.74	108.64	125.02
7081.000	100.00	0.0	0.0	588.80	310.00	596.01	0.0	596.17	4.36	3.67	125.46	148.53
7081.000	100.00	0.0	0.0	588.80	370.00	597.23	0.0	597.30	2.05	2.31	285.55	258.43
7082.000	5.00	596.30	596.50	588.80	215.00	594.26	0.0	594.78	47.10	5.75	37.42	31.33
7082.000	5.00	596.30	596.50	588.80	280.00	595.16	592.30	596.00	91.23	7.36	38.05	29.31
7082.000	5.00	596.30	596.50	588.80	310.00	595.58	592.53	596.61	111.83	8.15	38.05	29.31
7082.000	5.00	596.30	596.50	588.80	370.00	597.22	0.0	597.31	21.86	3.31	186.79	79.14
7083.000	24.00	596.30	596.50	588.80	215.00	594.39	0.0	594.89	43.50	5.70	37.73	30.37
7083.000	24.00	596.30	596.50	588.80	280.00	595.38	592.30	596.22	91.23	7.36	38.05	29.31
7083.000	24.00	596.30	596.50	588.80	310.00	595.85	592.53	596.38	111.83	8.15	38.05	29.31
7083.000	24.00	596.30	596.50	588.80	370.00	597.28	0.0	597.36	19.00	3.11	196.51	34.88
7084.000	5.00	0.0	0.0	588.80	215.00	594.37	0.0	595.01	4.59	3.34	90.35	100.34
7084.000	5.00	0.0	0.0	588.80	280.00	596.34	0.0	596.44	2.89	3.00	137.17	164.83
7084.000	5.00	0.0	0.0	588.80	310.00	597.12	0.0	597.17	1.64	2.49	264.24	241.75
7084.000	5.00	0.0	0.0	588.80	370.00	597.31	0.0	597.37	1.91	2.73	296.49	257.45
7200.000	100.00	0.0	0.0	589.00	215.00	595.02	0.0	595.06	2.00	1.78	121.07	152.20
7200.000	100.00	0.0	0.0	589.00	280.00	596.44	0.0	596.48	1.16	1.60	204.24	250.15
7200.000	100.00	0.0	0.0	589.00	310.00	597.16	0.0	597.19	0.73	1.40	311.14	342.33
7200.000	100.00	0.0	0.0	589.00	370.00	597.36	0.0	597.39	0.37	1.56	340.34	395.68

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOKMS	VCH	AREA	.01K
8140.000	925.00	0.0	0.0	589.60	215.00	595.20	0.0	595.25	2.01	1.78	120.02	151.70
8140.000	925.00	0.0	0.0	589.60	280.00	596.56	0.0	596.60	1.32	1.63	189.15	243.70
8140.000	925.00	0.0	0.0	589.60	310.00	597.24	0.0	597.27	1.02	1.52	236.94	307.17
8140.000	925.00	0.0	0.0	589.60	370.00	597.45	0.0	597.49	1.25	1.72	254.68	330.37
8269.000	100.00	0.0	0.0	589.70	215.00	595.17	0.0	595.35	5.98	3.92	77.95	81.37
8269.000	100.00	0.0	0.0	589.70	280.00	596.53	0.0	596.67	4.22	3.48	120.51	136.30
8269.000	100.00	0.0	0.0	589.70	310.00	597.21	0.0	597.33	3.26	3.27	145.73	171.68
8269.000	100.00	0.0	0.0	589.70	370.00	597.42	0.0	597.57	4.06	3.71	153.78	183.59
8270.000	5.00	597.80	600.00	589.70	215.00	595.01	0.0	595.52	43.12	5.73	37.50	32.74
8270.000	5.00	597.80	600.00	589.70	280.00	596.20	593.20	597.01	85.01	7.21	38.86	30.19
8270.000	5.00	597.80	600.00	589.70	310.00	596.78	593.44	597.77	105.43	7.98	38.36	30.19
8270.000	5.00	597.80	600.00	589.70	370.00	596.79	593.86	598.20	150.18	9.52	38.86	30.19
8271.000	43.00	597.80	600.00	589.70	215.00	595.25	0.0	595.74	44.33	5.60	38.38	32.29
8271.000	48.00	597.80	600.00	589.70	280.00	596.61	593.20	597.42	85.01	7.21	38.86	30.19
8271.000	48.00	597.80	600.00	589.70	310.00	597.29	593.44	598.28	105.43	7.98	38.86	30.19
8271.000	48.00	597.80	600.00	589.70	370.00	597.51	593.86	598.92	150.18	9.52	38.36	30.19
8272.000	5.00	0.0	0.0	589.70	215.00	595.72	0.0	595.85	4.46	3.27	94.22	101.78
8272.000	5.00	0.0	0.0	589.70	280.00	597.56	0.0	597.64	2.11	2.71	160.10	192.94
8272.000	5.00	0.0	0.0	589.70	310.00	598.51	0.0	598.56	1.32	2.32	237.42	270.23
8272.000	5.00	0.0	0.0	589.70	370.00	599.29	0.0	599.33	1.06	2.20	314.40	360.15
8541.000	209.00	0.0	0.0	590.00	215.00	595.82	0.0	595.93	2.86	2.90	95.82	127.23
8541.000	209.00	0.0	0.0	590.00	280.00	597.60	0.0	597.63	1.56	2.57	180.55	224.25
8541.000	209.00	0.0	0.0	590.00	310.00	598.53	0.0	598.58	0.98	2.21	284.63	312.43
8541.000	209.00	0.0	0.0	590.00	370.00	599.31	0.0	599.35	0.74	2.04	400.54	429.13
8542.000	58.00	598.30	595.30	590.00	215.00	596.08	0.0	596.18	2.41	2.74	102.43	138.61
8542.000	58.00	598.30	595.30	590.00	280.00	598.17	0.0	598.22	1.05	2.22	237.68	272.90
8542.000	58.00	598.30	595.30	590.00	310.00	599.03	0.0	599.06	0.67	1.39	355.57	379.25
8542.000	58.00	598.30	595.30	590.00	370.00	599.48	0.0	599.52	0.65	1.93	424.50	457.62
8675.000	105.00	0.0	0.0	590.10	215.00	596.18	0.0	596.22	1.67	1.68	152.10	166.29
8675.000	105.00	0.0	0.0	590.10	280.00	598.23	0.0	598.24	0.35	1.01	435.59	471.88
8675.000	105.00	0.0	0.0	590.10	310.00	599.07	0.0	599.07	0.22	0.97	560.91	658.83
8675.000	105.00	0.0	0.0	590.10	370.00	599.52	0.0	599.53	0.23	0.93	629.06	772.46
9030.000	355.00	0.0	0.0	590.30	215.00	596.24	0.0	596.29	1.91	1.77	138.93	155.42
9030.000	355.00	0.0	0.0	590.30	280.00	598.24	0.0	598.26	0.41	1.07	408.38	435.34
9030.000	355.00	0.0	0.0	590.30	310.00	599.07	0.0	599.08	0.25	0.92	533.23	615.00
9030.000	355.00	0.0	0.0	590.30	370.00	599.53	0.0	599.54	0.26	0.97	601.45	725.46
9150.000	105.00	0.0	0.0	590.40	215.00	596.30	0.0	596.31	0.94	1.21	273.60	222.21
9150.000	105.00	0.0	0.0	590.40	280.00	598.26	0.0	598.26	0.27	0.83	530.05	535.03
9150.000	105.00	0.0	0.0	590.40	310.00	599.08	0.0	599.09	0.19	0.75	654.42	719.24
9150.000	105.00	0.0	0.0	590.40	370.00	599.54	0.0	599.54	0.20	0.80	722.68	830.99
9151.000	45.00	600.70	595.40	590.40	215.00	597.23	0.0	597.24	0.38	0.87	380.39	350.65
9151.000	45.00	600.70	595.40	590.40	280.00	599.85	0.0	599.85	0.09	0.57	770.47	913.40
9151.000	45.00	600.70	595.40	590.40	310.00	600.83	0.0	600.83	0.07	0.52	913.24	1188.53
9151.000	45.00	600.70	595.40	590.40	370.00	601.09	0.0	601.10	0.09	0.60	957.60	1266.82

SECND	KLCH	ELTRD	ELLC	ELMIN	Q	CUSEL	CRINS	EG	10K*S	VCH	AREA	601K
9275.000	105.00	0.0	0.0	590.40	215.00	597.23	0.0	597.25	0.87	1.33	215.24	230.32
9275.000	105.00	0.0	0.0	590.40	280.00	599.85	0.0	599.85	0.14	0.73	607.29	739.34
9275.000	105.00	0.0	0.0	590.40	310.00	600.83	0.0	600.84	0.09	0.65	755.05	1007.21
9275.000	105.00	0.0	0.0	590.40	370.00	601.09	0.0	601.10	0.12	0.73	794.35	1034.09
9335.000	60.00	0.0	0.0	590.60	215.00	597.22	0.0	597.26	1.63	1.70	142.06	168.58
9335.000	60.00	0.0	0.0	590.60	280.00	599.84	0.0	599.85	0.27	0.94	468.42	543.79
9335.000	60.00	0.0	0.0	590.60	310.00	600.83	0.0	600.84	0.16	0.80	615.26	773.47
9335.000	60.00	0.0	0.0	590.60	370.00	601.09	0.0	601.10	0.19	0.90	655.56	841.01
10200.000	865.00	0.0	0.0	591.30	215.00	597.37	0.0	597.43	2.19	1.90	121.57	145.17
10200.000	865.00	0.0	0.0	591.30	280.00	599.87	0.0	599.88	0.34	1.03	438.58	432.44
10200.000	865.00	0.0	0.0	591.30	310.00	600.84	0.0	600.85	0.20	0.97	585.62	701.63
10200.000	865.00	0.0	0.0	591.30	370.00	601.11	0.0	601.12	0.23	0.97	625.17	767.23

LULL DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	C SEL	DIFUSP	DIFUSX	DIFKUS	TOPWID	KLOW
130.000	330.00	585.29	0.0	0.0	-14.71	25.59	130.00
130.000	430.00	585.96	0.66	0.0	-14.04	27.97	130.00
130.000	470.00	586.19	0.24	0.0	-13.81	28.83	130.00
130.000	560.00	586.69	0.50	0.0	-13.31	42.40	130.00
234.000	330.00	586.54	0.0	0.24	0.0	24.79	103.00
234.000	430.00	586.19	0.66	0.24	0.0	25.00	103.00
234.000	470.00	586.43	0.24	0.24	0.0	25.00	103.00
234.000	560.00	586.93	0.49	0.23	0.0	25.00	103.00
235.000	330.00	585.68	0.0	0.15	0.0	25.00	4.50
235.000	430.00	586.56	0.87	0.36	0.0	25.00	4.50
235.000	470.00	586.84	0.29	0.41	0.0	25.00	4.50
235.000	560.00	587.42	0.58	0.50	0.0	25.00	4.50
350.000	330.00	585.95	0.0	0.26	0.0	26.79	114.00
350.000	430.00	586.80	0.85	0.24	0.0	29.90	114.00
350.000	470.00	587.09	0.29	0.25	0.0	30.94	114.00
350.000	560.00	587.69	0.60	0.26	0.0	33.16	114.00
800.000	330.00	586.84	0.0	0.89	0.0	28.73	450.00
800.000	430.00	587.60	0.76	0.81	0.0	31.92	450.00
800.000	470.00	587.87	0.27	0.79	0.0	33.11	450.00
800.000	560.00	588.44	0.56	0.75	0.0	35.56	450.00
901.000	330.00	586.93	0.0	0.09	0.0	23.76	90.00
901.000	430.00	587.68	0.74	0.07	0.0	27.39	90.00
901.000	470.00	587.94	0.26	0.06	0.0	28.68	90.00
901.000	560.00	588.49	0.55	0.05	0.0	31.38	90.00
902.000	330.00	589.30	0.0	2.37	0.0	35.37	31.00
902.000	430.00	591.04	1.73	3.36	0.0	42.00	31.00
902.000	470.00	591.32	0.28	3.38	0.0	42.00	31.00
902.000	560.00	591.84	0.52	3.35	0.0	42.00	31.00
1020.000	330.00	589.44	0.0	0.13	0.0	38.11	100.00
1020.000	430.00	591.12	1.68	0.08	0.0	42.00	100.00
1020.000	470.00	591.40	0.28	0.08	0.0	42.00	100.00
1020.000	560.00	591.93	0.53	0.09	0.0	42.00	100.00
1870.000	330.00	589.82	0.0	0.39	0.0	33.59	850.00
1870.000	430.00	591.37	1.54	0.25	0.0	39.31	850.00
1870.000	470.00	591.65	0.29	0.25	0.0	40.37	850.00
1870.000	560.00	592.20	0.55	0.28	0.0	42.40	850.00
1997.000	330.00	589.81	0.0	-0.02	0.0	14.00	100.00
1997.000	430.00	591.31	1.50	-0.06	0.0	14.00	100.00
1997.000	470.00	591.58	0.28	-0.07	0.0	14.00	100.00
1997.000	560.00	592.10	0.52	-0.10	0.0	14.00	100.00
1998.000	330.00	589.79	0.0	-0.02	0.0	14.00	5.00
1998.000	430.00	591.25	1.46	-0.05	0.0	14.00	5.00
1998.000	470.00	591.51	0.26	-0.07	0.0	14.00	5.00
1998.000	560.00	591.99	0.48	-0.11	0.0	14.00	5.00

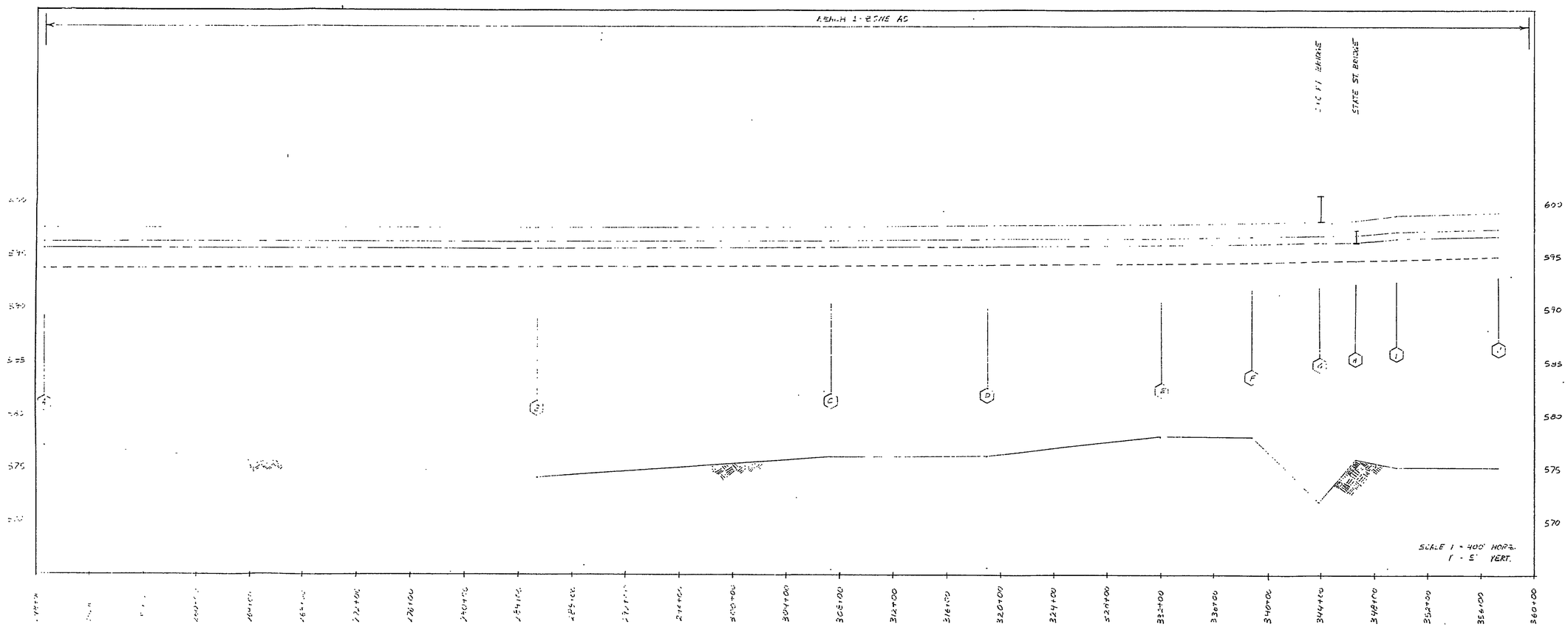
SECNC	Q	CHSEL	DIF.SP	DIF.SX	DIFK.S	TOP.WD	XLCH
1999.000	330.00	589.93	0.0	0.14	0.0	14.00	43.00
1999.000	430.00	591.41	1.48	0.16	0.0	14.00	43.00
1999.000	470.00	591.59	0.26	0.13	0.0	14.00	43.00
1999.000	560.00	592.23	0.54	0.24	0.0	14.00	43.00
2000.000	330.00	590.02	0.0	0.09	0.0	14.00	5.00
2000.000	430.00	591.60	1.58	0.19	0.0	14.00	5.00
2000.000	470.00	591.93	0.33	0.24	0.0	14.00	5.00
2000.000	560.00	592.60	0.67	0.37	0.0	14.00	5.00
2125.000	330.00	590.35	0.0	0.33	0.0	32.77	100.00
2125.000	430.00	591.93	1.56	0.34	0.0	39.16	100.00
2125.000	470.00	592.30	0.36	0.37	0.0	40.62	100.00
2125.000	560.00	593.05	0.75	0.44	0.0	43.64	100.00
3000.000	330.00	590.73	0.0	0.28	0.0	32.46	375.00
3000.000	430.00	592.17	1.45	0.24	0.0	35.24	375.00
3000.000	470.00	592.53	0.36	0.23	0.0	39.56	375.00
3000.000	560.00	593.27	0.74	0.22	0.0	42.61	375.00
3600.000	330.00	591.09	0.0	0.36	0.0	32.17	300.00
3600.000	430.00	592.42	1.33	0.25	0.0	37.33	300.00
3600.000	470.00	592.77	0.35	0.24	0.0	37.50	300.00
3800.000	560.00	593.49	0.72	0.22	0.0	37.50	300.00
3900.000	330.00	591.13	0.0	0.04	0.0	47.47	100.00
3900.000	430.00	592.46	1.33	0.04	0.0	93.42	100.00
3900.000	470.00	592.82	0.36	0.05	0.0	94.37	100.00
3900.000	560.00	593.56	0.74	0.07	0.0	106.27	100.00
4650.000	330.00	591.56	0.0	0.43	0.0	41.47	750.00
4650.000	430.00	592.69	1.13	0.23	0.0	123.24	750.00
4650.000	470.00	593.01	0.33	0.20	0.0	130.02	750.00
4650.000	560.00	593.71	0.69	0.15	0.0	144.05	750.00
4750.000	330.00	591.64	0.0	0.08	0.0	62.32	100.00
4750.000	430.00	592.75	1.11	0.06	0.0	115.91	100.00
4750.000	470.00	593.07	0.32	0.06	0.0	150.00	100.00
4750.000	560.00	593.75	0.68	0.05	0.0	150.00	100.00
5130.000	330.00	591.79	0.0	0.14	0.0	58.14	380.00
5130.000	430.00	592.84	1.06	0.09	0.0	115.70	380.00
5130.000	470.00	593.15	0.31	0.09	0.0	150.00	380.00
5130.000	560.00	593.81	0.66	0.06	0.0	150.00	380.00
5230.000	330.00	591.71	0.0	-0.07	0.0	24.29	100.00
5230.000	430.00	592.76	1.05	-0.08	0.0	60.85	100.00
5230.000	470.00	593.07	0.31	-0.08	0.0	93.91	100.00
5230.000	560.00	593.75	0.68	-0.06	0.0	120.34	100.00
5828.000	330.00	592.56	0.0	0.35	0.0	30.39	593.00
5828.000	430.00	593.33	0.32	0.62	0.0	50.00	593.00
5828.000	470.00	593.61	0.24	0.54	0.0	50.00	593.00
5828.000	560.00	594.13	0.52	0.38	0.0	50.00	598.00

SECNO	Q	CWSEL	DIFUSP	DIFUSX	DIFKUS	TOP.ID	KLCH
5958.000	215.00	592.27	0.0	-0.29	0.0	10.70	100.00
5958.000	280.00	593.03	0.76	-0.35	0.0	13.90	100.00
5958.000	310.00	593.21	0.15	-0.40	0.0	14.68	100.00
5958.000	370.00	593.69	0.48	-0.44	0.0	16.71	100.00
5959.000	215.00	592.29	0.0	0.02	0.0	7.00	5.00
5959.000	280.00	592.90	0.60	-0.13	0.0	7.00	5.00
5959.000	310.00	593.01	0.11	-0.21	0.0	7.00	5.00
5959.000	370.00	593.26	0.26	-0.43	0.0	7.00	5.00
5960.000	215.00	593.29	0.0	1.00	0.0	7.00	50.00
5960.000	280.00	594.11	0.82	1.21	0.0	7.00	50.00
5960.000	310.00	594.43	0.37	1.47	0.0	7.00	50.00
5960.000	370.00	595.14	0.56	1.88	0.0	7.00	50.00
5961.000	215.00	593.44	0.0	0.16	0.0	7.00	5.00
5961.000	280.00	594.46	1.01	0.35	0.0	7.00	5.00
5961.000	310.00	594.96	0.50	0.47	0.0	7.00	5.00
5961.000	370.00	596.19	1.23	1.04	0.0	7.00	5.00
6100.000	215.00	594.33	0.0	0.89	0.0	150.00	112.00
6100.000	280.00	595.47	1.14	1.01	0.0	150.00	112.00
6100.000	310.00	596.01	0.54	1.05	0.0	150.00	112.00
6100.000	370.00	597.22	1.22	1.04	0.0	150.00	112.00
6965.000	215.00	594.44	0.0	0.11	0.0	30.76	365.00
6965.000	280.00	595.52	1.07	0.05	0.0	59.94	365.00
6965.000	310.00	596.04	0.52	0.03	0.0	132.42	365.00
6965.000	370.00	597.24	1.20	0.02	0.0	225.00	365.00
7081.000	215.00	594.42	0.0	-0.02	0.0	26.15	100.00
7081.000	280.00	595.49	1.07	-0.02	0.0	31.19	100.00
7081.000	310.00	596.01	0.52	-0.03	0.0	33.64	100.00
7081.000	370.00	597.23	1.22	-0.01	0.0	175.00	100.00
7082.000	215.00	594.26	0.0	-0.16	0.0	25.41	5.00
7082.000	280.00	595.16	0.90	-0.33	0.0	29.63	5.00
7082.000	310.00	595.58	0.42	-0.43	0.0	31.60	5.00
7082.000	370.00	597.22	1.64	-0.01	0.0	175.00	5.00
7083.000	215.00	594.39	0.0	0.13	0.0	25.99	24.00
7083.000	280.00	595.38	0.99	0.22	0.0	30.66	24.00
7083.000	310.00	595.85	0.47	0.27	0.0	32.86	24.00
7083.000	370.00	597.28	1.44	0.06	0.0	175.00	24.00
7084.000	215.00	594.37	0.0	0.48	0.0	28.29	5.00
7084.000	280.00	596.34	1.47	0.96	0.0	60.76	5.00
7084.000	310.00	597.12	0.78	1.27	0.0	175.00	5.00
7084.000	370.00	597.31	0.19	0.02	0.0	175.00	5.00
7200.000	215.00	595.02	0.0	0.14	0.0	32.25	100.00
7200.000	280.00	596.44	1.43	0.11	0.0	132.44	100.00
7200.000	310.00	597.16	0.72	0.05	0.0	150.00	100.00
7200.000	370.00	597.36	0.20	0.05	0.0	150.00	100.00

SECND	G	CHSEL	DIF.SP	DIFHSX	DIFK.S	TCP.ID	XLCH
8140.000	215.00	595.20	0.0	0.18	0.0	35.41	925.00
8140.000	280.00	596.56	1.35	0.11	0.0	63.91	925.00
8140.000	310.00	597.24	0.03	0.07	0.0	00.30	925.00
8140.000	370.00	597.45	0.21	0.09	0.0	87.49	925.00
8269.000	215.00	595.17	0.0	-0.03	0.0	27.63	100.00
8269.000	280.00	596.53	1.36	-0.03	0.0	34.90	100.00
8269.000	310.00	597.21	0.69	-0.02	0.0	39.04	100.00
8269.000	370.00	597.42	0.20	-0.03	0.0	40.58	100.00
8270.000	215.00	595.01	0.0	-0.16	0.0	26.80	5.00
8270.000	280.00	595.20	1.19	-0.33	0.0	33.14	5.00
8270.000	310.00	595.78	0.58	-0.43	0.0	36.25	5.00
8270.000	370.00	595.79	0.01	-0.62	0.0	36.31	5.00
8271.000	215.00	595.25	0.0	0.24	0.0	28.08	48.00
8271.000	280.00	595.61	1.36	0.41	0.0	35.35	48.00
8271.000	310.00	597.29	0.68	0.51	0.0	39.61	48.00
8271.000	370.00	597.51	0.23	0.72	0.0	41.32	48.00
8272.000	215.00	595.72	0.0	0.47	0.0	30.61	5.00
8272.000	280.00	597.56	1.84	0.95	0.0	41.75	5.00
8272.000	310.00	598.51	0.95	1.22	0.0	96.55	5.00
8272.000	370.00	599.29	0.78	1.78	0.0	105.71	5.00
8541.000	215.00	595.82	0.0	0.09	0.0	24.17	209.00
8541.000	280.00	597.60	1.73	0.04	0.0	86.08	209.00
8541.000	310.00	598.53	0.93	0.02	0.0	135.11	209.00
8541.000	370.00	599.31	0.78	0.02	0.0	150.00	209.00
8542.000	215.00	596.08	0.0	0.27	0.0	25.86	58.00
8542.000	280.00	598.17	2.03	0.57	0.0	116.23	58.00
8542.000	310.00	599.03	0.86	0.49	0.0	150.00	58.00
8542.000	370.00	599.48	0.46	0.17	0.0	150.00	58.00
8675.000	215.00	596.18	0.0	0.10	0.0	93.35	105.00
8675.000	280.00	598.23	2.05	0.06	0.0	150.00	105.00
8675.000	310.00	599.07	0.84	0.04	0.0	150.00	105.00
8675.000	370.00	599.52	0.45	0.04	0.0	150.00	105.00
9030.000	215.00	596.24	0.0	0.06	0.0	98.08	355.00
9030.000	280.00	598.24	2.00	0.01	0.0	150.00	355.00
9030.000	310.00	599.07	0.83	0.01	0.0	150.00	355.00
9030.000	370.00	599.53	0.46	0.01	0.0	150.00	355.00
9150.000	215.00	596.30	0.0	0.06	0.0	98.52	105.00
9150.000	280.00	598.26	1.96	0.01	0.0	150.00	105.00
9150.000	310.00	599.08	0.83	0.01	0.0	150.00	105.00
9150.000	370.00	599.54	0.46	0.01	0.0	150.00	105.00
9151.000	215.00	597.23	0.0	0.93	0.0	126.57	45.00
9151.000	280.00	599.85	2.62	1.59	0.0	150.00	45.00
9151.000	310.00	600.83	0.99	1.75	0.0	150.00	45.00
9151.000	370.00	601.09	0.26	1.56	0.0	150.00	45.00

SECND	Q	CHSEL	DIF'SP	DIF'SX	DIFK/S	TOP.ID	XLCH
9275.000	215.00	597.23	0.0	-0.00	0.0	138.36	105.00
9275.000	280.00	599.35	2.62	-0.00	0.0	150.00	105.00
9275.000	310.00	600.35	0.99	-0.00	0.0	150.00	105.00
9275.000	370.00	601.30	0.26	-0.00	0.0	150.00	105.00
9335.000	215.00	597.22	0.0	-0.01	0.0	78.90	60.00
9335.000	280.00	599.34	2.62	-0.00	0.0	150.00	60.00
9335.000	310.00	600.33	0.99	-0.00	0.0	150.00	60.00
9335.000	370.00	601.39	0.26	-0.00	0.0	150.00	60.00
10200.000	215.00	597.37	0.0	0.15	0.0	61.90	865.00
10200.000	280.00	599.37	2.49	0.02	0.0	150.00	865.00
10200.000	310.00	600.34	0.98	0.01	0.0	150.00	865.00
10200.000	370.00	601.11	0.26	0.02	0.0	150.00	865.00

SUMMARY OF ERRORS

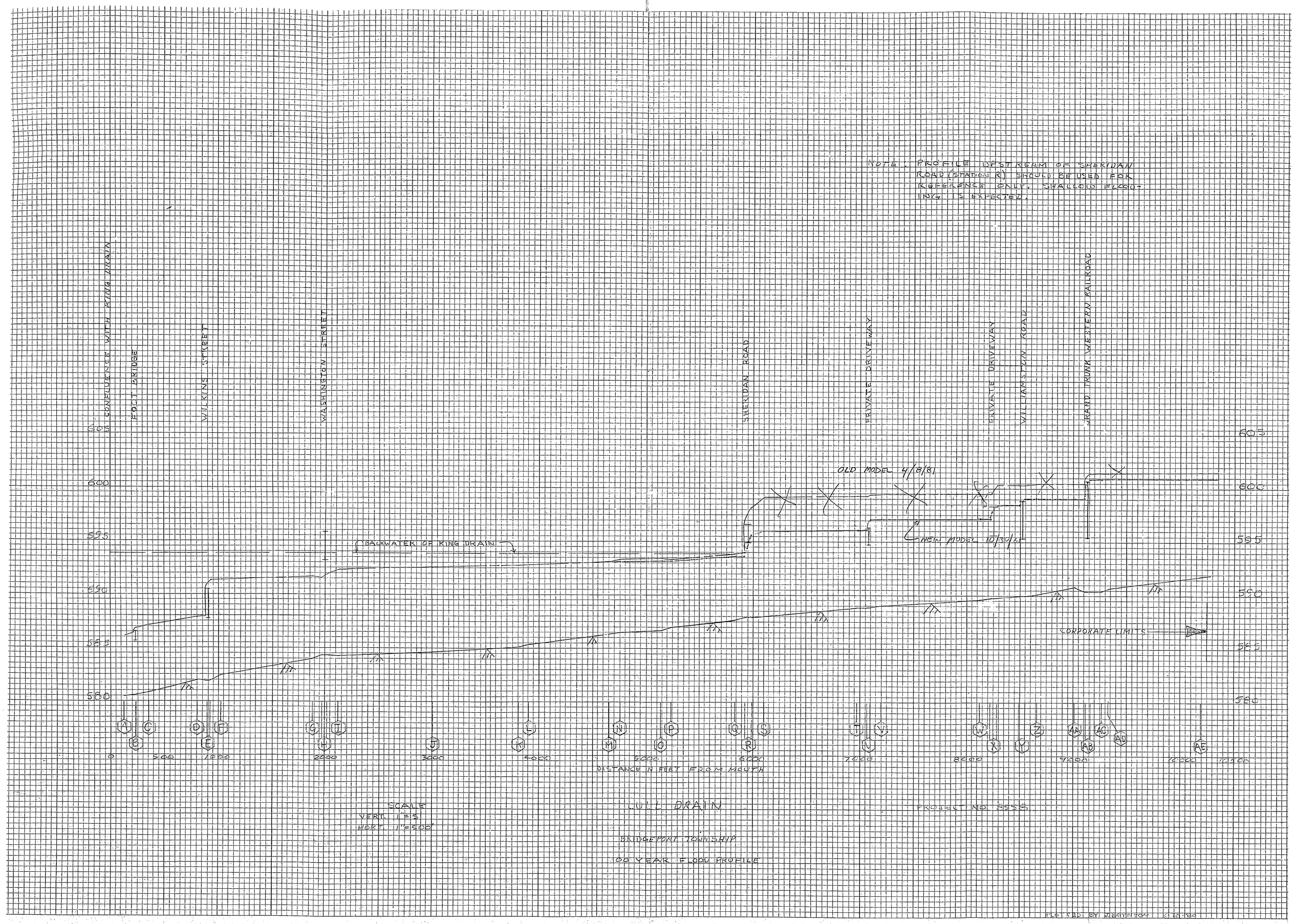


ARCHITECTS ENGINEERS PLANNERS SURVEYORS	**GOVE ASSOCIATES, INC.** 1601 Portage Street Kalamazoo, Michigan (616) 385-0011 210 Mill Street Lansing, Michigan (517) 485-0555	FLOOD INSURANCE STUDY BRIDGEPORT TWP. CASS RIVER

Rec'd 1/81

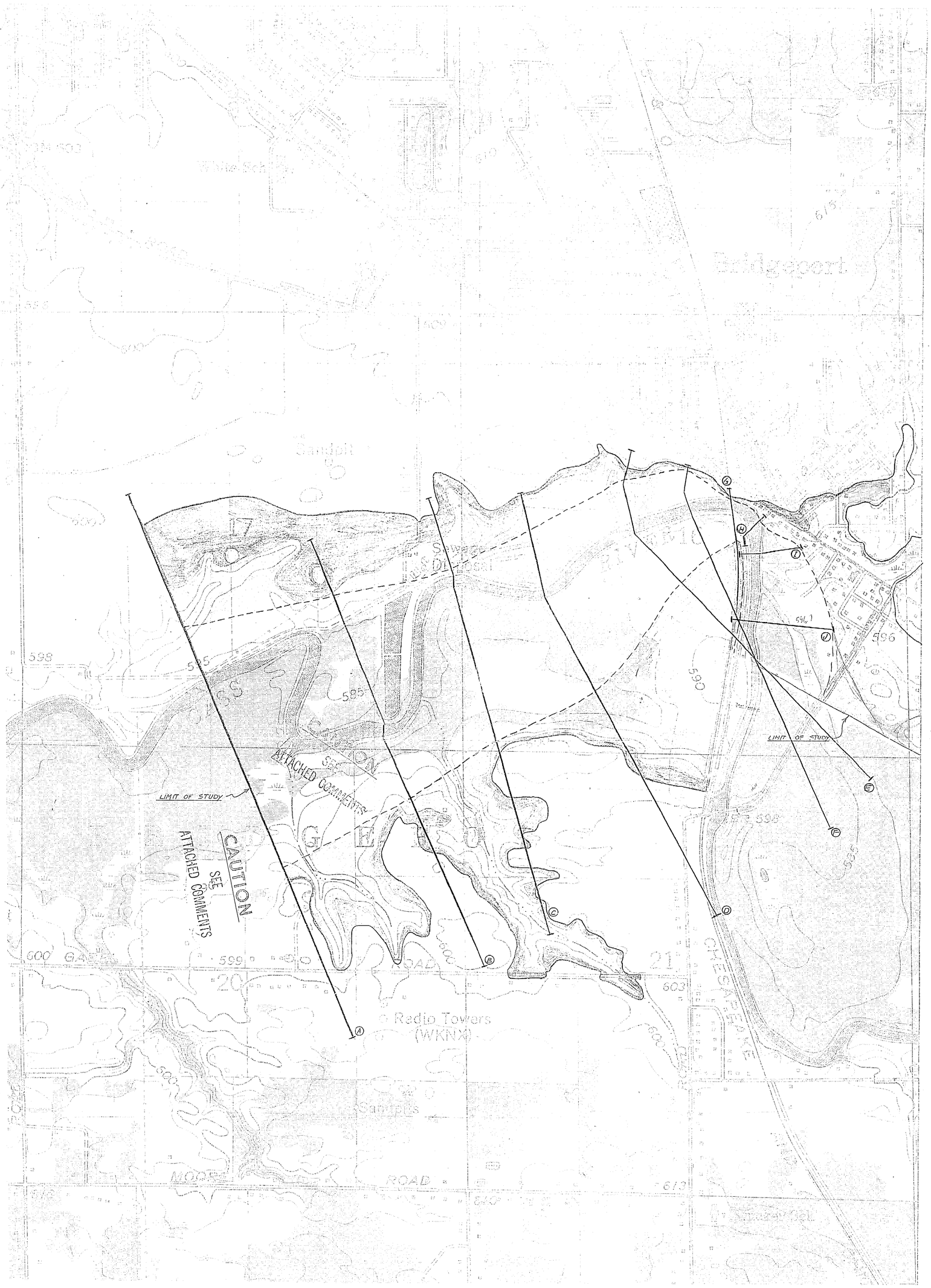
LEGEND

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION



K+E 10 X 10 TO THE INCH
KEUFFEL & ESSER CO.
PRINTED IN U.S.A. 751001

LULL DRAIN
BRIDGEPORT TWP.



CAUTION
Map is from the Original Submittal - start has now been lowered 1.22 ft. Not sure of effect on this delineation. Requested clarification 11/25/80

LEGEND

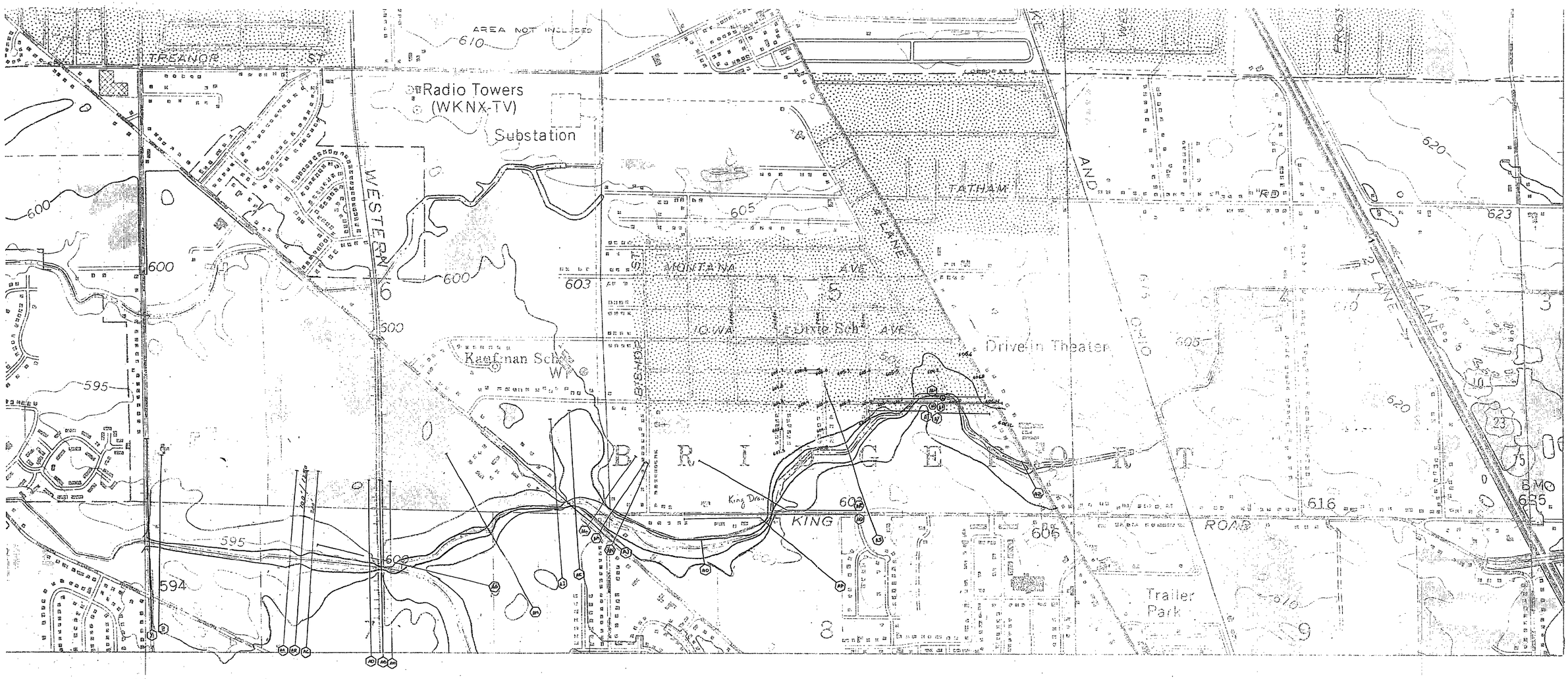
- FLOODWAY
- 100 YR. FLOOD
- 500 YR. FLOOD

SCALE IN FEET

0 500 1000

N

FRIDLEY-ST. TWO
SAGINAW COUNTY, MICHIGAN
SHEET 2 OF 2



— FLOODWAY
— 100 YR. FLOOD

SCALE IN FEET
0 500 1000
N

BRIDGEPORT TWP
SAGINAW COUNTY, MICHIGAN

SHEET 1 OF 2

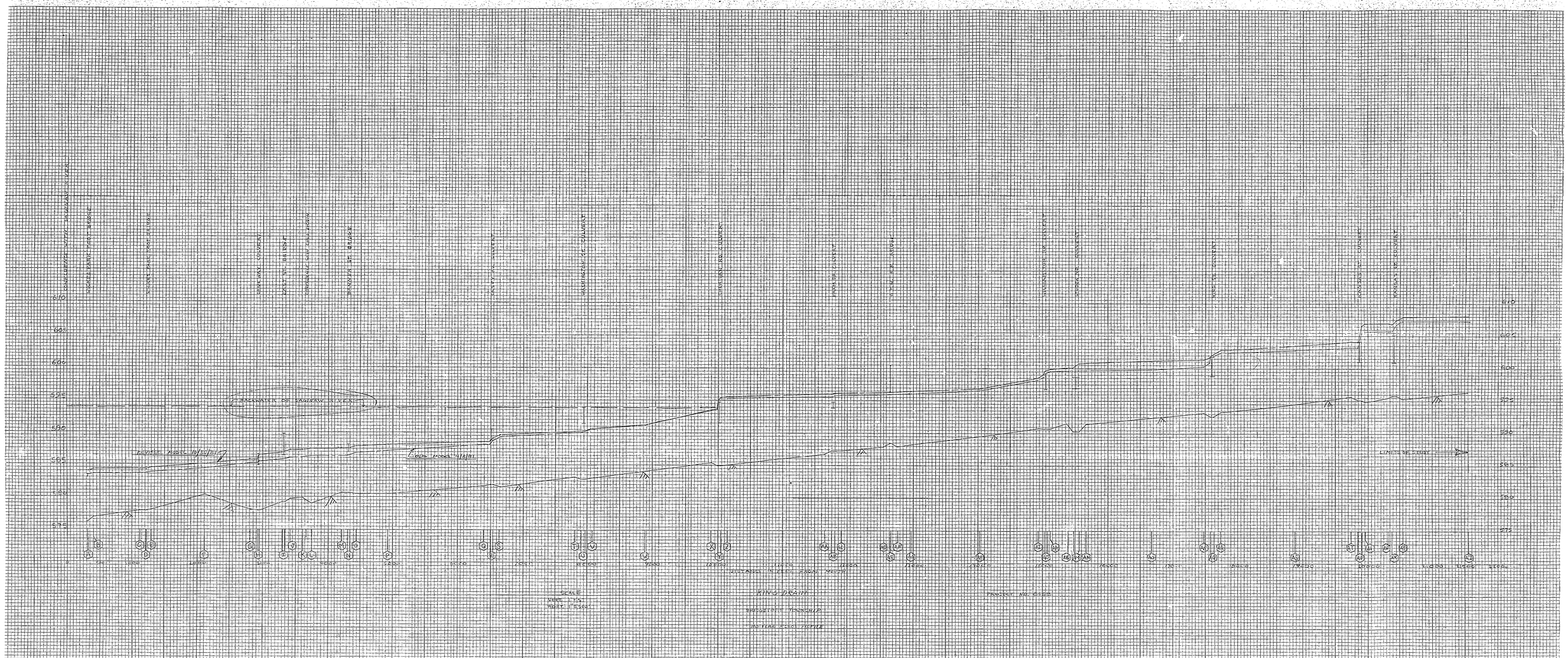
REVISED 2/3/82

GOVE ASSOCIATES INC.
KALAMAZOO LANSING

RECEIVED
FEB 3 1982
WATER MANAGEMENT

RECEIVED
FEB 22 1982
WATER MANAGEMENT

RECEIVED
FEB 22 1982
WATER MANAGEMENT



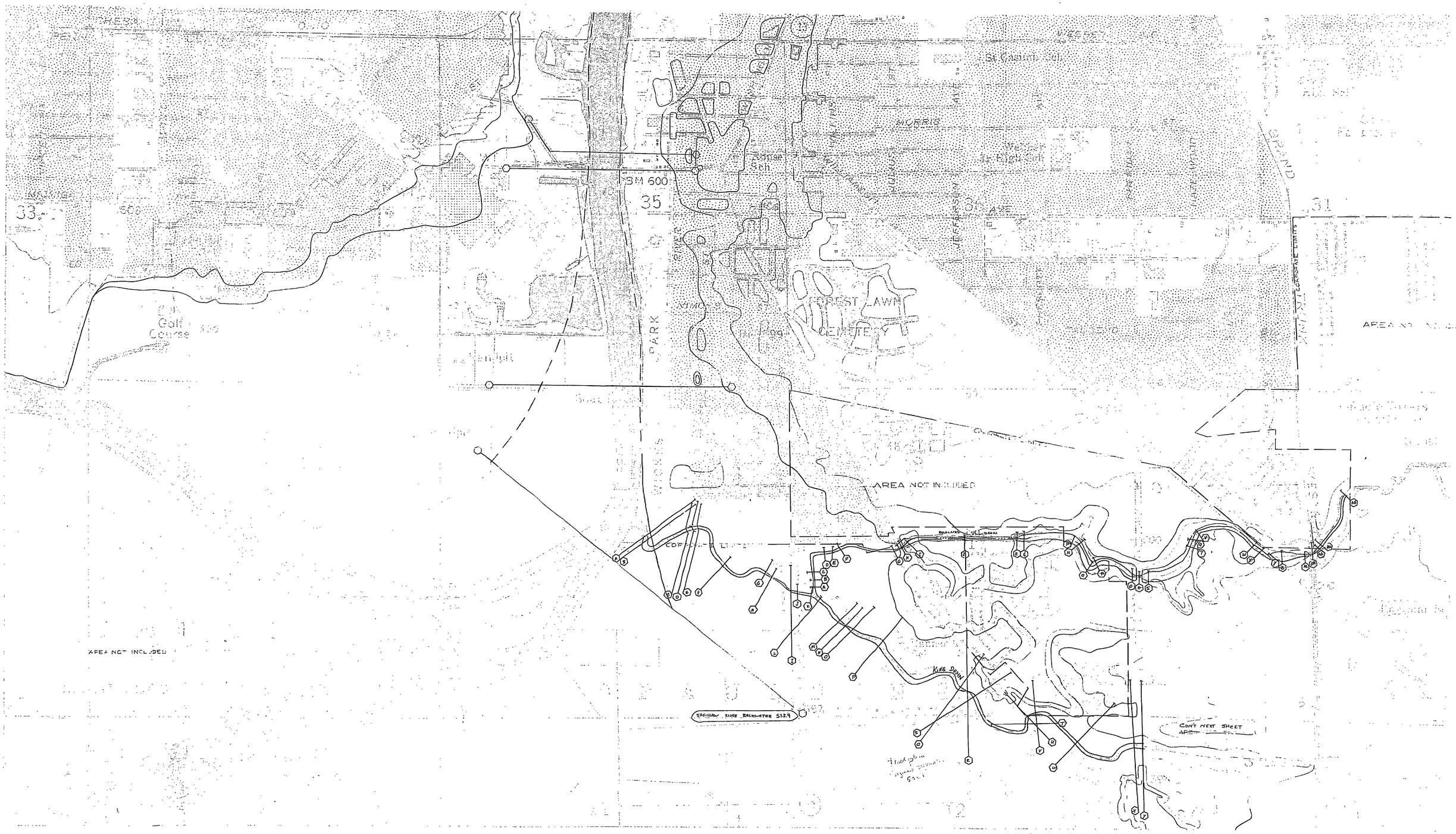
K+E 10 X 10 TO THE INCH KEUFFEL & ESSER CO. PRINTED IN U.S.A. 359-1001

NOV 5 1981

WATER MANAGEMENT

K+E 10 X 10 TO THE INCH KEUFFEL & ESSER CO. PRINTED IN U.S.A. 359-1001

BRIDGEPORT TWP.
KING DR.



RECEIVED
NOV 5 1981
WATER MANAGEMENT

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BUENA VISTA TWP.

3) WATERCOURSE: KOEHLER DRAIN

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

```
  .000024     100.     100.     100.        2        0        0     0.00   188.90   252.89
0
 SPECIAL BRIDGE
 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      5.50      0.00      23.76     0.00      590.20    590.20
 *SECNO 13907.000
 3280 CROSS SECTION  13907.00 EXTENDED        .29 FEET
 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
   599.08    598.18     0.00       66.      135.       24.       30.      595.70     598.10


 3470 ENCROACHMENT STATIONS          .0      342.0  TYPE      1  TARGET      341.999
  13907.00     8.19    598.29     0.00      0.00    598.29      .00       .65      0.00    592.90
      200.     188.       11.       1.      561.       40.      26.       21.       16.    592.90
      1.13      .33       .28      .04      .030      .050     .060     0.000    590.10     50.00
   .000011      40.       40.      40.         0         0        5      0.00    292.00    342.00
0
 *SECNO 14105.000
 3280 CROSS SECTION  14105.00 EXTENDED       1.69 FEET
1
 82/11/17.   07.50.57.                                                                    PAGE   27

          V
  14105.00     8.09    598.29     0.00      0.00    598.29      .00       .00       .00    597.20
      200.     106.       50.      44.      372.      143.     327.       22.       17.    596.80
      1.23      .28       .35      .13      .030      .050     .060     0.000    590.20      0.00
   .000019     100.      100.     100.         0         0        0      0.00    500.00    500.00
0
 *SECNO 15000.000
 3280 CROSS SECTION  15000.00 EXTENDED       1.70 FEET

  15000.00     8.11    598.31     0.00      0.00    598.31      .00       .01       .00    597.20
      200.     106.       50.      44.      375.      143.     330.       38.       26.    596.80
      2.07      .28       .35      .13      .030      .050     .060     0.000    590.20      0.00
   .000018     800.      800.     800.         0         0        0      0.00    500.00    500.00
0
1
 82/11/17.   07.50.57.                                                                    PAGE   28


                                                                  THIS RUN EXECUTED  82/11/17.   07.50.59.
 ***************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
   ERROR CORR -  01,02,03,04,05
   MODIFICATION -  50,51,52,53,54,55
 ***************************************************


 T1
 T2
 T3
 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.        6.        0.        0.  0.000000      0.00       0.0        0.    579.500    0.000
 J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     15.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
1
 82/11/17.   07.50.57.                                                                    PAGE   29

   SECNO     DEPTH     CWSEL     CRI S     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QRO       ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VRO       XNL       XNCH      XNR       WTN       ELMIN      SST
```

```
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOP ID    ENDST

*PROF 2

CCHV      .100 CEHV      .300
*SECNO 7025.000
3720 CRITICAL DEPTH ASSUMED
          A     7 X 22.5 CONCRETE PIPE, TR 587.3, LC 584.8,
          AA    7 X 22.5 CONCRETE PIPE, TR 587.0, LC 585.1

  7025.00     4.28   582.38   582.38   579.50   584.02     1.64     0.00     0.00   587.00
     236.       0.     236.       0.       0.      23.       0.       0.       0.   587.00
     0.00     0.00    10.28     0.00     .030     .045     .060    0.000   578.10   246.50
  .042312       0.       0.       0.        0       19        0     0.00     7.00   253.50
0
*SECNO 7027.000

3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    587.00 MAX ELLC    587.00

3470 ENCROACHMENT STATIONS          .0     320.0  TYPE       1  TARGET       319.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        587.30 ELREA        587.30

  7027.00     4.33   582.43   582.29     0.00   584.06     1.64      .04      .00   587.00
     236.       0.     236.       0.       0.      23.       0.       0.       0.   587.00
      .00     0.00    10.27     0.00     .030     .045     .060    0.000   578.10   246.50
  .043118       1.       1.       1.        0       12        0     -.27     7.00   253.50
0
*SECNO 7028.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE       1  TARGET         7.000
 ELENCL      587.30  ELENCR      587.30
  7028.00     5.86   583.96     0.00     0.00   584.71      .75      .56      .09   587.00
     236.       0.     236.       0.       0.      34.       0.       0.       0.   587.30


      .00     0.00     6.94     0.00     .030     .045     .060    0.000   578.10   246.50
  .015451      23.      23.      23.        3        0        0     0.00     7.00   253.50
0
1
 82/11/17.    07.50.57.                                                                PAGE   30

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

*SECNO 7029.000

3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE       1  TARGET         7.000
 ELENCL      587.30  ELENCR      587.30
  7029.00     5.89   583.99     0.00     0.00   584.73      .74      .02      .00   587.00
     236.       0.     236.       0.       0.      34.       0.       0.       0.   587.30
      .00     0.00     6.89     0.00     .030     .045     .060    0.000   578.10   246.50
  .015217       1.       1.       1.        0        0        0     0.00     7.00   253.50
0
*SECNO 7524.000
  7524.00     6.73   584.83     0.00     0.00   585.37      .54      .62      .02   587.00
     236.       0.     236.       0.       0.      40.       0.       0.       0.   587.00
      .00     0.00     5.89     0.00     .030     .045     .060    0.000   578.10   246.50
  .010302      50.      50.      50.        2        0        0     0.00     7.00   253.50
0
*SECNO 7525.000
3280 CROSS SECTION    7525.00 EXTENDED       1.28 FEET

3470 ENCROACHMENT STATIONS        237.0      270.0  TYPE       1  TARGET        33.000
  7525.00     6.98   586.08     0.00     0.00   586.13      .05      .72      .05   586.30
     236.       0.     236.       0.       0.     126.       0.       1.       0. 100000.00
      .07     0.00     1.38     0.00     .030     .045     .060    0.000   579.10   237.44
  .000586     470.     470.     470.        4        0        0     0.00    31.76   269.19
0
*SECNO 7655.000

3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE       1  TARGET         7.000
 ELENCL      586.20  ELENCR      586.20
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        586.20 ELREA        586.20
          B     7.0 X 20 CMP, TR 586.8, LC 586.0
  7655.00     6.96   585.96     0.00     0.00   586.46      .49      .19      .13   586.80
     236.       0.     236.       0.       0.      42.       0.       1.       0.    586.80
      .08     0.00     5.65     0.00     .030     .045     .060    0.000   579.00   246.50
  .009305     130.     130.     130.        2        0        0     0.00     7.00   253.50
0
1
 82/11/17.   07.50.57.                                                                PAGE   31

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


*SECNO 7657.000

3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    586.80 MAX ELLC    586.80

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        586.20 ELREA        586.20

  7657.00     6.82   585.82     0.00     0.00   586.53      .71      .00      .06   586.80
     236.       0.     236.       0.       0.      35.       0.       1.       0.    586.80
      .08     0.00     6.76     0.00     .030     .015     .060    0.000   579.00   246.50
  .002298       1.       1.       1.        2        0        0    -5.81     7.00   253.50
0
*SECNO 7658.000

3470 ENCROACHMENT STATIONS       246.5      253.5  TYPE       1  TARGET         7.000
 ELENCL      586.20  ELENCR      586.20
  7658.00     7.11   586.11     0.00     0.00   586.58      .47      .03      .02   586.80
     236.       0.     236.       0.       0.      43.       0.       1.       0.    586.80
      .08     0.00     5.52     0.00     .030     .015     .060    0.000   579.00   246.50
  .000978      21.      21.      21.        2        0        0     0.00     7.00   253.50
0
*SECNO 7659.000

3470 ENCROACHMENT STATIONS       246.5      253.5  TYPE       1  TARGET         7.000
 ELENCL      586.20  ELENCR      586.20
  7659.00     7.11   586.11     0.00     0.00   586.58      .47      .00      .00   586.80
     236.       0.     236.       0.       0.      43.       0.       1.       0.    586.80
      .08     0.00     5.52     0.00     .030     .055     .060    0.000   579.00   246.50
  .013148       1.       1.       1.        0        0        0     0.00     7.00   253.50
0
*SECNO 7765.000

3470 ENCROACHMENT STATIONS       200.0      269.0  TYPE       1  TARGET        69.000
          C
  7765.00     4.78   587.08     0.00     0.00   587.22      .14      .61      .03   590.10
     236.       0.     236.       0.       0.      78.       0.       1.       0. 100000.00
      .09     0.00     3.04     0.00     .030     .055     .060    0.000   582.30   238.88
  .003472     100.     100.     100.        2        0        0     0.00    27.53   266.41
0
1
 82/11/17.   07.50.57.                                                                PAGE   32

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

*SECNO 9655.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS       247.0      253.0  TYPE       1  TARGET         6.000
          D     SQUARE CONCRETE PIPE, TR 590., LC 586.9  8 X 4 X 60
  9655.00     4.23   587.13     0.00     0.00   588.47     1.34      .89      .36   590.00
     236.       0.     236.       0.       0.      25.       0.       1.       0. 100000.00
      .09     0.00     9.29     0.00     .030     .055     .060    0.000   582.90   247.00
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SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.40      2.63    200.00      6.00      0.00     24.00      0.00    582.90    582.90

*SECNO 9656.000

3301 HV CHANGED MORE THAN HVINS

PRESSURE FLOW

 EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID AREA    ELLC      ELTRD
  589.23    588.47     0.00        0.       236.       24.        20.       586.30    590.00

3470 ENCROACHMENT STATIONS      247.0     253.0  TYPE      1  TARGET      6.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      590.00 ELREA      590.00

  9656.00      5.55    588.45      0.00      0.00    589.23       .78       .76      0.00    590.00
     236.        0.      236.        0.        0.       33.        0.        2.        0. 100000.00
      .09      0.00      7.08      0.00      .030      .055      .060     0.000    582.90    247.00
  .028247       60.       60.       60.         3         0         0      0.00     6.00    253.00
0
*SECNO 9660.000

3470 ENCROACHMENT STATIONS      246.0     253.0  TYPE      1  TARGET      7.000
1
 82/11/17.   07.50.57.                                                                    PAGE   33

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      590.00 ELREA      590.00

        E    4.8 X 7.6 X 180 ELLIPTICAL CONCRETE PIPE,WASHINGTON ROAD
  9660.00      5.59    588.49      0.00      0.00    589.26       .77       .03       .00    590.00
     236.        0.      236.        0.        0.       34.        0.        2.        0. 100000.00
      .09      0.00      7.03      0.00      .030      .055      .060     0.000    582.90    247.00
  .027737        1.        1.        1.         0         0         0      0.00     6.00    253.00
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.45      2.63      0.00      7.50      0.00     29.50      0.00    582.10    582.10

*SECNO 9875.000
PRESSURE AND WEIR FLOW

 EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID AREA    ELLC      ELTRD
  589.94    588.59     0.00       45.       192.       30.        42.       587.70    589.30

3470 ENCROACHMENT STATIONS        .0     318.0  TYPE      1  TARGET    317.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      589.30 ELREA      589.30

        F
  9875.00      6.02    588.92      0.00      0.00    589.45       .53       .19      0.00    589.30
     236.        0.      236.        0.        0.       40.        0.        2.        0.    589.30
      .10      0.00      5.86      0.00      .030      .055      .060     0.000    582.90    246.30
  .014666      180.      180.      180.         6         0         4      0.00     7.50    253.80
0
*SECNO 9925.000
3280 CROSS SECTION   9925.00 EXTENDED       .44 FEET
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3470 ENCROACHMENT STATIONS        125.0      300.0  TYPE        1  TARGET        175.000
  9925.00      6.84    589.64      0.00    589.62    589.67       .04       .17       .05    589.20
     236.       24.      201.       11.       33.      123.       31.        2.        1.    589.20
      .12       .72      1.64       .36      .030      .055      .060     0.000    582.80    125.00
  .000638      100.      100.      100.         3         0         0      0.00    175.00    300.00
0
1
 82/11/17.   07.50.57.                                                                          PAGE   34

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

 *SECNO 10675.000
 3280 CROSS SECTION  10675.00 EXTENDED        .33 FEET

 3470 ENCROACHMENT STATIONS        125.0      300.0  TYPE        1  TARGET        175.000
        G    7 X 22.5 CONCRETE PIPE, TR 591.8, LC 590.9
  10675.00      6.73    590.03      0.00    589.96    590.08       .04       .40       .00    589.70
     236.       16.      212.        8.       25.      119.       23.        4.        3.    589.70
      .22       .66      1.78       .33      .030      .055      .060     0.000    583.30    125.00
  .000776      570.      570.      570.         4         0         0      0.00    175.00    300.00
0
 *SECNO 10676.000

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS          .0      311.0  TYPE        1  TARGET        310.999

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        591.80 ELREA        591.80

  10676.00      6.44    589.84      0.00    589.76    590.46       .62       .21       .17    591.30
     236.        0.      236.        0.        0.       37.        0.        4.        3.    591.30
      .22      0.00      6.31      0.00      .030      .055      .060     0.000    583.40    246.50
  .018271      100.      100.      100.         2         0         0      0.00      7.00    253.50
0
 *SECNO 10677.000

 3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    591.80 MAX ELLC    591.80

 3470 ENCROACHMENT STATIONS          .0      311.0  TYPE        1  TARGET        310.999

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        591.80 ELREA        591.80

  10677.00      6.35    589.75      0.00    589.67    590.51       .76       .00       .04    591.30
     236.        0.      236.        0.        0.       34.        0.        4.        3.    591.30
      .22      0.00      6.99      0.00      .030      .012      .060     0.000    583.40    246.50
  .001265        1.        1.        1.         2         0         0     -2.95      7.00    253.50
0
1
 82/11/17.   07.50.57.                                                                          PAGE   35

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

 *SECNO 10678.000

 3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    591.80 MAX ELLC    591.80

  10678.00      6.38    589.78      0.00    589.70    590.53       .75       .03       .00    591.30
     236.        0.      236.        0.        0.       34.        0.        5.        3.    591.30
      .22      0.00      6.95      0.00      .030      .012      .060     0.000    583.40    246.50
  .001253       23.       23.       23.         2         0         0     -3.05      7.00    253.50
0
 *SECNO 10679.000

 3470 ENCROACHMENT STATIONS        240.0      270.0  TYPE        1  TARGET        30.000
  10679.00      6.56    589.96      0.00    589.88    590.55       .59       .00       .02    591.30
     236.        0.      236.        0.        0.       38.        0.        5.        3.    591.30
      .22      0.00      6.17      0.00      .030      .050      .060     0.000    583.40    246.50
  .014[illegible]97        1.        1.        1.         2         0         0      0.00      7.00    253.50
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0
*SECNO 10785.000

 10785.00      5.86    590.96      0.00    590.91    591.09       .14       .50       .05    591.90
     236.        0.      236.        0.        0.       79.        0.        5.        3.    592.60
      .23      0.00      2.98      0.00      .030      .050      .060     0.000    585.10    241.48
  .002485      100.      100.      100.         2         0         0      0.00     24.79    266.27
0
*SECNO 11725.000
3280 CROSS SECTION  11725.00 EXTENDED        .13 FEET

3470 ENCROACHMENT STATIONS          .0      311.0  TYPE      1  TARGET       310.999
         H     7.0 X 22.5 CONCRETE PIPE, TR 593.9, LC 592.7
 11725.00      6.13    592.73      0.00    592.72    592.85       .12      1.75       .00    593.40
     236.        0.      236.        0.        0.       86.        0.        6.        4.    594.10



      .31      0.00      2.75      0.00      .030      .050      .060     0.000    586.60    241.05
  .001988      790.      790.      790.         4         0         0      0.00     25.84    266.89
0
*SECNO 11726.000

3470 ENCROACHMENT STATIONS       246.5      253.5  TYPE      1  TARGET         7.000
1
 82/11/17.    07.50.57.                                                                    PAGE   36

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       593.00 ELREA       593.00

 11726.00      7.07    592.87      0.00    592.86    593.35       .48       .39       .11    593.90
     236.        0.      236.        0.        0.       42.        0.        6.        4. 100000.00
      .32      0.00      5.56      0.00      .030      .050      .060     0.000    585.80    246.50
  .011048      100.      100.      100.         2         0         0      0.00      7.00    253.50
0
SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      7.00      0.00      38.50     0.00     586.50    586.50

*SECNO 11728.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS     593.633  EGLWC     593.954  ELLC     592.700  PCWSE     592.869  ELTRD     593.900

3370 NORMAL BRIDGE,NRD   7 MIN ELTRD   593.90 MAX ELLC   592.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       593.90 ELREA       593.90

 11728.00      7.53    593.33      0.00    593.33    594.04       .71       .62       .07    593.90
     236.        0.      236.        0.        0.       35.        0.        6.        4.    593.90
      .32      0.00      6.74      0.00      .030      .050      .060     0.000    585.80    246.50
  .026946       38.       38.       38.         2         0         0    -10.74      7.00    253.50
0
*SECNO 11925.000
3280 CROSS SECTION  11925.00 EXTENDED        .42 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS         50.0      300.0  TYPE      1  TARGET       250.000
         I     7.0 X 37 CONCRETE PIPE, TR 594.3, LC 593.5
 11925.00      8.22    594.72      0.00    594.72    594.78       .06       .68       .06    594.30
     236.      100.      124.       12.       82.       50.       19.        7.        4.    594.30
      .34      1.22      2.48       .61      .030      .050      .060     0.000    586.50     50.00
  .001942      140.      140.      140.         5         0         0      0.00    250.00    300.00
0
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 11926.000
3280 CROSS SECTION  11926.00 EXTENDED      .59 FEET

 11926.00     8.38   594.88      0.00   594.88   594.91      .03       .13       .00   594.30
     236.     119.     87.      29.     116.      51.      57.        7.        5.   594.30
      .36     1.03    1.70      .52     .030     .050     .060     0.000    586.50    50.00
  .000887     100.    100.     100.        3        0        0      0.00    300.00   350.00
0
SPECIAL BRIDGE
SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      7.00      0.00     38.50     0.00    586.50    586.50

*SECNO 11927.000
3280 CROSS SECTION  11927.00 EXTENDED      .60 FEET
PRESSURE AND WEIR FLOW

EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID AREA     ELLC      ELTRD
  595.65    594.91      0.00      182.       54.       39.       49.    593.50    594.30

3470 ENCROACHMENT STATIONS     50.0     350.0  TYPE     1  TARGET     -50.000
 11927.00     8.40   594.90      0.00   594.90   594.92      .02       .01       .00   594.30
     236.     121.     86.      30.     118.      51.      58.        7.        5.   594.30
      .37     1.02    1.66      .51     .030     .050     .060     0.000    586.50    50.00
  .000848      38.     38.      38.        2        0        8      0.00    300.00   350.00
0
*SECNO 12125.000
3280 CROSS SECTION  12125.00 EXTENDED      .77 FEET
          J   5.0 X 18 CONCRETE PIPE, TR 594.2, LC 592.3
 12125.00     7.66   594.96      0.00   594.96   594.99      .02       .06       .00   589.80
     236.     133.     59.      44.     113.      35.      75.        8.        5.   594.20
      .39     1.17    1.71      .59     .030     .050     .060     0.000    587.30   100.00
  .000811      75.     75.      75.        0        0        0      0.00    250.00   350.00
0
1
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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 12126.000
3280 CROSS SECTION  12126.00 EXTENDED      .89 FEET

3470 ENCROACHMENT STATIONS      .0     278.0  TYPE     1  TARGET     277.999
 12126.00     7.79   595.09      0.00   595.09   595.12      .03       .13       .00   589.80
     236.     164.     58.      14.     132.      35.      23.        8.        6.   594.20
      .42     1.24    1.65      .61     .030     .050     .060     0.000    587.30   100.00
  .000738     165.    165.     165.        1        0        0      0.00    178.00   278.00
0
SPECIAL BRIDGE
SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.35      2.63      0.00      5.00      0.00     19.63     0.00    587.30    587.30

*SECNO 12127.000
3280 CROSS SECTION  12127.00 EXTENDED      .90 FEET
PRESSURE AND WEIR FLOW
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 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  598.12    595.12     0.00      208.       28.       20.       25.       592.30    594.20


3470 ENCROACHMENT STATIONS        40.0      278.0  TYPE      1  TARGET      238.000
 12127.00     7.80   595.10     0.00   595.10   595.13      .03      .02      0.00    589.80
     236.     164.      58.      14.     134.      36.      23.       8.       6.     594.20
      .43     1.23     1.62      .60     .030     .050     .060    0.000   587.30    100.00
  .000715      19.      19.      19.        2        0        7     0.00   178.00    278.00
0
*SECNO 12355.000
        K     4.8 X 6.3 X 50 CMP TR 596.5, LC 592.3, C & O R. R.
            STARTING CROSS SECTION OF FLOOD STUDY AREA
        M     5 X 48 CMP, TR 596.5, LC 592.3
 12355.00     7.66   595.16     0.00   595.16   595.56      .40      .32      .11    596.50
     236.       0.     236.       0.       0.      47.       0.       9.       7.     596.50
      .44     0.00     5.06     0.00     .030     .050     .060    0.000   587.50    246.80
  .009325     180.     180.     180.        2        0        0     0.00     6.40    253.20
0
1
 82/11/17.   07.50.57.                                                                  PAGE   39

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

*SECNO 12356.000

3470 ENCROACHMENT STATIONS       170.0      320.0  TYPE      1  TARGET      150.000
 ELENCL     596.50  ELENCR     596.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       596.50 ELREA       587.50


 12356.00     8.54   596.04     0.00   596.04   596.27      .23      .69      .02    596.50
     200.       0.     200.       0.       0.      52.       0.       9.       7.     596.50
      .45     0.00     3.82     0.00     .030     .050     .060    0.000   587.50    246.80
  .005127     100.     100.     100.        2        0        0     0.00     6.40    253.20
0
SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.55      2.63      0.00      6.00      0.00      24.00     0.00     587.50    587.50

*SECNO 12357.000
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  597.71    596.27     0.00       74.      126.       24.       29.       592.30    596.50


3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
 12357.00     9.00   596.50     0.00   596.50   596.71      .20      .44      0.00    596.50
     200.       0.     200.       0.       0.      55.       0.       9.       7.     596.50
      .45     0.00     3.62     0.00     .030     .050     .060    0.000   587.50    246.80
  .004522      97.      97.      97.        2        0        5     0.00     6.40    253.20
0
*SECNO 12505.000
3280 CROSS SECTION  12505.00 EXTENDED      1.53 FEET

3470 ENCROACHMENT STATIONS        50.0      276.0  TYPE      1  TARGET      226.000
        N
 12505.00     9.33   596.73     0.00   596.73   596.74      .00      .01      .02    596.60
     200.     125.      72.       3.     307.     148.      16.      10.       7.     595.40
      .52      .41      .49      .16     .030     .050     .060    0.000   587.40     50.00
  .000034     100.     100.     100.        2        0        0     0.00   226.00    276.00
0
1
 82/11/17.   07.50.57.                                                                  PAGE   40
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 12705.000
3280 CROSS SECTION  12705.00 EXTENDED      1.04 FEET

3470 ENCROACHMENT STATIONS        50.0      368.0  TYPE      1  TARGET      318.000
        0     6.5 X 62 CONCRETE PIPE, TR 595.7, LC 594.3
 12705.00     8.94    596.74      0.00    596.74    596.74       .01       .01       .00    595.70
     200.     131.       38.       32.      204.       52.      100.       11.        7.    595.70
      .55      .64       .73       .32      .030      .050      .060     0.000    587.80     50.00
  .000159      80.       80.       80.         2         0         0      0.00    300.00    350.00
0

*SECNO 12706.000
3280 CROSS SECTION  12706.00 EXTENDED      1.05 FEET

3470 ENCROACHMENT STATIONS        50.0      365.0  TYPE      1  TARGET      315.000
 12706.00     8.95    596.75      0.00    596.75    596.76       .01       .02       .00    595.70
     200.     131.       37.       32.      206.       52.      101.       11.        8.    595.70
      .60      .63       .72       .32      .030      .050      .060     0.000    587.80     50.00
  .000155     100.      100.      100.         0         0         0      0.00    300.00    350.00
0

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.00       1.34       2.63       0.00       6.50       0.00       33.20      0.00      587.80     587.80

*SECNO 12707.000
3280 CROSS SECTION  12707.00 EXTENDED      1.08 FEET

PRESSURE AND WEIR FLOW

  EGPRS      EGLWC       H3        QWEIR      QPR        BAREA    TRAPEZOID      ELLC      ELTRD
                                                                     AREA
   597.51     596.76     0.00       163.       37.        33.        42.       594.30     595.70

3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
 12707.00     8.97    596.77      0.00    596.77    596.78       .01       .02      0.00    595.70
     200.     150.       41.        9.      212.       52.       27.       12.        9.    595.70
      .62      .71       .78       .34      .030      .050      .060     0.000    587.80     50.00
  .000185      62.       62.       62.         0         0         7      0.00    228.00    278.00
0
1
 82/11/17.   07.50.57.                                                                    PAGE   41

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

*SECNO 12905.000
3280 CROSS SECTION  12905.00 EXTENDED      1.68 FEET

3470 ENCROACHMENT STATIONS        50.0      252.8  TYPE      1  TARGET      202.800
        P     5.5 X 20 CONCRETE PIPE, TR 595.1, LC 593.7
 12905.00     8.58    596.78      0.00    596.78    596.79       .00       .01       .00    595.10
     200.     182.       18.        0.      332.       43.        0.       12.        9. 100000.00
      .66      .55       .41       0.00      .030      .050      .060     0.000    588.20     50.00
  .000062      60.       60.       60.         0         0         0      0.00    202.80    252.80
0
*SECNO 12906.000
3280 CROSS SECTION  12906.00 EXTENDED      1.69 FEET

3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
```

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 12906.00      8.59    596.79      0.00    596.79    596.79       .00       .01       .00    595.10
     200.       172.       18.       11.      334.       43.       43.       13.        9.    595.10
      .71        .51       .41       .25      .030      .050      .060     0.000    588.20     50.00
  .000054       100.      100.      100.         0         0         0      0.00    228.00    278.00
0
 SPECIAL BRIDGE
 SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
      0.00       1.25       2.63       0.00       5.50       0.00       23.76      0.00      588.20     588.20
 *SECNO 12907.000
 3280 CROSS SECTION  12907.00 EXTENDED       1.71 FEET
 PRESSURE AND WEIR FLOW

  EGPRS       EGLWC        H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                         AREA
   598.16     596.79      0.00       175.       25.        24.        30.       593.70     595.10

 3470 ENCROACHMENT STATIONS          .0      278.0  TYPE       1  TARGET       277.999
 12907.00      8.61    596.81      0.00    596.80    596.81       .00       .02       0.00    595.10
     200.       172.       17.       11.      337.       43.       43.       13.        9.    595.10
      .72        .51       .40       .25      .030      .050      .060     0.000    588.20     50.00
  .000052        20.       20.       20.         0         0         7      0.00    228.00    278.00
0
1
 82/11/17.   07.50.57.                                                                          PAGE   42

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

 *SECNO 13055.000
 3280 CROSS SECTION  13055.00 EXTENDED       1.21 FEET

 3470 ENCROACHMENT STATIONS        100.0      275.0  TYPE       1  TARGET       175.000
          Q     5.0 X 22.5 CONCRETE PIPE, TR 595.6, LC 593.9
 13055.00      7.91    596.81      0.00    596.81    596.82       .01       .00       .00    595.60
     200.       159.       29.       12.      178.       36.       27.       14.       10.    595.60
      .74        .89       .81       .43      .030      .050      .060     0.000    588.90    100.00
  .000255        50.       50.       50.         0         0         0      0.00    175.00    275.00
0
 *SECNO 13056.000
 3280 CROSS SECTION  13056.00 EXTENDED       1.22 FEET

 3470 ENCROACHMENT STATIONS          .0      385.0  TYPE       1  TARGET       384.999
 13056.00      7.93    596.83      0.00    596.82    596.83       .00       .01       .00    595.60
     200.       145.       19.       36.      241.       36.      119.       14.       10.    595.60
      .78        .60       .54       .30      .030      .050      .060     0.000    588.90     50.00
  .000115        80.       80.       80.         0         0         0      0.00    300.00    350.00
0

 SPECIAL BRIDGE
 SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
      0.00       1.27       2.63       0.00       5.00       0.00       19.63      0.00      588.20     588.20
 *SECNO 13057.000
 3280 CROSS SECTION  13057.00 EXTENDED       1.25 FEET
 PRESSURE AND WEIR FLOW

  EGPRS       EGLWC        H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                         AREA
   598.87     596.13      0.00       177.       23.        20.        29.       593.90     595.60

 3470 ENCROACHMENT STATIONS          .0      385.0  TYPE       1  TARGET       384.999
 13057.00      7.95    596.85      0.00    596.84    596.85       .00       .02       0.00    595.60
     200.       14 .       19.       36.      247       36 )      1.2.       15.       10.     95 60
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     .79       .59       .52       .29      .030       .050      .060     0.000    588.90     50.00
  .000105     23.       23.       23.         0          0         7       0.00    300.00    350.00
0
1
 82/11/17.   07.50.57.                                                                                  PAGE   43

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

 *SECNO 13205.000
 3280 CROSS SECTION  13205.00 EXTENDED       1.05 FEET

 3470 ENCROACHMENT STATIONS       100.0      300.0  TYPE       1  TARGET       200.000
          R     6 X 22.5 CONCRETE PIPE, TR 595.8, LC 594.4
  13205.00     8.24    596.84      0.00    596.84    596.87       .02       .01       .01    591.60
      200.     109.       74.       17.      126.       44.       40.       15.       10.    591.60
       .80      .87      1.67       .43      .030      .050      .060     0.000    588.60    100.00
  .000386      40.       40.       40.         0         0         0      0.00    200.00    300.00
0
 *SECNO 13206.000
 3280 CROSS SECTION  13206.00 EXTENDED        .50 FEET

 3470 ENCROACHMENT STATIONS          .0      320.0  TYPE       1  TARGET       319.999
  13206.00     7.70    596.80      0.00    596.77    596.95       .15       .04       .04    592.10
      200.      44.      147.       10.       44.       41.       20.       15.       11.    592.10
       .81      .98      3.59       .49      .030      .050      .060     0.000    589.10    100.00
  .001986      60.       60.       60.         2         0         0      0.00    220.00    320.00
0
 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.37      2.63      0.00      6.00      0.00      28.27     0.00    588.90    588.90


 *SECNO 13207.000
 6870 D.S. ENERGY OF  596.95 HIGHER THAN COMPUTED ENERGY OF  596.83
 3280 CROSS SECTION  13207.00 EXTENDED        .39 FEET

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3        QWEIR     QPR       BAREA    TRAPEZOID      ELLC      ELTRD
                                                                  AREA
   597.86    596.75     0.00       165.       35.       28.        33.      594.40    595.80


 3470 ENCROACHMENT STATIONS       247.0      253.0  TYPE       1  TARGET         6.000
  ELENCL     595.80  ELENCR     595.80
  13207.00     7.78    596.88      0.00    596.87    596.95       .06      0.00      0.00    592.10
      200.      70.      107.       23.       57.       41.       38.       15.       11.    595.80
       .81     1.24      2.58       .62      .030      .050      .060     0.000    589.10    100.00
  .002220      23.       23.       23.         2         0         7      0.00    250.00    350.00
0
1
 82/11/17.   07.50.57.                                                                                  PAGE   44

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

 *SECNO 13505.000
 3280 CROSS SECTION  13505.00 EXTENDED       1.22 FEET

 3470 ENCROACHMENT STATIONS       125.0      300.0  TYPE       1  TARGET       175.000
          S     6 X 70 CONCRETE PIPE, TR 595.8, LC 594.9
  13505.00     8.12    597.02      0.00    596.98    597.03       .01       .08       .01    595.80
      200.     138.       36.       26.      149.       44.       57.       16.       12.    595.80
       .86      .92       .83       .46      .030      .055      .060     0.000    588.90    125.00
  .000270     135.      135.      135.         2         0         0      0.00    175.00    300.00
0
 *SECNO 13506.000
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3280 CROSS SECTION  13506.00 EXTENDED      1.25 FEET

3470 ENCROACHMENT STATIONS        100.0      300.0  TYPE       1  TARGET        200.000
 13506.00      8.15    597.05      0.00    597.00    597.06       .01       .02       .00    595.80
     200.      146.       31.       23.      183.       44.       59.       16.       12.    595.80
      .89       .80       .71       .39      .030      .055      .060     0.000    588.90    100.00
  .000194      100.      100.      100.         2         0         0      0.00    200.00    300.00
0

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS        ELCHU      ELCHD
     0.00       1.25       2.63       0.00       6.00       0.00       28.27      0.00     588.40     588.40

*SECNO 13507.000
3280 CROSS SECTION  13507.00 EXTENDED      1.27 FEET



PRESSURE AND WEIR FLOW

 EGPRS       EGLWC       H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                       AREA
   598.02     596.56      0.00       168.        32.        28.        39.       594.90     595.80

3470 ENCROACHMENT STATIONS          .0      313.0  TYPE       1  TARGET        312.999
 13507.00      8.17    597.07      0.00    597.02    597.07       .01       .02      0.00    595.80
     200.      153.       24.       23.      251.       44.       76.       17.       12.    595.80
      .93       .61       .54       .30      .030      .055      .060     0.000    588.90     50.00
  .000112       70.       70.       70.         0         0         7      0.00    263.00    313.00
0
1
 82/11/17.   07.50.57.                                                                    PAGE   45

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


*SECNO 13705.000

3470 ENCROACHMENT STATIONS        125.0      275.0  TYPE       1  TARGET        150.000
        T    5.5 X 48 CONCRETE PIPE, TR 597.4, LC 595.3
 13705.00      7.25    597.05      0.00    597.00    597.09       .04       .01       .01    596.00
     200.      112.       69.       18.       75.       35.       20.       17.       13.    596.00
      .93      1.49      1.96       .93      .030      .055      .060     0.000    589.80    125.00
  .001726       30.       30.       30.         2         0         0      0.00    150.00    275.00
0
*SECNO 13706.000

3470 ENCROACHMENT STATIONS          .0      292.0  TYPE       1  TARGET        291.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       597.00 ELREA       597.00

 13706.00      7.12    596.92      0.00    596.90    597.44       .52       .20       .14    597.40
     200.        0.      200.        0.        0.       35.        0.       17.       13.    597.40
      .94      0.00      5.79      0.00      .030      .055      .060     0.000    589.80    247.30
  .017947       50.       50.       50.         2         0         0      0.00      5.50    252.80
0

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS        ELCHU      ELCHD
     0.00       1.33       2.63       0.00       4.50       0.00       23.70      0.00     589.80     589.80

*SECNO 13707.000
PRESSURE AND WEIR FLOW

 EGPRS       EGLWC       H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                       AREA
   598.39     597.44      0.00        65.       135.        24.        34.       597.40     597.40
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3470 ENCROACHMENT STATIONS          .0      292.0  TYPE       1  TARGET       291.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        597.40 ELREA        597.40

 13707.00      7.30    597.10      0.00    597.09    597.59       .49       .15      0.00    597.40
     200.        0.      200.        0.        0.       36.        0.       17.       13.    597.40
      .94      0.00      5.62      0.00      .030      .055      .060     0.000    589.80    247.30
  .016791       48.       48.       48.         5         0         5      0.00      5.50    252.80
0
1
 82/11/17.   07.50.57.                                                                          PAGE   46

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

*SECNO 13905.000

3470 ENCROACHMENT STATIONS        150.0      300.0  TYPE       1  TARGET       150.000
         U     5.5 X 40 CONCRETE PIPE, TR 598.1, LC 595.7
 13905.00      7.74    597.64      0.00    597.64    597.64       .00       .00       .05    592.70
     200.       186.       14.        0.      358.       38.        0.       17.       13.    592.70
      .97        .52       .36       .01      .030      .050      .060     0.000    589.90    150.00
  .000020        55.       55.       55.         2         0         0      0.00    102.90    252.90
0
*SECNO 13906.000

3470 ENCROACHMENT STATIONS          .0      342.0  TYPE       1  TARGET       341.999
 13906.00      7.54    597.64      0.00    597.64    597.64       .00       .00       .00    592.90
     200.       186.       14.        0.      435.       37.        0.       18.       13.    592.90
     1.03        .43       .38       .02      .030      .050      .060     0.000    590.10     63.86
  .000023       100.      100.      100.         2         0         0      0.00    189.04    252.89
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      5.50      0.00      23.76     0.00     590.20    590.20

*SECNO 13907.000
3280 CROSS SECTION  13907.00 EXTENDED        .29 FEET

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3        QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  599.08     598.18     0.00        66.      134.       24.       30.      595.70     598.10

3470 ENCROACHMENT STATIONS          .0      342.0  TYPE       1  TARGET       341.999
 13907.00      8.19    598.29      0.00    598.29    598.29       .00       .65      0.00    592.90
     200.       188.       11.        1.      561.       40.       26.       19.       13.    592.90
     1.07        .33       .28       .04      .030      .050      .060     0.000    590.10     50.00


  .000011        40.       40.       40.         0         0         5      0.00    292.00    342.00
0
1
 82/11/17.   07.50.57.                                                                          PAGE   47

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

*SECNO 14105.000
3280 CROSS SECTION  14105.00 EXTENDED        .99 FEET

3470 ENCROACHMENT STATIONS        125.0      300.0  TYPE       1  TARGET       175.000
         V
 14105.00      8.09    598.29      0.00    598.29    598.29       .01       .00       .00    597.20
     200.        89.       97.       14.      169.      143.       49.       20.       14.    596.80
     1.11        .53       .08       .28      .030      .050      .060     0.000    590.20    125.00
```

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BUENA VISTA TWP

3) WATERCOURSE: KOEHLER DRAIN

4) DOCUMENT TYPE: 100 YR NATURAL

00BREAK00

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JJ      JJ  OO      OO  BBBBBBBBBB                  555555555555    77      OO      OO      77
JJ      JJ  OO      OO  BB      BB                          55      77      OO      OO      77
JJ      JJ  OO      OO  BB      BB                          55      77      OO      OO      77
JJ      JJ  OO      OO  BB      BB              55          55      77      OO      OO      77
JJJJJJJJJJJJ  OOOOOOOOOOOO  BBBBBBBBBBBB          555555555555    77       0000000000     77
 JJJJJJJJJJ   OOOOOOOOOOOO  BBBBBBBBBBB            5555555555     77        00000000      77

RRRRRRRRRRR     2222222222        11        2222222222          44    PPPPPPPPPPP   RRRRRRRRRRR        11
RRRRRRRRRRRR  222222222222      111      222222222222         444    PPPPPPPPPPPP  RRRRRRRRRRRR      111
RR        RR  22        22      1111      22        22       4444    PP        PP  RR        RR     1111
RR        RR            22        11                22      44 44    PP        PP  RR        RR       11
RR        RR            22        11                22     44  44    PP        PP  RR        RR       11
RRRRRRRRRRRR            22        11                22    44   44    PPPPPPPPPPPP  RRRRRRRRRRRR       11
RRRRRRRRRRR           22          11              22     44   44    PPPPPPPPPPP   RRRRRRRRRRR        11
RR    RR            22            11            22      4444444444  PP            RR     RR          11
RR      RR        22              11          22       444444444444 PP            RR      RR         11
RR       RR     22                11        22                44    PP            RR       RR        11
RR        RR    222222222222    1111111111  222222222222        44    PP            RR        RR    1111111111
RR        RR    222222222222    1111111111  222222222222        44    PP            RR        RR    1111111111

PPPPPPPPPPP   RRRRRRRRRRR   TTTTTTTTTTTT      11              44      00000000     3333333333
PPPPPPPPPPPP  RRRRRRRRRRRR  TTTTTTTTTTTT     111             444     0000000000   333333333333
PP        PP  RR        RR        TT       1111            4444    00        00  33        33
PP        PP  RR        RR        TT         11           44 44    00        00            33
PP        PP  RR        RR        TT         11          44  44    00        00            33
PPPPPPPPPPPP  RRRRRRRRRRRR        TT         11         44   44    00        00        3333
PPPPPPPPPPP   RRRRRRRRRRR         TT         11        44    44    00        00        3333
PP            RR      RR          TT         11      4444444444  00        00            33
PP            RR     RR           TT         11     444444444444 00        00            33
PP            RR    RR            TT         11              44  00        00  33        33
PP            RR   RR             TT     1111111111          44   0000000000  333333333333
PP            RR  RR              TT     1111111111          44    00000000    3333333333
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1*****************************************************                    *****************************************
 *  WATER SURFACE PROFILES                           *                    *  U.S. ARMY CORPS OF ENGINEERS
 *  VERSION OF NOVEMBER 1976                         *                    *  THE HYDROLOGIC ENGINEERING CENTER
 *  UPDATED MARCH 1982                               *                    *  609 SECOND STREET, SUITE D
 *                                                   *                    *  DAVIS, CALIFORNIA 95616
 *  RUN DATE  82/11/17. TIME  07.50.57.              *                    *   916  440-2105  FTS  448-2105
 *****************************************************                    *****************************************
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                                    X     X  XXXXXXX   XXXXX                XXXXX
                                    X     X  X        X     X            X     X
                                    X     X  X        X                        X
                                    XXXXXXX  XXXX     X          XXXXX    XXXXX
                                    X     X  X        X
                                    X     X  X        X     X            X
                                    X     X  XXXXXXX   XXXXX             XXXXXXX
1
 82/11/17.   07.50.57.                                                                    PAGE    1

                                                                   THIS RUN EXECUTED  82/11/17.   07.50.57.
 ***************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
   ERROR CORR -  01,02,03,04,05
   MODIFICATION -  50,51,52,53,54,55
 ***************************************************

 C
 T1       KOEHLER DRAIN, BUENA VISTA, PROJECT NO. 8557,'KEOHL3E'
 T2       KOEHLER DRAIN
 T3       KOEHLER DRAIN

 J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.       4.        0.        0.  0.000000      0.00      0.0       0.    579.500    0.000
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J2  NPROF     IPLOT     PREVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     0.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
    150.000   110.000   200.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

NC       .030      .060      .045      .100      .300     0.000     0.000     0.000     0.000     0.000
QT      5.000   230.000   232.000   236.000   242.000   236.000     0.000     0.000     0.000     0.000
         A    7 X 22.5 CONCRETE PIPE, TR 587.3, LC 584.8,
         AA   7 X 22.5 CONCRETE PIPE, TR 587.0, LC 585.1

X1   7025.000     9.000   246.500   253.500     0.000     0.000     0.000     0.000     0.000     0.000
GR    587.000    50.000   587.000   246.500   581.600   246.500   579.100   247.500   578.100   250.000


GR    579.100   252.500   581.600   253.500   587.000   253.500   587.000   350.000     0.000     0.000

X1   7027.000     0.000     0.000     0.000     1.000     1.000     1.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000   320.000     0.000   587.300   587.300     0.000
BT      7.000    50.000   587.000   587.000   246.500   587.000   581.600   247.500   587.000   584.100
BT    250.000   587.000   585.100   252.500   587.000   584.100   253.500   587.000   581.600   350.000
BT    587.000   587.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   7028.000     0.000     0.000     0.000    23.000    23.000    23.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     1.000     0.000     0.000
X3      0.000     0.000     0.000   246.500   587.300   253.500   587.300     0.000     0.000     0.000

X1   7029.000     0.000     0.000     0.000     1.000     1.000     1.000     0.000     0.000     0.000
X3      0.000     0.000     0.000   246.500   587.300   253.500   587.300     0.000     0.000     0.000

X1   7524.000     0.000     0.000     0.000    50.000    50.000    50.000     0.000     0.000     0.000
1
 82/11/17.   07.50.57.                                                                    PAGE    2


X1   7525.000    10.000   237.000   270.000   470.000   470.000   470.000     0.000     0.000     0.000
X3      0.000     0.000     0.000   237.000     0.000   270.000     0.000     0.000     0.000     0.000
GR    588.300     0.000   586.500   186.000   583.900   193.000   587.200   200.000   586.300   237.000
GR    579.700   250.000   579.100   253.000   579.700   257.000   586.500   270.000   584.800   400.000

         B    7.0 X 20 CMP, TR 586.8, LC 586.0
X1   7655.000     9.000   246.500   253.500   130.000   130.000   130.000     0.000     0.000     0.000
X3     10.000     0.000     0.000   246.500   586.200   253.500   586.200   586.200   586.200     0.000
GR    586.800    50.000   586.800   246.500   582.500   246.500   580.000   247.500   579.000   250.000
GR    580.000   252.500   582.500   253.500   586.800   253.500   586.800   350.000     0.000     0.000

NC      0.000     0.000      .015     0.000     0.000     0.000     0.000     0.000     0.000     0.000
X1   7657.000     0.000     0.000     0.000     1.000     1.000     1.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   586.200   586.200     0.000
BT      7.000    50.000   586.800   586.800   246.500   586.800   582.500   247.500   586.800   585.000
BT    250.000   586.800   586.000   252.500   586.800   585.000   253.500   586.800   582.500   350.000
BT    586.800   586.800     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1   7658.000     0.000     0.000     0.000    21.000    21.000    21.000     0.000     0.000     0.000
X2      0.000     0.000     0.000     0.000     0.000     0.000     0.000     1.000     0.000     0.000
X3      0.000     0.000     0.000   246.500   586.200   253.500   586.200     0.000     0.000     0.000

NC      0.000     0.000      .055     0.000     0.000     0.000     0.000     0.000     0.000     0.000
X1   7659.000     0.000     0.000     0.000     1.000     1.000     1.000     0.000     0.000     0.000
X3      0.000     0.000     0.000   246.500   586.200   253.500   586.200     0.000     0.000     0.000

         C
X1   7765.000    11.000   200.000   269.000   100.000   100.000   100.000     0.000     0.000     0.000
X3      0.000     0.000     0.000   200.000     0.000   269.000     0.000     0.000     0.000     0.000
GR    587.600     0.000   588.000   168.000   586.300   176.000   590.100   200.000   589.600   232.000
GR    583.000   250.000   582.300   254.000   583.000   259.000   588.500   269.000   588.400   300.000
GR    587.600   500.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

         D    SQUARE CONCRETE PIPE, TR 590., LC 586.9  8 X 4 X 60
X1   9655.000     6.000   247.000   253.000   100.000   100.000   100.000     0.000     0.000     0.000
X3     10.000     0.000     0.000   247.000     0.000   253.000     0.000   587.000   587.000     0.000
GR    590.000    50.000   590.000   247.000   582.900   247.000   582.900   253.000   590.000   253.000
GR    590.000   350.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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SB	0.000	1.400	2.630	200.000	6.000	0.000	24.000	0.000	582.900	582.900
X1	9656.000	0.000	0.000	0.000	60.000	60.000	60.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	586.300	590.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	247.000	0.000	253.000	0.000	590.000	590.000	0.000
BT	2.000	247.000	590.000	586.900	253.000	590.000	586.900	0.000	0.000	0.000

E 4.8 X 7.6 X 180 ELLIPTICAL CONCRETE PIPE,WASHINGTON ROAD

X1	9660.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	246.000	0.000	253.000	0.000	590.000	590.000	0.000

SB	0.000	1.450	2.630	0.000	7.500	0.000	29.500	0.000	582.100	582.100

F

X1	9875.000	11.000	246.300	253.800	180.000	180.000	180.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	587.700	589.300	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	318.000	0.000	589.300	589.300	0.000
BT	9.000	50.000	589.300	589.300	246.300	589.300	585.300	247.500	589.300	587.100
BT	248.500	589.300	587.500	250.000	589.300	587.700	251.500	589.300	587.500	252.500
BT	589.300	587.100	253.800	589.300	585.300	350.000	589.300	589.300	0.000	0.000
GR	589.300	50.000	589.300	246.300	585.300	246.300	583.500	247.500	583.100	248.500
GR	582.900	250.000	583.100	251.500	583.500	252.500	585.300	253.800	589.300	253.800
GR	589.300	350.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	0.000	0.000	0.000	9.100	0.000	0.000	125.000	300.000
X1	9925.000	7.000	200.000	230.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	589.200	50.000	589.200	200.000	583.400	211.000	582.800	215.000	583.400	218.000
GR	589.200	230.000	589.200	350.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	0.000	0.000	0.000	9.100	0.000	0.000	125.000	300.000

G 7 X 22.5 CONCRETE PIPE, TR 591.8, LC 590.9

X1	10675.000	0.000	0.000	0.000	570.000	570.000	570.000	0.000	.500	0.000
X1	10676.000	9.000	246.500	253.500	100.000	100.000	100.000	0.000	-.500	0.000
X3	10.000	0.000	0.000	0.000	0.000	311.000	0.000	591.800	591.800	0.000
GR	591.800	50.000	591.800	246.500	587.400	246.500	584.600	248.000	583.900	250.000
GR	584.600	252.000	587.400	253.500	591.800	253.500	591.800	350.000	0.000	0.000
NC	0.000	0.000	.012	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10677.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	311.000	0.000	591.800	591.800	0.000
BT	7.000	50.000	591.800	591.800	246.500	591.800	587.400	248.000	591.800	590.200
BT	250.000	591.800	590.900	252.000	591.800	590.200	253.500	591.800	587.400	350.000
BT	591.800	591.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10678.000	0.000	0.000	0.000	22.500	22.500	22.500	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
NC	0.000	0.000	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10679.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	240.000	0.000	270.000	0.000	0.000	0.000	0.000
X1	10785.000	8.000	240.000	270.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	591.700	0.000	591.700	200.000	591.900	240.000	585.500	250.000	585.100	253.000
GR	592.600	270.000	591.900	300.000	591.100	500.000	0.000	0.000	0.000	0.000

H 7.0 X 22.5 CONCRETE PIPE, TR 593.9, LC 592.7

X1	11725.000	0.000	0.000	0.000	790.000	790.000	790.000	0.000	1.500	0.000
X3	10.000	0.000	0.000	0.000	0.000	311.000	0.000	592.500	592.500	0.000

X1	11726.000	9.000	246.500	253.500	100.000	100.000	100.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	246.500	0.000	253.500	0.000	593.000	593.000	0.000
GR	593.900	50.000	593.900	246.500	589.300	246.500	586.800	247.500	585.800	250.000
GR	586.800	252.500	589.300	253.500	593.900	253.500	593.900	350.000	0.000	0.000
SB	0.000	1.310	2.630	0.000	7.000	0.000	38.500	0.000	586.500	586.500
X1	11728.000	0.000	0.000	0.000	38.000	38.000	38.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	592.700	593.900	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	593.900	593.900	0.000
BT	7.000	50.000	593.900	593.900	246.500	593.900	589.300	247.500	593.900	591.800
BT	250.000	593.900	592.800	252.500	593.900	591.800	253.500	593.900	589.300	350.000
BT	593.900	593.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MOORE BUSINESS FORMS INC 77

I 7.0 X 37 CONCRETE PIPE, TR 597.3, LC 593.3

X1	11925.000	9.000	246.500	253.500	140.000	140.000	140.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	300.000	0.000	0.000	0.000	0.000
GR	594.300	50.000	594.300	246.500	590.000	246.500	587.100	248.000	586.500	250.000
GR	587.100	252.000	590.000	253.500	594.300	253.500	594.300	350.000	0.000	0.000
X1	11926.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	594.300	594.300	0.000
SB	0.000	1.310	2.630	0.000	7.000	0.000	38.500	0.000	586.500	586.500
X1	11927.000	0.000	0.000	0.000	38.000	38.000	38.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	593.500	594.300	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	50.000	0.000	0.000	0.000	594.300	594.300	0.000
BT	7.000	50.000	594.300	594.300	246.500	594.300	590.000	248.000	594.300	592.900
BT	250.000	594.300	593.500	252.000	594.300	592.900	253.500	594.300	590.000	350.000
BT	594.300	594.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

J 5.0 X 18 CONCRETE PIPE, TR 594.2, LC 592.3

X1	12125.000	9.000	247.500	252.500	75.000	75.000	75.000	0.000	0.000	0.000
GR	594.200	100.000	594.200	247.400	589.800	247.500	587.700	248.500	587.300	250.000
GR	587.700	251.500	589.800	252.500	594.200	252.500	594.200	350.000	0.000	0.000
X1	12126.000	0.000	0.000	0.000	165.000	165.000	165.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	278.000	0.000	594.200	594.200	0.000
SB	0.000	1.350	2.630	0.000	5.000	0.000	19.630	0.000	587.300	587.300
X1	12127.000	0.000	0.000	0.000	19.000	19.000	19.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	592.300	594.200	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	40.000	0.000	278.000	0.000	0.000	0.000	0.000
BT	7.000	100.000	594.200	594.200	247.500	594.200	589.800	248.500	594.200	591.900
BT	250.000	594.200	592.300	251.500	594.200	591.900	252.500	594.200	589.800	350.000
BT	594.200	594.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

K 4.8 X 6.3 X 50 CMP TR 596.5, LC 592.3, C & O R. R.
STARTING CROSS SECTION OF FLOOD STUDY AREA

M 5 X 48 CMP, TR 596.5, LC 592.3

X1	12355.000	11.000	246.800	253.200	180.000	180.000	180.000	0.000	0.000	0.000
GR	596.500	50.000	596.500	246.800	589.200	246.800	587.900	247.500	587.700	248.500
GR	587.500	250.000	587.700	251.500	587.900	252.500	589.200	253.200	596.500	253.200
GR	596.500	350.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	5.000	200.000	200.000	200.000	200.000	200.000	0.000	0.000	0.000	0.000
X1	12356.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	170.000	596.500	320.000	596.500	0.000	587.500	587.500
SB	0.000	1.550	2.630	0.000	6.000	0.000	24.000	0.000	587.500	587.500
X1	12357.000	0.000	0.000	0.000	97.000	97.000	97.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	592.300	596.500	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	278.000	0.000	594.200	594.200	0.000
BT	9.000	50.000	596.500	596.500	246.800	596.500	589.200	247.500	596.500	590.100
BT	248.500	596.500	590.900	250.000	596.500	592.300	251.500	596.500	590.900	252.500
BT	596.500	590.100	253.200	596.500	589.200	350.000	596.500	596.500	0.000	0.000

N

X1	12505.000	9.000	238.000	263.000	100.000	100.000	100.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	50.000	0.000	276.000	0.000	596.500	596.500	0.000
GR	594.600	0.000	595.100	200.000	596.600	238.000	588.000	247.000	587.400	250.000
GR	588.000	254.000	595.400	263.000	595.900	300.000	595.200	500.000	0.000	0.000
ET	0.000	0.000	0.000	0.000	0.000	9.100	0.000	0.000	100.000	300.000

O 6.5 X 62 CONCRETE PIPE, TR 595.7, LC 594.3

X1	12705.000	9.000	246.800	253.300	80.000	80.000	80.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	50.000	0.000	368.000	0.000	0.000	0.000	0.000
GR	595.700	50.000	595.700	246.800	591.100	246.800	588.500	248.000	587.800	250.000
GR	588.500	252.000	591.100	253.300	595.700	253.300	595.700	350.000	0.000	0.000
ET	0.000	0.000	0.000	0.000	0.000	9.100	0.000	0.000	100.000	300.000
X1	12706.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	50.000	0.000	365.000	0.000	595.700	595.700	0.000
SB	0.000	1.340	2.630	0.000	6.500	0.000	33.200	0.000	587.800	587.800
X1	12707.000	0.000	0.000	0.000	62.000	62.000	62.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	594.300	595.700	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	278.000	0.000	595.700	595.700	0.000
BT	7.000	50.000	595.700	595.700	246.800	595.700	591.100	248.000	595.700	593.600
BT	250.000	595.700	594.300	252.000	595.700	593.600	253.300	595.700	591.100	350.000
BT	595.700	595.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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ET        0.000       0.000       0.000       0.000       0.000       9.100       0.000       0.000      50.000     252.000
          P    5.5 X 20 CONCRETE PIPE, TR 595.1, LC 593.7
X1   12905.000       9.000     247.300     252.800      60.000      60.000      60.000       0.000       0.000       0.000
GR     595.100      50.000     595.100     247.300     591.000     247.300     589.000     248.000     588.200     250.000
GR     589.000     252.000     591.000     252.800     595.100     252.800     595.100     350.000       0.000       0.000
1
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X1   12906.000       0.000       0.000       0.000     100.000     100.000     100.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000     278.000       0.000     595.100     595.100       0.000

SB       0.000       1.250       2.630       0.000       5.500       0.000      23.760       0.000     588.200     588.200
X1   12907.000       0.000       0.000       0.000      20.000      20.000      20.000       0.000       0.000       0.000
X2       0.000       0.000       1.000     593.700     595.100       0.000       0.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000     278.000       0.000     595.100     595.100       0.000

BT       7.000      50.000     595.100     595.100     247.300     595.100     591.000     248.000     595.100     592.900
BT     250.000     595.100     593.700     252.000     595.100     592.900     252.800     595.100     591.000     350.000
BT     595.100     595.100       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

ET       0.000       0.000       0.000       0.000       0.000       9.100       0.000       0.000     100.000     275.000
          Q    5.0 X 22.5 CONCRETE PIPE, TR 595.6, LC 593.9
X1   13055.000       9.000     247.500     252.500      50.000      50.000      50.000       0.000       0.000       0.000
GR     595.600      50.000     595.600     247.500     591.400     247.500     589.400     248.500     588.900     250.000
GR     589.400     251.500     591.400     252.500     595.600     252.500     595.600     350.000       0.000       0.000

X1   13056.000       0.000       0.000       0.000      80.000      80.000      80.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000     385.000       0.000     595.600     595.600       0.000

SB       0.000       1.270       2.630       0.000       5.000       0.000      19.630       0.000     588.200     588.200
X1   13057.000       0.000       0.000       0.000      23.000      23.000      23.000       0.000       0.000       0.000
X2       0.000       0.000       1.000     593.900     595.600       0.000       0.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000     385.000       0.000     595.600     595.600       0.000
BT       7.000      50.000     595.600     595.600     247.500     595.600     591.400     248.500     595.600     593.400
BT     250.000     595.600     593.900     251.500     595.600     593.400     252.500     595.600     591.400     350.000
BT     595.600     595.600       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

ET       0.000       0.000       0.000       0.000       0.000       9.100       0.000       0.000     100.000     300.000
          R    6 X 22.5 CONCRETE PIPE, TR 595.8, LC 594.4
X1   13205.000       9.000     247.000     253.000      40.000      40.000      40.000       0.000        .200       0.000
GR     595.800     100.000     595.800     246.900     591.400     247.000     589.200     248.000     588.400     250.000
GR     589.200     252.000     591.400     253.000     595.800     253.100     595.800     350.000       0.000       0.000

X1   13206.000       0.000       0.000       0.000      60.000      60.000      60.000       0.000        .500       0.000
X3      10.000       0.000       0.000       0.000       0.000     320.000       0.000     595.800     595.800       0.000

SB       0.000       1.370       2.630       0.000       6.000       0.000      28.270       0.000     588.900     588.900
X1   13207.000       0.000       0.000       0.000      22.500      22.500      22.500       0.000       0.000       0.000
X2       0.000       0.000       1.000     594.400     595.800       0.000       0.000       0.000       0.000       0.000
X3      10.000       0.000       0.000     247.000     595.800     253.000     595.800     595.800     595.800       0.000
BT       7.000     100.000     595.800     595.800     247.000     595.800     591.400     248.000     595.800     593.700
BT     250.000     595.800     594.400     252.000     595.800     593.700     253.000     595.800     591.400     350.000
BT     595.800     595.800       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

ET       0.000       0.000       0.000       0.000       0.000       9.100       0.000       0.000     125.000     300.000
NC       0.000       0.000        .055       0.000       0.000       0.000       0.000       0.000       0.000       0.000
          S    6 X 70 CONCRETE PIPE, TR 595.8, LC 594.9
X1   13505.000       9.000     247.000     253.000     135.000     135.000     135.000       0.000       0.000       0.000
GR     595.800      50.000     595.800     247.000     591.900     247.000     589.600     248.000     588.900     250.000
GR     589.600     252.000     591.900     253.000     595.800     253.000     595.800     350.000       0.000       0.000
1
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X1   13506.000       0.000       0.000       0.000     100.000     100.000     100.000       0.000       0.000       0.000
X3      10.000       0.000       0.000     100.000       0.000     300.000       0.000     595.200     595.200       0.000

SB       0.000       1.250       2.630       0.000       6.000       0.000      28.270       0.000     588.400     588.400
X1   13507.000       0.000       0.000       0.000      70.000      70.000      70.000       0.000       0.000       0.000
X2       0.000       0.000       1.000     594.900     595.800       0.000       0.000       0.000       0.000       0.000
X3      10.000       0.000       0.000       0.000       0.000     313.000       0.000     595.800     595.800       0.000
BT       7.000      50.000     595.800     595.800     247.000     595.800     591.900     248.000     595.800     594.200
BT     250.000     595.800     594.900     252.000     595.800     594.200     253.000     595.800     591.900     350.000
BT     595.800     595.800       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
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ET      0.000      0.000      0.000      0.000      0.000      9.100      0.000      0.000    125.000    275.000
        T     5.5 X 48 CONCRETE PIPE, TR 597.4, LC 595.3
X1  13705.000      9.000    247.300    252.800     30.000     30.000     30.000      0.000      0.000      0.000
GR    597.400     50.000    596.000    247.300    592.600    247.300    590.700    248.000    589.800    250.000
GR    590.700    252.000    592.600    252.800    596.000    252.800    597.400    350.000      0.000      0.000

X1  13706.000      9.000    247.300    252.800     50.000     50.000     50.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000    292.000      0.000    597.000    597.000      0.000
GR    597.400     50.000    597.400    247.300    592.600    247.300    590.700    248.000    589.800    250.000
GR    590.700    252.000    592.600    252.800    597.400    252.800    597.400    350.000      0.000      0.000

SB      0.000      1.330      2.630      0.000      4.500      0.000     23.700      0.000    589.800    589.800
X1  13707.000      0.000      0.000      0.000     48.000     48.000     48.000      0.000      0.000      0.000
X2      0.000      0.000      1.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000    292.000      0.000    597.400    597.400      0.000
BT      7.000     50.000    597.400    597.400    247.300    597.400    592.600    248.000    597.400    594.400
BT    250.000    597.400    595.300    252.000    597.400    594.400    252.800    597.400    592.600    350.000
BT    597.400    597.400      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

ET      0.000      0.000      0.000      0.000      0.000      9.100      0.000      0.000    150.000    300.000
NC      0.000      0.000       .050      0.000      0.000      0.000      0.000      0.000      0.000      0.000
        U     5.5 X 40 CONCRETE PIPE, TR 598.1, LC 595.7
X1  13905.000      9.000    247.300    252.800     55.000     55.000     55.000      0.000      -.300      0.000
GR    598.100     50.000    593.000    247.200    593.000    247.300    591.100    248.000    590.200    250.000
GR    591.100    252.000    593.000    252.800    598.100    252.900    598.100    350.000      0.000      0.000

X1  13906.000      0.000      0.000      0.000    100.000    100.000    100.000      0.000       .200      0.000
X3     10.000      0.000      0.000      0.000      0.000    342.000      0.000    596.500    596.500      0.000

SB      0.000      1.310      2.630      0.000      5.500      0.000     23.760      0.000    590.200    590.200
X1  13907.000      0.000      0.000      0.000     40.000     40.000     40.000      0.000      0.000      0.000
X2      0.000      0.000      1.000    595.700    598.100      0.000      0.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000    342.000      0.000    598.100    598.100      0.000
BT      7.000     50.000    598.100    598.100    247.300    598.100    593.000    248.000    598.100    594.800
BT    250.000    598.100    595.700    252.000    598.100    594.800    252.800    598.100    593.000    350.000
BT    598.100    598.100      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
1
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ET      0.000      0.000      0.000      0.000      0.000      9.100      0.000      0.000    125.000    300.000
        V
X1  14105.000      9.000    242.000    270.000    100.000    100.000    100.000      0.000      0.000      0.000
GR    596.600      0.000    596.800    200.000    597.200    242.000    591.600    250.000    590.200    254.000
GR    591.600    259.000    596.800    270.000    596.500    300.000    597.300    500.000      0.000      0.000

ET      0.000      0.000      0.000      0.000      0.000      9.100      0.000      0.000    125.000    300.000

X1  15000.000      0.000      0.000      0.000    800.000    800.000    800.000      0.000      0.000      0.000
EJ      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
*PROF 1
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


CCHV      .100 CEHV      .300
*SECNO 7025.000
3720 CRITICAL DEPTH ASSUMED
        A     7 X 22.5 CONCRETE PIPE, TR 587.3, LC 584.8,
        AA    7 X 22.5 CONCRETE PIPE, TR 587.0, LC 585.1

  7025.00     4.28    582.38    582.38    579.50    584.02      1.64      0.00      0.00    587.00
     236.       0.      236.        0.        0.       23.        0.        0.        0.     587.00
     0.00     0.00     10.28      0.00      .030      .045      .060     0.000    578.10    246.50
  .042312       0.        0.        0.         0        19         0      0.00      7.00    253.50
0
*SECNO 7027.000

3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    587.00 MAX ELLC    587.00

3470 ENCROACHMENT STATIONS          .0      320.0  TYPE       1  TARGET       319.999
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        587.30 ELREA        587.30
  7027.00      4.33    582.43    582.29      0.00    584.06      1.64       .04       .00    587.00
     236.        0.      236.        0.        0.       23.        0.        0.        0.    587.00
      .00      0.00     10.27      0.00      .030      .045      .060     0.000    578.10    246.50
  .043118        1.        1.        1.         0        12         0      -.27      7.00    253.50
0
 *SECNO 7028.000

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE      1  TARGET        7.000
  ELENCL      587.30  ELENCR      587.30
  7028.00      5.86    583.96      0.00      0.00    584.71       .75       .56       .09    587.00
     236.        0.      236.        0.        0.       34.        0.        0.        0.    587.30
      .00      0.00      6.94      0.00      .030      .045      .060     0.000    578.10    246.50
  .015451       23.       23.       23.         3         0         0      0.00      7.00    253.50
0
 *SECNO 7029.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE      1  TARGET        7.000
  ELENCL      587.30  ELENCR      587.30
  7029.00      5.89    583.99      0.00      0.00    584.73       .74       .02       .00    587.00
     236.        0.      236.        0.        0.       34.        0.        0.        0.    587.30
      .00      0.00      6.89      0.00      .030      .045      .060     0.000    578.10    246.50
  .015217        1.        1.        1.         0         0         0      0.00      7.00    253.50
0
 *SECNO 7524.000


  7524.00      6.73    584.83      0.00      0.00    585.37       .54       .62       .02    587.00
     236.        0.      236.        0.        0.       40.        0.        0.        0.    587.00
      .00      0.00      5.89      0.00      .030      .045      .060     0.000    578.10    246.50
  .010302       50.       50.       50.         2         0         0      0.00      7.00    253.50
0
 *SECNO 7525.000
 3280 CROSS SECTION    7525.00 EXTENDED       1.28 FEET

 3470 ENCROACHMENT STATIONS        237.0      270.0  TYPE      1  TARGET       33.000
  7525.00      6.98    586.08      0.00      0.00    586.13       .05       .72       .05    586.30
     236.        0.      236.        0.        0.      126.        0.        1.        0. 100000.00
      .07      0.00      1.88      0.00      .030      .045      .060     0.000    579.10    237.44
  .000586      470.      470.      470.         4         0         0      0.00     31.76    269.19
0
 *SECNO 7655.000

 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE      1  TARGET        7.000
  ELENCL      586.20  ELENCR      586.20

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        586.20 ELREA        586.20

          B     7.0 X 20 CMP, TR 586.8, LC 586.0
  7655.00      6.96    585.96      0.00      0.00    586.46       .49       .19       .13    586.80
     236.        0.      236.        0.        0.       42.        0.        1.        0.    586.80
      .08      0.00      5.65      0.00      .030      .045      .060     0.000    579.00    246.50
  .009305      130.      130.      130.         2         0         0      0.00      7.00    253.50
0
 *SECNO 7657.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    586.80 MAX ELLC    586.80
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3470 OVERBANK AREA ASSUMED NON-EFFECTIVE ELEVA        585.20 ELEVA        585.20
   7657.00      6.82    585.82      0.00      0.00    586.53       .71       .00       .06    586.80
      236.        0.      236.        0.        0.       35.        0.        1.        0.    586.80
       .08      0.00      6.76      0.00      .030      .015      .060     0.000    579.00    246.50
   .002298        1.        1.        1.         2         0         0     -5.81      7.00    253.50
0
 *SECNO 7658.000

 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE       1  TARGET        7.000
  ELENCL      586.20  ELENCR      586.20
   7658.00      7.11    586.11      0.00      0.00    586.58       .47       .03       .02    586.80
7722  236.        0.      236.        0.        0.       43.        0.        1.        0.    586.80
       .08      0.00      5.52      0.00      .030      .015      .060     0.000    579.00    246.50
   .000978       21.       21.       21.         2         0         0      0.00      7.00    253.50
0
 *SECNO 7659.000


 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE       1  TARGET        7.000
  ELENCL      586.20  ELENCR      586.20
   7659.00      7.11    586.11      0.00      0.00    586.58       .47       .00       .00    586.80
      236.        0.      236.        0.        0.       43.        0.        1.        0.    586.80
       .08      0.00      5.52      0.00      .030      .055      .060     0.000    579.00    246.50
   .013148        1.        1.        1.         0         0         0      0.00      7.00    253.50
0
 *SECNO 7765.000

 3470 ENCROACHMENT STATIONS        200.0      269.0  TYPE       1  TARGET       69.000
C
   7765.00      4.78    587.08      0.00      0.00    587.22       .14       .61       .03    590.10
      236.        0.      236.        0.        0.       78.        0.        1.        0. 100000.00
       .09      0.00      3.04      0.00      .030      .055      .060     0.000    582.30    238.88
   .003472      100.      100.      100.         2         0         0      0.00     27.53    266.41
0
1
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    SECNO     DEPTH    CWSEL    CRIWS    WSELK     EG        HV        HL      OLOSS   BANK ELEV
    Q         QLOB     QCH      QROB     ALOB      ACH       AROB      VOL     TWA    LEFT/RIGHT
    TIME      VLOB     VCH      VROB     XNL       XNCH      XNR       WTN     ELMIN      SSTA
    SLOPE     XLOBL    XLCH     XLOBR    ITRIAL    IDC       ICONT     CORAR   TOPWID     ENDST

 *SECNO 9655.000

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS        247.0      253.0  TYPE       1  TARGET        6.000
        D    SQUARE CONCRETE PIPE, TR 590., LC 586.9  8 X 4 X 60
   9655.00      4.23    587.13      0.00      0.00    588.47      1.34       .89       .36    590.00
7923  236.        0.      236.        0.        0.       25.        0.        1.        0. 100000.00
       .09      0.00      9.29      0.00      .030      .055      .060     0.000    582.90    247.00
   .055857      100.      100.      100.         3         0         0      0.00      6.00    253.00
0

 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.40      2.63    200.00      6.00      0.00     24.00      0.00    582.90    582.90

 *SECNO 9656.000

 3301 HV CHANGED MORE THAN HVINS

 PRESSURE FLOW

  EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                                  AREA
   589.23    588.47    0.00        0.       236.       24.        20.      586.30    590.00

 3470 ENCROACHMENT STATIONS        247.0      253.0  TYPE       1  TARGET        6.000
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        590.00 ELREA        590.00
  9656.00     5.55   588.45     0.00     0.00   589.23      .78      .76     0.00   590.00
     236.       0.     236.       0.       0.      33.       0.       2.       0. 100000.00
      .09     0.00     7.08     0.00     .030     .055     .060    0.000   582.90   247.00
  .028247      60.      60.      60.        3        0        0     0.00     6.00   253.00
0
*SECNO 9660.000
3470 ENCROACHMENT STATIONS      246.0     253.0  TYPE      1  TARGET        7.000
1
82/11/17.   07.50.57.                                                                PAGE   13

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        590.00 ELREA        590.00
        E    4.8 X 7.6 X 180 ELLIPTICAL CONCRETE PIPE,WASHINGTON ROAD
  9660.00     5.59   588.49     0.00     0.00   589.26      .77      .03      .00   590.00
     236.       0.     236.       0.       0.      34.       0.       2.       0. 100000.00
      .09     0.00     7.03     0.00     .030     .055     .060    0.000   582.90   247.00
  .027737       1.       1.       1.        0        0        0     0.00     6.00   253.00
0
SPECIAL BRIDGE
SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.45      2.63      0.00      7.50      0.00     29.50     0.00     582.10    582.10
*SECNO 9875.000
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3        QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  589.94     588.59     0.00       45.      192.       30.       42.      587.70    589.30

3470 ENCROACHMENT STATIONS        .0      318.0  TYPE      1  TARGET      317.999
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        589.30 ELREA        589.30
        F
  9875.00     6.02   588.92     0.00     0.00   589.45      .53      .19     0.00   589.30
     236.       0.     236.       0.       0.      40.       0.       2.       0.   589.30
      .10     0.00     5.86     0.00     .030     .055     .060    0.000   582.90   246.30
  .014666      180.     180.     180.        6        0        4     0.00     7.50   253.80
0
*SECNO 9925.000
3280 CROSS SECTION   9925.00 EXTENDED       .43 FEET

3301 HV CHANGED MORE THAN HVINS

  9925.00     6.82   589.62     0.00     0.00   589.65      .03      .15      .05   589.20
     236.      40.     179.      16.      64.     122.      51.       2.       1.   589.20
      .13      .63     1.47      .32     .030     .055     .060    0.000   582.80    50.00
  .000513     100.     100.     100.        3        0        0     0.00   300.00   350.00
0
1
82/11/17.   07.50.57.                                                                PAGE   14

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

*SECNO 10675.000
3280 CROSS SECTION  10675.00 EXTENDED       .26 FEET
        G    7 X 22.5 CONCRETE PIPE, TR 591.8, LC 590.9
 10675.00     6.06   589.96     0.00     0.00   590.00      .04      .35      .00   589.70
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      23        22.       205        9        37       117       31.        3.       587.10
     .3        .56       1.75      .28       .030      .055      .060     0.000     583.30     50.00
  .000770     570.      570.      570.        4         0         0      0.00     300.00    350.00
0
 *SECNO 10676.000

 3301 HV CHANGED MORE THAN HVINS

 3470 ENCROACHMENT STATIONS          .0      311.0  TYPE      1  TARGET      310.999

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      591.80 ELREA       591.80

  10676.00     6.36    589.76      0.00      0.00    590.40      .64       .21       .18    591.30
      236.       0.      236.       0.        0.       37.       0.        5.        5.     591.30
       .23      0.00     6.41      0.00      .030      .055     .060     0.000    583.40    246.50
  .019000      100.     100.      100.        2         0         0      0.00      7.00    253.50
0
 *SECNO 10677.000

 3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    591.80 MAX ELLC    591.80

 3470 ENCROACHMENT STATIONS          .0      311.0  TYPE      1  TARGET      310.999

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      591.80 ELREA       591.80

  10677.00     6.27    589.67      0.00      0.00    590.44      .77       .00       .04    591.30
      236.       0.      236.       0.        0.       33.       0.        5.        5.     591.30
       .23      0.00     7.06      0.00      .030      .012     .060     0.000    583.40    246.50
  .001294        1.       1.        1.        2         0         0     -2.75      7.00    253.50
0
 *SECNO 10678.000
1
 82/11/17.   07.50.57.                                                                  PAGE    15

    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS     BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA       LEFT/RIGHT

    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN     SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID    ENDST

 3370 NORMAL BRIDGE,NRD    7 MIN ELTRD    591.80 MAX ELLC    591.80

  10678.00     6.30    589.70      0.00      0.00    590.47      .77       .03       .00    591.30
      236.       0.      236.       0.        0.       34.       0.        5.        5.     591.30
       .23      0.00     7.03      0.00      .030      .012     .060     0.000    583.40    246.50
  .001280       23.      23.       23.        2         0         0     -2.85      7.00    253.50
0
 *SECNO 10679.000

 3470 ENCROACHMENT STATIONS        240.0      270.0  TYPE      1  TARGET       30.000
  10679.00     6.48    589.88      0.00      0.00    590.49      .61       .00       .02    591.30
      236.       0.      236.       0.        0.       38.       0.        5.        5.     591.30
       .23      0.00     6.26      0.00      .030      .050     .060     0.000    583.40    246.50
  .014845        1.       1.        1.        2         0         0      0.00      7.00    253.50
0
 *SECNO 10785.000

  10785.00     5.81    590.91      0.00      0.00    591.05      .14       .52       .05    591.90
      236.       0.      236.       0.        0.       78.       0.        5.        5.     592.60
       .24      0.00     3.03      0.00      .030      .050     .060     0.000    585.10    241.55
  .002587      100.     100.      100.        2         0         0      0.00     24.61    266.16
0
 *SECNO 11725.000
 3280 CROSS SECTION  11725.00 EXTENDED        .13 FEET

 3470 ENCROACHMENT STATIONS          .0      311.0  TYPE      1  TARGET      310.999
          H     7.0 X 22.5 CONCRETE PIPE, TR 593.9, LC 592.7
  11725.00     6.12    592.72      0.00      0.00    592.84      .12      1.78       .00    593.40
      236.       0.      236.       0.        0.       86.       0.        7.        6.     594.10
       .32      0.00     2.75      0.00      .030      .050     .060     0.000    586.60    241.05
  .001988      790.     790.      790.        3         0         0      0.00     25.84    266.89
0
 *SECNO 11726.000

 3470 ENCROACHMENT STATIONS        246.5      253.5  TYPE      1  TARGET        7.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        593.00 ELREA        593.00

 11726.00     7.06    592.86      0.00      0.00    593.34       .48       .39       .11    593.90
     236.       0.      236.        0.        0.       42.        0.        7.        6.  100000.00
      .33     0.00      5.57      0.00      .030      .050      .060     0.000    585.80    246.50
  .011093      100.      100.      100.         2         0         0      0.00      7.00    253.50
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      7.00      0.00      38.50     0.00     586.50    586.50

*SECNO 11728.000

6070,LOW FLOW BY NORMAL BRIDGE

EGPRS    593.623  EGLWC    593.945  ELLC    592.700  PCWSE    592.858  ELTRD    593.900

3370 NORMAL BRIDGE,NRD   7 MIN ELTRD   593.90 MAX ELLC   592.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        593.90 ELREA        593.90

 11728.00     7.53    593.33      0.00      0.00    594.03       .71       .63       .07    593.90
     236.       0.      236.        0.        0.       35.        0.        7.        6.    593.90
      .33     0.00      6.74      0.00      .030      .050      .060     0.000    585.80    246.50
  .026946       38.       38.       38.         2         0         0    -10.69      7.00    253.50
0
*SECNO 11925.000
3280 CROSS SECTION  11925.00 EXTENDED        .42 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS        50.0      300.0  TYPE      1  TARGET      250.000
         I     7.0 X 37 CONCRETE PIPE, TR 594.3, LC 593.5
 11925.00     8.22    594.72      0.00      0.00    594.78       .06       .68       .06    594.30
     236.       99.      125.       12.       82.       50.       19.        7.        6.    594.30
      .35     1.22      2.49       .61      .030      .050      .060     0.000    586.50     50.00
  .001963      140.      140.      140.         5         0         0      0.00    250.00    300.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 11926.000
3280 CROSS SECTION  11926.00 EXTENDED        .59 FEET

 11926.00     8.38    594.88      0.00      0.00    594.91       .03       .13       .00    594.30
     236.      119.       87.       29.      115.       51.       57.        8.        7.    594.30
      .37     1.03      1.70       .52      .030      .050      .060     0.000    586.50     50.00
  .000891      100.      100.      100.         3         0         0      0.00    300.00    350.00
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.31      2.63      0.00      7.00      0.00      38.50     0.00     586.50    586.50
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*SECNO 11927.000
3280 CROSS SECTION  11927.00 EXTENDED        .60 FEET
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
   595.65    594.91     0.00      182.       54.       39.       49.       593.50     594.30


3470 ENCROACHMENT STATIONS        50.0     350.0  TYPE      1  TARGET       -50.000
 11927.00     8.40   594.90     0.00     0.00   594.92      .02       .01      0.00     594.30
     236.     121.      86.      30.     118.      51.      58.        8.        7.     594.30
      .38     1.03     1.67      .51     .030     .050     .060     0.000    586.50      50.00
  .000852      38.      38.      38.        2        0        8      0.00    300.00     350.00
0
*SECNO 12125.000
3280 CROSS SECTION  12125.00 EXTENDED        .76 FEET

        J     5.0 X 18 CONCRETE PIPE, TR 594.2, LC 592.3
 12125.00     7.66   594.96     0.00     0.00   594.99      .02       .06       .00     589.80
     236.     133.      60.      44.     113.      35.      75.        8.        7.     594.20
      .40     1.17     1.71      .59     .030     .050     .060     0.000    587.30     100.00
  .000814      75.      75.      75.        0        0        0      0.00    250.00     350.00
0
1
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   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

*SECNO 12126.000
3280 CROSS SECTION  12126.00 EXTENDED        .89 FEET

3470 ENCROACHMENT STATIONS          .0     278.0  TYPE      1  TARGET       277.999
 12126.00     7.79   595.09     0.00     0.00   595.11      .03       .13       .00     589.80
     236.     164.      58.      14.     132.      35.      23.        9.        8.     594.20
      .43     1.24     1.65      .61     .030     .050     .060     0.000    587.30     100.00
  .000739     165.     165.     165.        1        0        0      0.00    178.00     278.00
0
SPECIAL BRIDGE
SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.35      2.63      0.00      5.00      0.00      19.63     0.00     587.30    587.30
*SECNO 12127.000
3280 CROSS SECTION  12127.00 EXTENDED        .90 FEET
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD


                                                                AREA
   598.12    595.11     0.00      208.       28.       20.       25.       592.30     594.20


3470 ENCROACHMENT STATIONS        40.0     278.0  TYPE      1  TARGET       238.000
 12127.00     7.80   595.10     0.00     0.00   595.13      .03       .02      0.00     589.80
     236.     164.      58.      14.     133.      36.      23.        9.        8.     594.20
      .44     1.23     1.63      .61     .030     .050     .060     0.000    587.30     100.00
  .000717      19.      19.      19.        2        0        7      0.00    178.00     278.00
0
*SECNO 12355.000
        K     4.8 X 6.3 X 50 CMP TR 596.5, LC 592.3, C & O R. R.
            STARTING CROSS SECTION OF FLOOD STUDY AREA
        M     5 X 48 CMP, TR 596.5, LC 592.3
 12355.00     7.66   595.16     0.00     0.00   595.56      .40       .32       .11     596.50
     236.       0.     236.       0.       0.      47.       0.       10.        9.     596.50
      .45     0.00     5.06     0.00     .030     .050     .060     0.000    587.50     246.80
  .009326     180.     180.     180.        2        0        0      0.00      6.40     253.20
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*SECNO 12356.000

3470 ENCROACHMENT STATIONS       170.0      320.0  TYPE       1  TARGET       150.000
 ELENCL     596.50  ELENCR     596.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       596.50 ELREA       587.50

 12356.00     8.54    596.04      0.00      0.00    596.27       .23       .69       .02    596.50
     200.       0.      200.        0.        0.       52.        0.       10.        9.    596.50
      .45      0.00      3.82      0.00      .030      .050      .060     0.000    587.50    246.80
  .005127      100.      100.      100.         2         0         0      0.00      6.40    253.20
0

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.55      2.63      0.00      6.00      0.00      24.00     0.00     587.50    587.50

*SECNO 12357.000
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3        QWEIR     QPR       BAREA     TRAPEZOID      ELLC      ELTRD
                                                                  AREA
  597.71    596.27     0.00        74.      126.       24.        29.      592.30    596.50

3470 ENCROACHMENT STATIONS          .0      278.0  TYPE       1  TARGET       277.999
 12357.00     9.00    596.50      0.00      0.00    596.71       .20       .44      0.00    596.50

     200.       0.      200.        0.        0.       55.        0.       10.        9.    596.50
      .46      0.00      3.62      0.00      .030      .050      .060     0.000    587.50    246.80
  .004522       97.       97.       97.         2         0         5      0.00      6.40    253.20
0
*SECNO 12505.000
3280 CROSS SECTION  12505.00 EXTENDED       1.53 FEET

3470 ENCROACHMENT STATIONS        50.0      276.0  TYPE       1  TARGET       226.000
        N
 12505.00     9.33    596.73      0.00      0.00    596.74       .00       .01       .02    596.60
     200.      125.       72.        3.      307.      148.       16.       10.        9.    595.40
      .52       .41       .49       .16      .030      .050      .060     0.000    587.40     50.00
  .000034      100.      100.      100.         2         0         0      0.00    226.00    276.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*SECNO 12705.000
3280 CROSS SECTION  12705.00 EXTENDED       1.04 FEET

3470 ENCROACHMENT STATIONS        50.0      368.0  TYPE       1  TARGET       318.000
        O     6.5 X 62 CONCRETE PIPE, TR 595.7, LC 594.3
 12705.00     8.94    596.74      0.00      0.00    596.74       .01       .01       .00    595.70
     200.      131.       38.       32.      204.       52.      100.       11.        9.    595.70
      .56       .64       .73       .32      .030      .050      .060     0.000    587.80     50.00
  .000159       80.       80.       80.         2         0         0      0.00    300.00    350.00
0
*SECNO 12706.000
3280 CROSS SECTION  12706.00 EXTENDED       1.05 FEET

3470 ENCROACHMENT STATIONS        50.0      365.0  TYPE       1  TARGET       315.000
 12706.00     8.95    596.75      0.00      0.00    596 76       .01       .02       .00    595.70
     200.      131.       37.       32       206.       [illegible]      101.       12.       10.    595.70
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     .81      .63      .72      .32      .030     .050     .060     0.000    587.80    50.00
  .000155    100.     100.     100.       0        0        0       0.00    300.00   350.00
0
 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.34      2.63      0.00      6.50      0.00      33.20     0.00     587.80    587.80

 *SECNO 12707.000
 3280 CROSS SECTION  12707.00 EXTENDED      1.08 FEET

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA

    597.51    596.76     0.00      163.       37.       33.       42.      594.30    595.70

 3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
  12707.00     8.97    596.77     0.00      0.00    596.78      .01       .02      0.00    595.70
      200.     150.       41.       9.      212.       52.       27.       12.       10.    595.70
       .63      .71       .78      .34      .030      .050      .060     0.000    587.80    50.00
  .000185      62.       62.      62.        0         0         7       0.00    228.00   278.00
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *SECNO 12905.000
 3280 CROSS SECTION  12905.00 EXTENDED      1.68 FEET

          P    5.5 X 20 CONCRETE PIPE, TR 595.1, LC 593.7
  12905.00     8.58    596.78     0.00      0.00    596.78      .00       .00       .00    595.10
      200.     148.       15.      36.      332.       43.      163.       13.       11.    595.10
       .67      .45       .36      .22      .030      .050      .060     0.000    588.20    50.00
  .000041      60.       60.      60.        0         0         0       0.00    300.00   350.00
0
 *SECNO 12906.000
 3280 CROSS SECTION  12906.00 EXTENDED      1.69 FEET

 3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
  12906.00     8.59    596.79     0.00      0.00    596.79      .00       .00       .00    595.10
      200.     172.       18.      11.      334.       43.       43.       14.       11.    595.10
       .73      .51       .41      .25      .030      .050      .060     0.000    588.20    50.00
  .000054     100.      100.     100.        0         0         0       0.00    228.00   278.00
0
 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.25      2.63      0.00      5.50      0.00      23.76     0.00     588.20    588.20

 *SECNO 12907.000
 3280 CROSS SECTION  12907.00 EXTENDED      1.71 FEET

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
    598.16    596.79     0.00      175.       25.       24.       30.      593.70    595.10

 3470 ENCROACHMENT STATIONS          .0      278.0  TYPE      1  TARGET      277.999
  12907.00     8.60    596.80     0.00      0.00    596.81      .00       .02      0.00    595.10
      200.     172.       17.      11.      337.       43.       43.       14.       12.    595.10
```

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      .74       .51       .40       .25       .030      .050      .060     0.000    588.20     50.00
   .000053      20.       20.       20.         0         0         7      0.00    228.00    278.00
0
1
 82/11/17.   07.50.57.                                                                                  PAGE   22

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

 *SECNO 13055.000
 3280 CROSS SECTION  13055.00 EXTENDED       1.21 FEET

          Q     5.0 X 22.5 CONCRETE PIPE, TR 595.6, LC 593.9
  13055.00     7.91    596.81      0.00      0.00    596.81       .00       .00       .00    595.60
      200.     145.       20.       36.      238.       36.      118.       15.       12.    595.60
       .77      .61       .55       .30      .030      .050      .060     0.000    588.90     50.00
   .000118      50.       50.       50.         0         0         0      0.00    300.00    350.00
0
 *SECNO 13056.000
 3280 CROSS SECTION  13056.00 EXTENDED       1.21 FEET

 3470 ENCROACHMENT STATIONS          .0      385.0  TYPE       1  TARGET       384.999
  13056.00     7.92    596.82      0.00      0.00    596.82       .00       .01       .00    595.60
      200.     145.       20.       36.      240.       36.      118.       15.       12.    595.60
       .81      .60       .55       .30      .030      .050      .060     0.000    588.90     50.00
   .000116      80.       80.       80.         0         0         0      0.00    300.00    350.00
0

 SPECIAL BRIDGE

 SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
      0.00      1.27      2.63      0.00      5.00      0.00      19.63     0.00     588.20    588.20

 *SECNO 13057.000
 3280 CROSS SECTION  13057.00 EXTENDED       1.24 FEET

 PRESSURE AND WEIR FLOW

  EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                                 AREA
   598.86    596.12     0.00      177.       23.       20.        29.      593.90    595.60

 3470 ENCROACHMENT STATIONS          .0      385.0  TYPE       1  TARGET       384.999
  13057.00     7.94    596.84      0.00      0.00    596.84       .00       .02      0.00    595.60
      200.     145.       19.       36.      245.       36.      121.       16.       13.    595.60
       .82      .59       .53       .29      .030      .050      .060     0.000    588.90     50.00
   .000108      23.       23.       23.         0         0         7      0.00    300.00    350.00
0
1
 82/11/17.   07.50.57.                                                                                  PAGE   23

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

 *SECNO 13205.000
 3280 CROSS SECTION  13205.00 EXTENDED        .84 FEET

          R     6 X 22.5 CONCRETE PIPE, TR 595.8, LC 594.4
  13205.00     8.24    596.84      0.00      0.00    596.85       .02       .01       .00    591.60
      200.      99.       68.       33.      124.       44.       82.       16.       13.    591.60
       .83      .80      1.54       .40      .030      .050      .060     0.000    588.60    100.00
   .000332      40.       40.       40.         0         0         0      0.00    250.00    350.00
0
 *SECNO 13206.000
 3280 CROSS SECTION  13206.00 EXTENDED        .28 FEET

 3470 ENCROACHMENT STATIONS          .0      320.0  TYPE       1  TARGET       319.999
  13206.00     7.[illegible]7    596.77      0.00      0.00    596.94       .17       .04       .04    592.10
```

```
      200          40        151.        7          .1         41         19         16.        13.      592.10
      .84         .97        3.72       .48       .030       .050       .060      0.000     589.10     100.00
  .002146         60.        60.        60.          2          0          0       0.00     220.00     320.00
0

 SPECIAL BRIDGE

 SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
      0.00      1.37       2.63       0.00      6.00       0.00       28.27      0.00      588.90     588.90

 #SECNO 13207.000
 6870 D.S. ENERGY OF  596.94 HIGHER THAN COMPUTED ENERGY OF  596.81
 3280 CROSS SECTION  13207.00 EXTENDED      .38 FEET

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3         QWEIR      QPR        BAREA    TRAPEZOID      ELLC       ELTRD
                                                                     AREA
  597.84     596.74     0.00       165.       35.        28.        33.       594.40     595.80


 3470 ENCROACHMENT STATIONS      247.0      253.0  TYPE      1  TARGET        6.000
  ELENCL     595.80  ELENCR     595.80
  13207.00    7.77    596.87     0.00       0.00     596.94      .07       0.00       0.00     592.10
      200.     69.     103.      23.        56.       41.       37.        16.        13.      595.80
       .84     1.24    2.63      .62       .030      .050      .060      0.000     589.10     100.00
  .002309      23.     23.       23.          2         0         7       0.00     250.00     350.00
0
1
 82/11/17.   07.50.57.                                                                          PAGE   24

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


 #SECNO 13505.000
 3280 CROSS SECTION  13505.00 EXTENDED      1.18 FEET

          S    6 X 70 CONCRETE PIPE, TR 595.8, LC 594.9
  13505.00     8.08    596.98     0.00       0.00     596.99      .00       .04        .01      595.80
      200.     141.     24.       35.        233.      43.      115.       17.        14.      595.80
       .91      .61     .55       .30       .030      .055      .060      0.000     588.90      50.00
  .000121      135.    135.      135.          2         0         0       0.00     300.00     350.00
0
 #SECNO 13506.000
 3280 CROSS SECTION  13506.00 EXTENDED      1.20 FEET


 3470 ENCROACHMENT STATIONS      100.0      300.0  TYPE      1  TARGET      200.000
  13506.00     8.10    597.00     0.00       0.00     597.01      .01       .02        .00      595.80
      200.     145.     32.       23.        176.      43.       56.       18.        15.      595.80
       .94      .82     .75       .41       .030      .055      .060      0.000     588.90     100.00
  .000219      100.    100.      100.          2         0         0       0.00     200.00     300.00
0

 SPECIAL BRIDGE

 SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
      0.00      1.25       2.63       0.00      6.00       0.00       28.27      0.00      588.40     588.40

 #SECNO 13507.000
 3280 CROSS SECTION  13507.00 EXTENDED      1.22 FEET

 PRESSURE AND WEIR FLOW

  EGPRS      EGLWC      H3         QWEIR      QPR        BAREA    TRAPEZOID      ELLC       ELTRD
                                                                     AREA
  597.97     596.51     0.00       168.       32.        28.        39.       594.90     595.80

 1.00A

 3470 ENCROACHMENT STATIONS        .0      313.0  TYPE      1  TARGET      312.999
  13507.00     8.12    597.02     0.00       0.00     597.02      .01       .02        0.00     595.80
      200.     152.     25.       23.        241.      44.       73.       18.        15.      595.80
       .98      .63     .57       .31       .030      .055      .060      0.000     588.90      50.00
   00012        70.     70.       70.          0         0         7       0.00     263.00     313.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 13705.000
        T     5.5 X 48 CONCRETE PIPE, TR 597.4, LC 595.3
 13705.00     7.20    597.00      0.00      0.00    597.04       .04       .01       .01    596.00
     200.      100.       75.       25.       70.       35.       35.       19.       15.    596.00
      .98      1.42      2.15       .71      .030      .055      .060     0.000    589.80    106.47
  .002085       30.       30.       30.         2         0         0      0.00    215.71    322.18


0
*SECNO 13706.000

3470 ENCROACHMENT STATIONS          .0      292.0  TYPE       1  TARGET       291.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        597.00 ELREA        597.00

 13706.00     7.10    596.90      0.00      0.00    597.42       .52       .23       .14    597.40
     200.       0.      200.        0.        0.       34.        0.       19.       15.    597.40
      .99      0.00      5.80      0.00      .030      .055      .060     0.000    589.80    247.30
  .018088       50.       50.       50.         2         0         0      0.00      5.50    252.80
0
SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.00      1.33      2.63      0.00      4.50      0.00      23.70     0.00     589.80    589.80

*SECNO 13707.000
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                                  AREA
  598.37    597.42     0.00       63.      137.       24.        34.      597.40    597.40


3470 ENCROACHMENT STATIONS          .0      292.0  TYPE       1  TARGET       291.999

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA        597.40 ELREA        597.40

 13707.00     7.29    597.09      0.00      0.00    597.59       .49       .17      0.00    597.40
     200.       0.      200.        0.        0.       36.        0.       19.       15.    597.40
      .99      0.00      5.63      0.00      .030      .055      .060     0.000    589.80    247.30
  .016818       48.       48.       48.         5         0         5      0.00      5.50    252.80
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 13905.000
        U     5.5 X 40 CONCRETE PIPE, TR 598.1, LC 595.7
 13905.00     7.74    597.64      0.00      0.00    597.64       .00       .00       .05    592.70
     200.      187.       13.        0.      472.       38.        0.       19.       15.    592.70
     1.03       .40       .35       .01      .030      .050      .060     0.000    589.90     56.33
  .000019       55.       55.       55.         2         0         0      0.00    196.56    252.90
0
*SECNO 13906.000

3470 ENCROACHMENT STATIONS          .0      342.0  TYPE       1  TARGET       341.999
 13906.00     7.54    597.64      0.00      0.00    597.64       .00       .00       .00    592.90
     200.      186.       14.        0.      434.       37.        0.       20.       16.    592.90
     1.09       .43       .38       .02      .030      .050      .060     0.000    590.10     63.99
```

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: BUENA VISTA TWP

3) WATERCOURSE: KOEHLER DRAIN

4) DOCUMENT TYPE: REPORT

00BREAK00

Gove Associates Inc.
ARCHITECTS / ENGINEERS / PLANNERS / SURVEYORS
ENVIRONMENTAL SCIENTISTS

2724 E MICHIGAN AVE
SUITE 200
LANSING, MICHIGAN 48912
(517) 485-0555

April 22, 1982

Mr. Daniel H. Morgan, P.E.
Flood Insurance Unit
Flood Plain Management Section
Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, MI 48909

RECEIVED
MAY 7 1982
WATER MANAGEMENT

Re: Buena Vista Township Flood Insurance Study

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the Koehler Drain through Buena Vista Township, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood
2. Summary tables for 10-, 50-, 100- and 500-year floods
3. IPLOT for 100-year flow
4. Topographic map
5. Hydraulic Analysis Report

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES INC.

Garth Greenan
Project Engineer

Convergence
385-0011

GG/jr

Enclosure: as listed above

HYDRAULIC ANALYSIS

1. INTRODUCTION

The stream being studied is the Koehler Drain in Buena Vista Township, Michigan. Koehler Drain is a tributary of the Saginaw River. All the flows used in this study have been approved by the Michigan Department of Natural Resources and shown in Table 1.

TABLE 1

APPROVED DISCHARGES

Station	Peak Flows (cfs) 10 year	50 year	100 year	500 year
7025	620	825	890	1170
7655	440	580	680	940

The project managers for the Flood Insurance Studies are William McDonough and Duane Ellis.

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100-, and 500-year were computed through the HEC-2 computer program, developed by the U.S. Army Corps of Engineers (Reference 1).

2.1 Cross Sections

Valley and cross sections used in this study were surveyed in October, November, and December of 1979. Table 2 shows the locations of cross sections used in this report. Whether to use the Special Bridge Routine or the Normal Bridge Routine for the bridge coding depends on the bridge opening and the water surface elevation (Reference 1).

2.2 Roughness Coefficients

The roughness coefficients were determined from field description, which was made in August of 1979. The material and photographs shown in page 101 to page 123 in Chow's Open Channel Hydraulics (Reference 2) served as the guidance. The roughness coefficients used in the model are shown in Table 7.

2.3 Starting Point and Starting Elevation

For Koehler Drain the calculations start at the Chesapeake and Ohio Railroad culvert, approximately 12,800 feet upstream from the mouth. The area from the mouth to the C&O Railroad culvert is within the Saginaw River floodway. The starting elevations can be started from critical depth and easily converge within the backwater region of the Saginaw River.

3. DISCUSSION

In Koehler Drain the backwater will not be confined in the channel due to the flat floodplains. The flood plain is determined from shallow flooding.

The C&O Railroad culvert at the starting cross section acts as a constriction on Koehler Drain and the water surface elevation passes through critical depth at this cross section.

REFERENCES

1. HEC-2 Water Surface Profiles, Users Manual, Hydrologic Engineering Center, U.S. Army, Corps of Engineers, August 1979.
2. Open Channel Hydraulics, V.T. Chow, McGraw-Hill, 1959.

Wadsworth & Norman

TABLE 2

LOCATIONS OF CROSS SECTIONS (KOEHLER DRAIN)

SECTION	SECNO	LOCATION
A	7025 7026 7027 7524	Conc. culvert V - 1033 ft. D/S of Washington Road culvert. 7x22.5 length=23'
B	7525	520' U/S of U/S face Sec. A.
C	7655 7656 7657 7765	7.0x20.0' C.M.P. culvert, length=21'
D	9655 9656	Square conc. pipe 8'x4', length=60'
E	9660 9875 9925	Washington Rd. culvert 4.8'x7.6' elliptical conc. pipe, length=180'.
F	10675	670' U/S from U/S face Washington Rd. culvert.
G	10676 10677 10785	Conc. culvert 7'x22.5', length=22.5'
H	11725 11727	Conc. culvert 7.0'x22.5', length=23'
I	11925 11926 11927 12125	Conc. culvert 7.0'x37', length=38'
J	12126 12127	Conc. culvert 5.0'x18', length=19'
K.	12355	180' U/S from U/S face Sec. J
L	18356 12357 12358	C&O R.R. C.M.P. culvert 4.8'x6.3', length=50'

M	12405 12406 12407	C.M.P. culvert 5' dia., length=47'
N	12505	100' U/S from U/S face Sec. M
O	12705 12706 12707 12905	Conc. pipe 6.5' dia., length=62'
P	12906 12907 13055	Conc. pipe 5.5' dia., length=20'
Q	13056 13057 13205	Conc. pipe 5.0' dia., length=23'
R	13206 13207	Conc. pipe 6.0' dia., length=22.5'
S	13505 13506	Conc. pipe 6.0' dia., length=70'
T	13705 13706	Conc. pipe 5.5' dia., length=48'
U	13905 13906 13907 14105	Conc. pipe 5.5' dia., length=40'
V	15000	900' U/S from U/S face Sec. U

LOCATION OF CROSS SECTIONS (KOEHLER DRAIN)

SECTION	SECNO	LOCATION
A	7025 7027 7028 7029 7524	Conc. Culvert - 1033 Ft. D/S of Washington Rd. Culvert. 7x22.5 = Length 23'
B	7525	520' U/S of U/S Face Sec. A
C	7655 7657 7658 7659 7765	7.0 x 20.0' C.M.P. Culvert, Length = 21'
D	9655 9656	Square Conc. Pipe 8' x 4' Length = 60'
E	9660 9875 9925	Washington Rd. Culvert 4.8' x 7.6' Elleptical conc. Pipe, length = 180'
F	10675	670' U/S from U/S face washington Rd Culvert
G	10676 10677 10785	Conc. Culvert 7' x 22.5' Length = 22.5'
H	11725 11727 11728 11729	Conc Culvert 7.0 x 22.5, Length = 23'
I	11925 11926 11927 12125	Conc. Culvert 7.0 x 37' Length = 38'
J	12126 12127	Conc. Culvert 5.0 x 18' lenght = 19'
K	12355	180' U/S from U/S face sec. J
L	12356 12357 12407	C & O R.R C.M.P Culvert 4.8' x 6.3' Length = 97'
M	12505	100' U/S From U/S Face Sec. L

SECTION	SECNO	LOCATION
N	12705 12706 12707 12905	Conc. Pipe 6.5' DIA. Length = 62'
O	12906 12907 13055	Conc. Pipe 5.5' DIA. Length = 20'
P	13056 13057 13205	Conc. Pipe 50' DIA. Length = 23'
Q	13206 13207	Conc. Pipe 6.0' DIA. Length = 22.5
R	13505 13506 13507	Conc Pipe 6.0' DIA. Length 70'
S	13705 13706 13707 13708 13709	Conc. Pipe 5.5' DIA. Length = 48'
T	13905 13906 13907 14105	Conc. Pipe 5.5' DIA. length. = 40'
U	15000	900' U/S From U/S Face Sec. T

1) COUNTY: SAGINAW

2) STUDY NAME: BUENA VISTA TWP

3) WATERCOURSE: KOEHLER DRAIN

4) DOCUMENT TYPE: SUMMARY

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 .000070     100      100.     100.        0        0        0     0.00   175.00   300.00
0
*SECNO 15000.000
3280 CROSS SECTION  15000.00 EXTENDED      1.04 FEET

3470 ENCROACHMENT STATIONS      125.0     300.0  TYPE      1  TARGET      175.000

 15000.00     8.14   598.34     0.00   598.31   598.35      .01      .05      .00   597.20
     200.      91.      95.      14.     175.     144.      51.      27.      17.    596.80
     1.50      .52      .66      .27     .030     .050     .060    0.000   590.20   125.00
  .000065     800.     800.     800.        2        0        0     0.00   175.00   300.00
0
1
 82/11/17.   07.50.57.                                                                  PAGE   48


                                                                  THIS RUN EXECUTED  82/11/17.   07.51.00.
*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*****************************************************

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

KOEHLER DRAIN
SUMMARY PRINTOUT TABLE  110
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	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	7025.000	582.38	2.88	584.02	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
*	7025.000	582.38	2.88	584.02	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
	7027.000	582.43	0.00	584.06	7.00	0.00	236.00	0.00	320.00	.00	246.50	253.50	320.00
	7027.000	582.43	0.00	584.06	7.00	0.00	236.00	0.00	320.00	.00	246.50	253.50	320.00
	7028.000	583.96	0.00	584.71	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7028.000	583.96	0.00	584.71	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7029.000	583.99	0.00	584.73	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7029.000	583.99	0.00	584.73	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7524.000	584.83	0.00	585.37	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
	7524.000	584.83	0.00	585.37	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
	7525.000	586.08	0.00	586.13	31.76	0.00	236.00	0.00	33.00	237.00	237.00	270.00	270.00
	7525.000	586.08	0.00	586.13	31.76	0.00	236.00	0.00	33.00	237.00	237.00	270.00	270.00
	7655.000	585.96	0.00	586.46	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7655.000	585.96	0.00	586.46	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7657.000	585.82	0.00	586.53	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
	7657.000	585.82	0.00	586.53	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
	7658.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7658.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7659.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7659.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
	7765.000	587.08	0.00	587.22	27.53	0.00	236.00	0.00	69.00	200.00	200.00	269.00	269.00
	7765.000	587.08	0.00	587.22	27.53	0.00	236.00	0.00	69.00	200.00	200.00	269.00	269.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
9655.000	587.13	0.00	588.47	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00
9655.000	587.13	0.00	588.47	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.45	0.00	589.23	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.45	0.00	589.23	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00

9660.000	588.49	0.00	589.26	6.00	0.00	236.00	0.00	7.00	246.00	247.00	253.00	253.00
9875.000	588.92	0.00	589.45	7.50	0.00	236.00	0.00	318.00	.00	246.30	253.80	318.00
9875.000	588.92	0.00	589.45	7.50	0.00	236.00	0.00	318.00	.00	246.30	253.80	318.00
9925.000	589.62	0.00	589.65	300.00	40.41	179.43	16.16	0.00	0.00	200.00	230.00	0.00
9925.000	589.64	.02	589.67	175.00	23.76	201.15	11.09	175.00	125.00	200.00	230.00	300.00
10675.000	589.96	0.00	590.00	300.00	22.01	205.18	8.80	0.00	0.00	200.00	230.00	0.00
10675.000	590.03	.07	590.08	175.00	16.30	212.10	7.60	175.00	125.00	200.00	230.00	300.00
10676.000	589.76	0.00	590.40	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10676.000	589.84	.08	590.46	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.67	0.00	590.44	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.75	.08	590.51	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10678.000	589.70	0.00	590.47	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
10678.000	589.78	.08	590.53	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
10679.000	589.88	0.00	590.49	7.00	0.00	236.00	0.00	30.00	240.00	246.50	253.50	270.00
10679.000	589.96	.08	590.55	7.00	0.00	236.00	0.00	30.00	240.00	246.50	253.50	270.00
10785.000	590.91	0.00	591.05	24.61	0.00	236.00	0.00	0.00	0.00	240.00	270.00	0.00
10785.000	590.96	.05	591.09	24.79	0.00	236.00	0.00	0.00	0.00	240.00	270.00	0.00
11725.000	592.72	0.00	592.84	25.84	0.00	236.00	0.00	311.00	.00	240.00	270.00	311.00
11725.000	592.73	.01	592.85	25.84	0.00	236.00	0.00	311.00	.00	240.00	270.00	311.00
11726.000	592.86	0.00	593.34	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
11726.000	592.87	.01	593.35	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
11728.000	593.33	0.00	594.03	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
11728.000	593.33	.01	594.04	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
11925.000	594.72	0.00	594.78	250.00	99.48	124.80	11.72	250.00	50.00	246.50	253.50	300.00
11925.000	594.72	.00	594.78	250.00	100.00	124.22	11.78	250.00	50.00	246.50	253.50	300.00
11926.000	594.88	0.00	594.91	300.00	119.29	87.48	29.23	0.00	0.00	246.50	253.50	0.00
11926.000	594.88	.00	594.91	300.00	119.42	87.32	29.26	0.00	0.00	246.50	253.50	0.00
11927.000	594.90	0.00	594.92	300.00	120.66	85.78	29.57	-50.00	50.00	246.50	253.50	350.01
11927.000	594.90	.00	594.92	300.00	120.80	85.60	29.60	-50.00	50.00	246.50	253.50	350.01

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
12125.000	594.96	0.00	594.99	250.00	132.67	59.55	43.78	0.00	0.00	247.50	252.50	0.00
12125.000	594.96	.00	594.99	250.00	132.73	59.47	43.80	0.00	0.00	247.50	252.50	0.00
12126.000	595.09	0.00	595.11	178.00	163.62	58.49	13.88	278.00	.00	247.50	252.50	278.00
12126.000	595.09	.00	595.12	178.00	163.66	58.46	13.88	278.00	.00	247.50	252.50	278.00
12127.000	595.10	0.00	595.13	178.00	164.32	57.74	13.94	238.00	40.00	247.50	252.50	278.00
12127.000	595.10	.00	595.13	178.00	164.36	57.70	13.94	238.00	40.00	247.50	252.50	278.00
12355.000	595.16	0.00	595.56	6.40	0.00	236.00	0.00	0.00	0.00	246.80	253.20	0.00
12355.000	595.16	.00	595.56	6.40	0.00	236.00	0.00	0.00	0.00	246.80	253.20	0.00
12356.000	596.04	0.00	596.27	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12356.000	596.04	.00	596.27	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12357.000	596.50	0.00	596.71	6.40	0.00	200.00	0.00	278.00	.00	246.80	253.20	278.00
12357.000	596.50	.00	596.71	6.40	0.00	200.00	0.00	278.00	.00	246.80	253.20	278.00
12505.000	596.73	0.00	596.74	226.00	125.04	72.42	2.55	226.00	50.00	238.00	263.00	276.00
12505.000	596.73	.00	596.74	226.00	125.04	72.42	2.55	226.00	50.00	238.00	263.00	276.00
12705.000	596.74	0.00	596.74	300.00	130.51	37.54	31.95	318.00	50.00	246.80	253.30	368.00
12705.000	596.74	.00	596.74	300.00	130.51	37.54	31.95	318.00	50.00	246.80	253.30	368.00
12706.000	596.75	0.00	596.76	300.00	130.84	37.14	32.03	315.00	50.00	246.80	253.30	365.00
12706.000	596.75	.00	596.76	300.00	130.84	37.13	32.03	315.00	50.00	246.80	253.30	365.00

12707.000	596.77	0.00	596.78	228.00	150.04	40.78	9.18	278.00	.00	246.80	253.30	278.00
12707.000	596.77	.00	596.78	228.00	150.04	40.78	9.18	278.00	.00	246.80	253.30	278.00
12905.000	596.78	0.00	596.78	300.00	148.36	15.30	36.34	0.00	0.00	247.30	252.80	0.00
12905.000	596.78	-.00	596.79	202.80	182.36	17.64	0.00	202.80	50.00	247.30	252.80	252.80
12906.000	596.79	0.00	596.79	228.00	171.86	17.57	10.57	278.00	.00	247.30	252.80	278.00
12906.000	596.79	.00	596.79	228.00	171.87	17.56	10.57	278.00	.00	247.30	252.80	278.00
12907.000	596.80	0.00	596.81	228.00	172.03	17.39	10.58	278.00	.00	247.30	252.80	278.00
12907.000	596.81	.00	596.81	228.00	172.06	17.37	10.58	278.00	.00	247.30	252.80	278.00
13055.000	596.81	0.00	596.81	300.00	144.71	19.72	35.57	0.00	0.00	247.50	252.50	0.00
13055.000	596.81	-.00	596.82	175.00	159.19	29.02	11.79	175.00	100.00	247.50	252.50	275.00
13056.000	596.82	0.00	596.82	300.00	144.83	19.57	35.60	385.00	.00	247.50	252.50	385.00
13056.000	596.83	.01	596.83	300.00	144.89	19.49	35.62	385.00	.00	247.50	252.50	385.00
13057.000	596.84	0.00	596.84	300.00	145.28	19.01	35.71	385.00	.00	247.50	252.50	385.00
13057.000	596.85	-.01	596.85	300.00	145.43	18.83	35.74	385.00	.00	247.50	252.50	385.00
13205.000	596.84	0.00	596.85	250.00	99.28	68.03	32.69	0.00	0.00	247.00	253.00	0.00
13205.000	596.84	.01	596.87	200.00	109.14	73.56	17.30	200.00	100.00	247.00	253.00	300.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
13206.000	596.77	0.00	596.94	220.00	39.58	151.39	9.02	320.00	.00	247.00	253.00	320.00
13206.000	596.80	.02	596.95	220.00	43.57	146.50	9.93	320.00	.00	247.00	253.00	320.00
13207.000	596.87	0.00	596.94	250.00	68.89	108.40	22.70	6.00	247.00	247.00	253.00	253.00
13207.000	596.88	.01	596.95	250.00	70.30	106.53	23.17	6.00	247.00	247.00	253.00	253.00
13505.000	596.98	0.00	596.99	300.00	141.32	24.03	34.65	0.00	0.00	247.00	253.00	0.00
13505.000	597.02	.04	597.03	175.00	137.56	36.22	26.22	175.00	125.00	247.00	253.00	300.00
13506.000	597.00	0.00	597.01	200.00	144.66	32.47	22.86	200.00	100.00	247.00	253.00	300.00
13506.000	597.05	.05	597.06	200.00	146.00	30.93	23.07	200.00	100.00	247.00	253.00	300.00
13507.000	597.02	0.00	597.02	263.00	152.28	24.75	22.97	313.00	.00	247.00	253.00	313.00
13507.000	597.07	.05	597.07	263.00	153.32	23.56	23.12	313.00	.00	247.00	253.00	313.00
13705.000	597.00	0.00	597.04	215.71	100.20	75.12	24.68	0.00	0.00	247.30	252.80	0.00
13705.000	597.05	.05	597.09	150.00	112.29	69.28	18.43	150.00	125.00	247.30	252.80	275.00
13706.000	596.90	0.00	597.42	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13706.000	596.92	.02	597.44	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.09	0.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.10	.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13905.000	597.64	0.00	597.64	196.56	186.58	13.41	.00	0.00	0.00	247.30	252.80	0.00
13905.000	597.64	.00	597.64	102.90	186.26	13.73	.00	150.00	150.00	247.30	252.80	300.00
13906.000	597.64	0.00	597.64	188.90	185.80	14.19	.00	342.00	.00	247.30	252.80	342.00
13906.000	597.64	.00	597.64	189.04	185.82	14.18	.00	342.00	.00	247.30	252.80	342.00
13907.000	598.29	0.00	598.29	292.00	187.56	11.50	.95	342.00	.00	247.30	252.80	342.00
13907.000	598.29	.00	598.29	292.00	187.56	11.49	.95	342.00	.00	247.30	252.80	342.00
14105.000	598.29	0.00	598.29	500.00	105.70	50.14	44.16	0.00	0.00	242.00	270.00	0.00
14105.000	598.29	-.00	598.29	175.00	88.89	97.45	13.66	175.00	125.00	242.00	270.00	300.00
15000.000	598.31	0.00	598.31	500.00	105.92	49.79	44.29	0.00	0.00	242.00	270.00	0.00
15000.000	598.34	.04	598.35	175.00	90.74	95.42	13.84	175.00	125.00	242.00	270.00	300.00

KOEHLER DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K

7025.000	0.00	0.00	0.00	578.10	236.00	582.38	582.38	584.02	423.12	10.28	22.96	11.47
7027.000	1.00	587.00	587.00	578.10	236.00	582.43	582.29	584.06	431.18	10.27	22.98	11.37
7027.000	1.00	587.00	587.00	578.10	236.00	582.43	582.29	584.06	431.18	10.27	22.98	11.37
7028.000	23.00	0.00	0.00	578.10	236.00	583.96	0.00	584.71	154.51	6.94	34.03	18.99
7028.000	23.00	0.00	0.00	578.10	236.00	583.96	0.00	584.71	154.51	6.94	34.03	18.99
7029.000	1.00	0.00	0.00	578.10	236.00	583.99	0.00	584.73	152.17	6.89	34.24	19.13
7029.000	1.00	0.00	0.00	578.10	236.00	583.99	0.00	584.73	152.17	6.89	34.24	19.13
7524.000	50.00	0.00	0.00	578.10	236.00	584.83	0.00	585.37	103.02	5.89	40.09	23.25
7524.000	50.00	0.00	0.00	578.10	236.00	584.83	0.00	585.37	103.02	5.89	40.09	23.25
7525.000	470.00	0.00	0.00	579.10	236.00	586.08	0.00	586.13	5.86	1.88	125.72	97.46
7525.000	470.00	0.00	0.00	579.10	236.00	586.08	0.00	586.13	5.86	1.88	125.72	97.46
7655.000	130.00	0.00	0.00	579.00	236.00	585.96	0.00	586.46	93.05	5.65	41.80	24.47
7655.000	130.00	0.00	0.00	579.00	236.00	585.96	0.00	586.46	93.05	5.65	41.80	24.47
7657.000	1.00	586.80	586.80	579.00	236.00	585.82	0.00	586.53	22.98	6.76	34.92	49.23
7657.000	1.00	586.80	586.80	579.00	236.00	585.82	0.00	586.53	22.98	6.76	34.92	49.23
7658.000	21.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	9.78	5.52	42.76	75.45
7658.000	21.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	9.78	5.52	42.76	75.45
7659.000	1.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	131.48	5.52	42.77	20.58
7659.000	1.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	131.48	5.52	42.77	20.58
7765.000	100.00	0.00	0.00	582.30	236.00	587.08	0.00	587.22	34.72	3.04	77.62	40.05
7765.000	100.00	0.00	0.00	582.30	236.00	587.08	0.00	587.22	34.72	3.04	77.62	40.05
9655.000	100.00	0.00	0.00	582.90	236.00	587.13	0.00	588.47	558.57	9.29	25.40	9.99
9655.000	100.00	0.00	0.00	582.90	236.00	587.13	0.00	588.47	558.57	9.29	25.40	9.99
9656.000	60.00	590.00	586.30	582.90	236.00	588.45	0.00	589.23	282.47	7.08	33.32	14.04
9656.000	60.00	590.00	586.30	582.90	236.00	588.45	0.00	589.23	282.47	7.08	33.32	14.04
9660.000	1.00	0.00	0.00	582.90	236.00	588.49	0.00	589.26	277.37	7.03	33.57	14.17
9660.000	1.00	0.00	0.00	582.90	236.00	588.49	0.00	589.26	277.37	7.03	33.57	14.17
9875.000	180.00	589.30	587.70	582.90	236.00	588.92	0.00	589.45	146.66	5.86	40.26	19.49
9875.000	180.00	589.30	587.70	582.90	236.00	588.92	0.00	589.45	146.66	5.86	40.26	19.49
9925.000	100.00	0.00	0.00	582.80	236.00	589.62	0.00	589.65	5.13	1.47	236.99	104.16
9925.000	100.00	0.00	0.00	582.80	236.00	589.64	0.00	589.67	6.38	1.64	186.36	93.47

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
10675.000	570.00	0.00	0.00	583.30	236.00	589.96	0.00	590.00	7.70	1.75	187.84	85.07
10675.000	570.00	0.00	0.00	583.30	236.00	590.03	0.00	590.08	7.76	1.78	167.23	84.73
10676.000	100.00	0.00	0.00	583.40	236.00	589.76	0.00	590.40	190.00	6.41	36.82	17.12
10676.000	100.00	0.00	0.00	583.40	236.00	589.84	0.00	590.46	182.71	6.31	37.41	17.46
10677.000	1.00	591.80	591.80	583.40	236.00	589.67	0.00	590.44	12.94	7.06	33.41	65.61
10677.000	1.00	591.80	591.80	583.40	236.00	589.75	0.00	590.51	12.65	6.99	33.78	66.34
10678.000	22.50	591.80	591.80	583.40	236.00	589.70	0.00	590.47	12.80	7.03	33.59	65.96
10678.000	22.50	591.80	591.80	583.40	236.00	589.78	0.00	590.53	12.53	6.95	33.95	66.67
10679.000	1.00	0.00	0.00	583.40	236.00	589.88	0.00	590.49	148.45	6.26	37.67	19.37
10679.000	1.00	0.00	0.00	583.40	236.00	589.96	0.00	590.55	142.97	6.17	38.25	19.74
10785.000	100.00	0.00	0.00	585.10	236.00	590.91	0.00	591.05	25.87	3.03	77.89	46.40
10785.000	100.00	0.00	0.00	585.10	236.00	590.96	0.00	591.09	24.85	2.98	79.06	47.34
11725.000	790.00	0.00	0.00	586.60	236.00	592.72	0.00	592.84	19.88	2.75	85.96	52.93
11725.000	790.00	0.00	0.00	586.60	236.00	592.73	0.00	592.85	19.88	2.75	85.97	52.93
11726.000	100.00	0.00	0.00	585.80	236.00	592.86	0.00	593.34	110.93	5.57	42.40	22.41
11726.000	100.00	0.00	0.00	585.80	236.00	592.87	0.00	593.35	110.48	5.56	42.48	22.45
11728.000	38.00	593.90	592.70	585.80	236.00	593.33	0.00	594.03	269.46	6.74	35.00	14.38
11728.000	38.00	593.90	592.70	585.80	236.00	593.33	0.00	594.04	269.46	6.74	35.00	14.38
11925.000	140.00	0.00	0.00	586.50	236.00	594.72	0.00	594.78	19.63	2.49	151.04	53.27

11925.000	140.00	0.00	0.00	586.50	236.00	594.72	0.00	594.78	19.42	2.48	151.69	53.55
11926.000	100.00	0.00	0.00	586.50	236.00	594.88	0.00	594.91	8.91	1.70	223.32	79.06
11926.000	100.00	0.00	0.00	586.50	236.00	594.88	0.00	594.91	8.87	1.70	223.65	79.23
11927.000	38.00	594.30	593.50	586.50	236.00	594.90	0.00	594.92	8.52	1.67	226.93	80.85
11927.000	38.00	594.30	593.50	586.50	236.00	594.90	0.00	594.92	8.48	1.66	227.30	81.04
12125.000	75.00	0.00	0.00	587.30	236.00	594.96	0.00	594.99	8.14	1.71	222.27	82.72
12125.000	75.00	0.00	0.00	587.30	236.00	594.96	0.00	594.99	8.11	1.71	222.51	82.85
12126.000	165.00	0.00	0.00	587.30	236.00	595.09	0.00	595.11	7.39	1.65	190.09	86.82
12126.000	165.00	0.00	0.00	587.30	236.00	595.09	0.00	595.12	7.38	1.65	190.19	86.89
12127.000	19.00	594.20	592.30	587.30	236.00	595.10	0.00	595.13	7.17	1.63	191.98	88.16
12127.000	19.00	594.20	592.30	587.30	236.00	595.10	0.00	595.13	7.15	1.62	192.09	88.25
12355.000	180.00	0.00	0.00	587.50	236.00	595.15	0.00	595.56	93.26	5.06	46.65	24.44
12355.000	180.00	0.00	0.00	587.50	236.00	595.16	0.00	595.56	93.25	5.06	46.66	24.44
12356.000	100.00	0.00	0.00	587.50	200.00	596.04	0.00	596.27	51.27	3.82	52.29	27.93
12356.000	100.00	0.00	0.00	587.50	200.00	596.04	0.00	596.27	51.27	3.82	52.29	27.93

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
12357.000	97.00	596.50	592.30	587.50	200.00	596.50	0.00	596.71	45.22	3.62	55.19	29.74
12357.000	97.00	596.50	592.30	587.50	200.00	596.50	0.00	596.71	45.22	3.62	55.19	29.74
12505.000	100.00	0.00	0.00	587.40	200.00	596.73	0.00	596.74	.34	.49	471.61	344.75
12505.000	100.00	0.00	0.00	587.40	200.00	596.73	0.00	596.74	.34	.49	471.61	344.75
12705.000	80.00	0.00	0.00	587.80	200.00	596.74	0.00	596.74	1.59	.73	356.34	158.40
12705.000	80.00	0.00	0.00	587.80	200.00	596.74	0.00	596.74	1.59	.73	356.34	158.40
12706.000	100.00	0.00	0.00	587.80	200.00	596.75	0.00	596.76	1.55	.72	359.20	160.43
12706.000	100.00	0.00	0.00	587.80	200.00	596.75	0.00	596.76	1.55	.72	359.21	160.43
12707.000	62.00	595.70	594.30	587.80	200.00	596.77	0.00	596.78	1.85	.78	291.09	147.09
12707.000	62.00	595.70	594.30	587.80	200.00	596.77	0.00	596.78	1.85	.78	291.09	147.09
12905.000	60.00	0.00	0.00	588.20	200.00	596.78	0.00	596.78	.41	.36	538.23	311.61
12905.000	60.00	0.00	0.00	588.20	200.00	596.78	0.00	596.79	.62	.41	374.74	253.53
12906.000	100.00	0.00	0.00	588.20	200.00	596.79	0.00	596.79	.54	.41	419.73	272.05
12906.000	100.00	0.00	0.00	588.20	200.00	596.79	0.00	596.79	.54	.41	419.82	272.15
12907.000	20.00	595.10	593.70	588.20	200.00	596.80	0.00	596.81	.53	.40	423.05	275.68
12907.000	20.00	595.10	593.70	588.20	200.00	596.81	0.00	596.81	.52	.40	423.52	276.18
13055.000	50.00	0.00	0.00	588.90	200.00	596.81	0.00	596.81	1.18	.55	391.80	184.21
13055.000	50.00	0.00	0.00	588.90	200.00	596.81	0.00	596.82	2.55	.81	241.30	125.24
13056.000	80.00	0.00	0.00	588.90	200.00	596.82	0.00	596.82	1.16	.55	393.95	185.88
13056.000	80.00	0.00	0.00	588.90	200.00	596.83	0.00	596.83	1.15	.54	395.16	186.83
13057.000	23.00	595.60	593.90	588.90	200.00	596.84	0.00	596.84	1.08	.53	402.59	192.67
13057.000	23.00	595.60	593.90	588.90	200.00	596.85	0.00	596.85	1.05	.52	405.47	194.95
13205.000	40.00	0.00	0.00	588.60	200.00	596.84	0.00	596.85	3.32	1.54	250.10	109.83
13205.000	40.00	0.00	0.00	588.60	200.00	596.84	0.00	596.87	3.86	1.67	209.89	101.80
13206.000	60.00	0.00	0.00	589.10	200.00	596.77	0.00	596.94	21.46	3.72	100.27	43.18
13206.000	60.00	0.00	0.00	589.10	200.00	596.80	0.00	596.95	19.86	3.59	105.39	44.87
13207.000	22.50	595.80	594.40	589.10	200.00	596.87	0.00	596.94	23.09	2.63	133.51	41.62
13207.000	22.50	595.80	594.40	589.10	200.00	596.88	0.00	596.95	22.20	2.58	135.79	42.45
13505.000	135.00	0.00	0.00	588.90	200.00	596.98	0.00	596.99	1.21	.55	391.04	181.87
13505.000	135.00	0.00	0.00	588.90	200.00	597.02	0.00	597.03	2.70	.83	249.95	121.72
13506.000	100.00	0.00	0.00	588.90	200.00	597.00	0.00	597.01	2.19	.75	275.63	135.04
13506.000	100.00	0.00	0.00	588.90	200.00	597.05	0.00	597.06	1.94	.71	285.84	143.43

13507.000	70.00	595.80	594.90	588.90	200.00	597.02	0.00	597.02	1.26	.57	357.60	178.19
13507.000	70.00	595.80	594.90	588.90	200.00	597.07	0.00	597.07	1.12	.54	370.92	189.35

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
13705.000	30.00	0.00	0.00	589.80	200.00	597.00	0.00	597.04	20.85	2.15	140.05	43.80
13705.000	30.00	0.00	0.00	589.80	200.00	597.05	0.00	597.09	17.26	1.96	130.47	48.13
13706.000	50.00	0.00	0.00	589.80	200.00	596.90	0.00	597.42	180.88	5.80	34.45	14.87
13706.000	50.00	0.00	0.00	589.80	200.00	596.92	0.00	597.44	179.47	5.79	34.57	14.93
13707.000	48.00	597.40	597.40	589.80	200.00	597.09	0.00	597.59	168.18	5.63	35.54	15.42
13707.000	48.00	597.40	597.40	589.80	200.00	597.10	0.00	597.59	167.91	5.62	35.56	15.43
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.19	.35	509.78	457.46
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.20	.36	396.50	446.95
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.24	.38	471.60	411.88
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.23	.38	472.27	412.67
13907.000	40.00	598.10	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	627.30	593.57
13907.000	40.00	598.10	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	627.46	593.77
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.19	.35	842.22	464.14
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.70	.68	360.74	238.87
15000.000	800.00	0.00	0.00	590.20	200.00	598.31	0.00	598.31	.18	.35	848.32	469.30
15000.000	800.00	0.00	0.00	590.20	200.00	598.34	0.00	598.35	.65	.66	369.87	243.13

KOEHLER DRAIN

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	7025.000	236.00	582.38	0.00	0.00	2.88	7.00	0.00
*	7025.000	236.00	582.38	0.00	0.00	2.88	7.00	0.00
	7027.000	236.00	582.43	0.00	.05	0.00	7.00	1.00
	7027.000	236.00	582.43	0.00	.05	0.00	7.00	1.00
	7028.000	236.00	583.96	0.00	1.54	0.00	7.00	23.00
	7028.000	236.00	583.96	0.00	1.54	0.00	7.00	23.00
	7029.000	236.00	583.99	0.00	.03	0.00	7.00	1.00
	7029.000	236.00	583.99	0.00	.03	0.00	7.00	1.00
	7524.000	236.00	584.83	0.00	.84	0.00	7.00	50.00
	7524.000	236.00	584.83	0.00	.84	0.00	7.00	50.00
	7525.000	236.00	586.08	0.00	1.25	0.00	31.76	470.00
	7525.000	236.00	586.08	0.00	1.25	0.00	31.76	470.00
	7655.000	236.00	585.96	0.00	-.11	0.00	7.00	130.00
	7655.000	236.00	585.96	0.00	-.11	0.00	7.00	130.00
	7657.000	236.00	585.82	0.00	-.15	0.00	7.00	1.00
	7657.000	236.00	585.82	0.00	-.15	0.00	7.00	1.00
	7658.000	236.00	586.11	0.00	.29	0.00	7.00	21.00
	7658.000	236.00	586.11	0.00	.29	0.00	7.00	21.00
	7659.000	236.00	586.11	0.00	.00	0.00	7.00	1.00
	7659.000	236.00	586.11	0.00	.00	0.00	7.00	1.00
	7765.000	236.00	587.08	0.00	.97	0.00	27.53	100.00
	7765.000	236.00	587.08	0.00	.97	0.00	27.53	100.00
	9655.000	236.00	587.13	0.00	.05	0.00	6.00	100.00
	9655.000	236.00	587.13	0.00	.05	0.00	6.00	100.00
	9656.000	236.00	588.45	0.00	1.32	0.00	6.00	60.00

9658.000	236.00	588.45	0.00	1.32	0.00	6.00	80.00
9660.000	236.00	588.49	0.00	.04	0.00	6.00	1.00
9660.000	236.00	588.49	0.00	.04	0.00	6.00	1.00
9875.000	236.00	588.92	0.00	.42	0.00	7.50	180.00
9875.000	236.00	588.92	0.00	.42	0.00	7.50	180.00
9925.000	236.00	589.62	0.00	.70	0.00	300.00	100.00
9925.000	236.00	589.64	.02	.72	.02	175.00	100.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
10675.000	236.00	589.96	0.00	.34	0.00	300.00	570.00
10675.000	236.00	590.03	.07	.39	.07	175.00	570.00
10676.000	236.00	589.76	0.00	-.20	0.00	7.00	100.00
10676.000	236.00	589.84	-.08	-.19	.08	7.00	100.00
10677.000	236.00	589.67	0.00	-.09	0.00	7.00	1.00
10677.000	236.00	589.75	.08	-.09	.08	7.00	1.00
10678.000	236.00	589.70	0.00	.04	0.00	7.00	22.50
10678.000	236.00	589.78	.08	.04	.08	7.00	22.50
10679.000	236.00	589.88	0.00	.18	0.00	7.00	1.00
10679.000	236.00	589.96	.08	.18	.08	7.00	1.00
10785.000	236.00	590.91	0.00	1.03	0.00	24.61	100.00
10785.000	236.00	590.96	.05	.99	.05	24.79	100.00
11725.000	236.00	592.72	0.00	1.81	0.00	25.84	790.00
11725.000	236.00	592.73	.01	1.77	.01	25.84	790.00
11726.000	236.00	592.86	0.00	.14	0.00	7.00	100.00
11726.000	236.00	592.87	.01	.14	.01	7.00	100.00
11728.000	236.00	593.33	0.00	.47	0.00	7.00	38.00
11728.000	236.00	593.33	.01	.47	.01	7.00	38.00
11925.000	236.00	594.72	0.00	1.39	0.00	250.00	140.00
11925.000	236.00	594.72	.00	1.39	.00	250.00	140.00
11926.000	236.00	594.88	0.00	.17	0.00	300.00	100.00
11926.000	236.00	594.88	.00	.16	.00	300.00	100.00
11927.000	236.00	594.90	0.00	.02	0.00	300.00	38.00
11927.000	236.00	594.90	.00	.02	.00	300.00	38.00
12125.000	236.00	594.96	0.00	.06	0.00	250.00	75.00
12125.000	236.00	594.96	.00	.06	.00	250.00	75.00
12126.000	236.00	595.09	0.00	.13	0.00	178.00	165.00
12126.000	236.00	595.09	.00	.13	.00	178.00	165.00
12127.000	236.00	595.10	0.00	.02	0.00	178.00	19.00
12127.000	236.00	595.10	.00	.02	.00	178.00	19.00
12355.000	236.00	595.16	0.00	.06	0.00	6.40	180.00
12355.000	236.00	595.16	.00	.06	.00	6.40	180.00
12356.000	200.00	596.04	0.00	.88	0.00	6.40	100.00
12356.000	200.00	596.04	.00	.88	.00	6.40	100.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
12357.000	200.00	596.50	0.00	.46	0.00	6.40	97.00
12357.000	200.00	596.50	.00	.46	.00	6.40	97.00
12505.000	200.00	596.73	0.00	.23	0.00	226.00	100.00
12505.000	200.00	596.73	.00	.23	.00	226.00	100.00
12705.000	200.00	596.74	0.00	.00	0.00	300.00	80.00
12705.000	200.00	596.74	.00	.00	.00	300.00	80.00

12706.000	200.00	596.75	0.00	.02	0.00	300.00	100.00
12706.000	200.00	596.75	.00	.02	.00	300.00	100.00
12707.000	200.00	596.77	0.00	.02	0.00	228.00	62.00
12707.000	200.00	596.77	.00	.02	.00	228.00	62.00
12905.000	200.00	596.78	0.00	.01	0.00	300.00	60.00
12905.000	200.00	596.78	-.00	.01	-.00	202.80	60.00
12906.000	200.00	596.79	0.00	.00	0.00	228.00	100.00
12906.000	200.00	596.79	.00	.01	.00	228.00	100.00
12907.000	200.00	596.80	0.00	.02	0.00	228.00	20.00
12907.000	200.00	596.81	.00	.02	.00	228.00	20.00
13055.000	200.00	596.81	0.00	.00	0.00	300.00	50.00
13055.000	200.00	596.81	-.00	-.00	-.00	175.00	50.00
13056.000	200.00	596.82	0.00	.01	0.00	300.00	80.00
13056.000	200.00	596.83	.01	.02	.01	300.00	80.00
13057.000	200.00	596.84	0.00	.02	0.00	300.00	23.00
13057.000	200.00	596.85	.01	.02	.01	300.00	23.00
13205.000	200.00	596.84	0.00	-.00	0.00	250.00	40.00
13205.000	200.00	596.84	.01	-.01	.01	200.00	40.00
13206.000	200.00	596.77	0.00	-.06	0.00	220.00	60.00
13206.000	200.00	596.80	.02	-.04	.02	220.00	60.00
13207.000	200.00	596.87	0.00	.10	0.00	250.00	22.50
13207.000	200.00	596.88	.01	.09	.01	250.00	22.50
13505.000	200.00	596.98	0.00	.11	0.00	300.00	135.00
13505.000	200.00	597.02	.04	.14	.04	175.00	135.00
13506.000	200.00	597.00	0.00	.01	0.00	200.00	100.00
13506.000	200.00	597.05	.05	.03	.05	200.00	100.00
13507.000	200.00	597.02	0.00	.02	0.00	263.00	70.00
13507.000	200.00	597.07	.05	.02	.05	263.00	70.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
13705.000	200.00	597.00	0.00	-.02	0.00	215.71	30.00
13705.000	200.00	597.05	.05	-.02	.05	150.00	30.00
13706.000	200.00	596.90	0.00	-.10	0.00	5.50	50.00
13706.000	200.00	596.92	.02	-.13	.02	5.50	50.00
13707.000	200.00	597.09	0.00	.20	0.00	5.50	48.00
13707.000	200.00	597.10	.00	.18	.00	5.50	48.00
13905.000	200.00	597.64	0.00	.54	0.00	196.56	55.00
13905.000	200.00	597.64	.00	.54	.00	102.90	55.00
13906.000	200.00	597.64	0.00	.00	0.00	188.90	100.00
13906.000	200.00	597.64	.00	.00	.00	189.04	100.00
13907.000	200.00	598.29	0.00	.65	0.00	292.00	40.00
13907.000	200.00	598.29	.00	.65	.00	292.00	40.00
14105.000	200.00	598.29	0.00	.00	0.00	500.00	100.00
14105.000	200.00	598.29	-.00	-.00	-.00	175.00	100.00
15000.000	200.00	598.31	0.00	.01	0.00	500.00	800.00
15000.000	200.00	598.34	.04	.05	.04	175.00	800.00

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO 7025.000 PROFILE 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO 7025.000 PROFILE 2 CRITICAL DEPTH ASSUMED

FLOODWAY DATA, KOEHLER DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
7025.000	7.	23.	10.3	582.4	582.4	0.0
7027.000	7.	23.	10.3	582.4	582.4	0.0
7028.000	7.	34.	6.9	584.0	584.0	0.0
7029.000	7.	34.	6.9	584.0	584.0	0.0
7524.000	7.	40.	5.9	584.8	584.8	0.0
7525.000	32.	126.	1.9	586.1	586.1	0.0
7655.000	7.	42.	5.6	586.0	586.0	0.0
7657.000	7.	35.	6.8	585.8	585.8	0.0
7658.000	7.	43.	5.5	586.1	586.1	0.0
7659.000	7.	43.	5.5	586.1	586.1	0.0
7765.000	28.	78.	3.0	587.1	587.1	0.0
9655.000	6.	25.	9.3	587.1	587.1	0.0
9656.000	6.	33.	7.1	588.5	588.5	0.0
9660.000	6.	34.	7.0	588.5	588.5	0.0
9875.000	8.	40.	5.9	588.9	588.9	0.0
9925.000	175.	186.	1.3	589.6	589.6	0.0
10675.000	175.	167.	1.4	590.1	590.0	.1
10676.000	7.	37.	6.3	589.9	589.8	.1
10677.000	7.	34.	7.0	589.8	589.7	.1
10678.000	7.	34.	7.0	589.8	589.7	.1
10679.000	7.	38.	6.2	590.0	589.9	.1
10785.000	25.	79.	3.0	590.9	590.9	0.0
11725.000	26.	86.	2.7	592.7	592.7	0.0
11726.000	7.	42.	5.6	592.9	592.9	0.0
11728.000	7.	35.	6.7	593.3	593.3	0.0
11925.000	250.	152.	1.6	594.7	594.7	0.0
11926.000	300.	224.	1.1	594.9	594.9	0.0
11927.000	300.	227.	1.0	594.9	594.9	0.0
12125.000	250.	223.	1.1	595.0	595.0	0.0
12126.000	178.	190.	1.2	595.1	595.1	0.0
12127.000	178.	192.	1.2	595.1	595.1	0.0
12355.000	6.	47.	5.1	595.2	595.2	0.0
12356.000	6.	52.	3.8	596.0	596.0	0.0
12357.000	6.	55.	3.6	596.5	596.5	0.0
12505.000	226.	472.	.4	596.7	596.7	0.0
12705.000	300.	356.	.6	596.7	596.7	0.0
12706.000	300.	359.	.6	596.8	596.8	0.0
12707.000	228.	291.	.7	596.8	596.8	0.0
12905.000	203.	375.	.5	596.8	596.8	0.0
12906.000	228.	420.	.5	596.8	596.8	0.0
12907.000	228.	424.	.5	596.8	596.8	0.0
13055.000	175.	241.	.8	596.8	596.8	0.0

FLOODWAY DATA, KOEHLER DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
13056.000	300.	395.	.5	596.8	596.8	0.0
13057.000	300.	405.	.5	596.8	596.8	0.0
13205.000	200.	210.	1.0	596.8	596.8	0.0

13[illegible]000	[illegible]0.	105.	1.[illegible]	59[illegible].[illegible]	59[illegible].8	0.0
13[illegible]07.000	[illegible]0.	136.	1.5	596.9	596.9	0.0
13[illegible]05.000	175.	250.	.8	597.0	597.0	0.0
13[illegible]06.000	200.	286.	.7	597.1	597.0	.1
13[illegible]07.000	263.	371.	.5	597.1	597.0	.1
13705.000	150.	130.	1.5	597.1	597.0	.1
13706.000	6.	35.	5.8	596.9	596.9	0.0
13707.000	6.	36.	5.6	597.1	597.1	0.0
13905.000	103.	396.	.5	597.6	597.6	0.0
13906.000	189.	472.	.4	597.6	597.6	0.0
13907.000	292.	627.	.3	598.3	598.3	0.0
14105.000	175.	361.	.6	598.3	598.3	0.0
15000.000	175.	370.	.5	598.3	598.3	0.0

1
82/11/17. 07.51.01.

THIS RUN EXECUTED 82/11/17. 07.51.01.

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**************************************************
HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR - 01,02,03,04,05
MODIFICATION - 50,51,52,53,54,55
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*** ROUTE. ***
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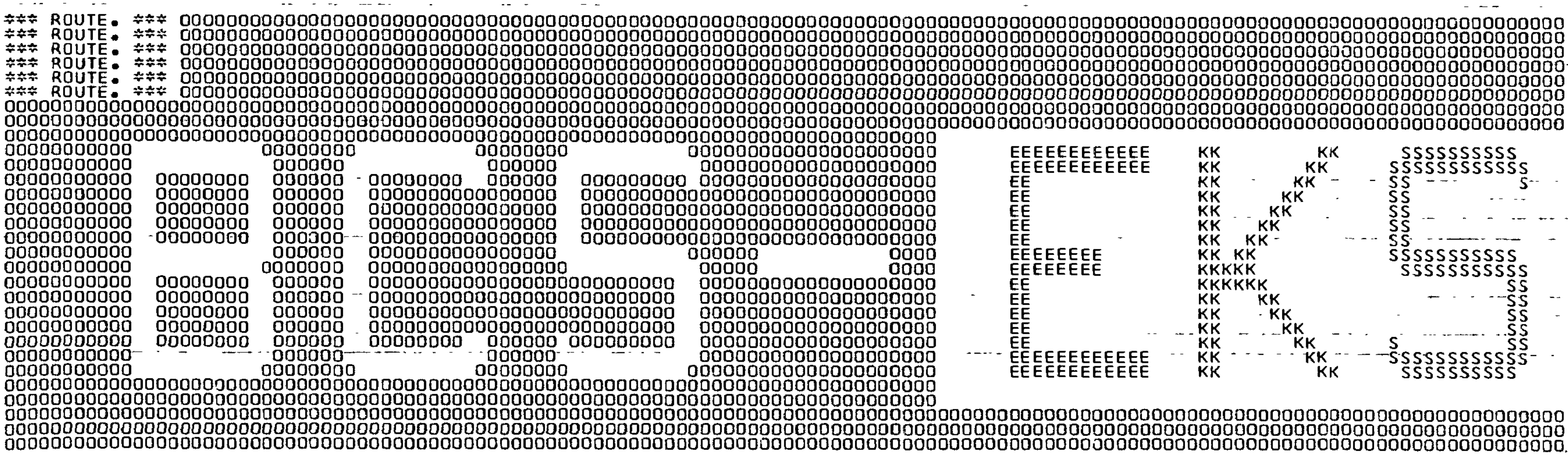

07.51.03. 82/11/17.EKS1 760K.N0501.67 B 82/11/07.DS-0

ROUTING JOB NAME MSCQENEE, USER GOVE01 PRIORITY P02.
07.51.03. ROUTED FILE NAME- HEC2OUT SHIFTED PRIORITY P02.
LENGTH IN PRUS IS 326.

THIS RUN EXECUTED 82/11/17. 10.47.32.

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
*****************************************************
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T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	0.000000	0.00	0.0	0.	579.500	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3.000	0.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1
82/11/17. 10.46.55. PAGE 11

THIS RUN EXECUTED 82/11/17. 10.47.33.

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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```

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	5.	0.	0.	0.000000	0.00	0.0	0.	579.500	0.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.000	-1.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

1
82/11/17. 10.46.55. PAGE 12

THIS RUN EXECUTED 82/11/17. 10.54.55.

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
  ERROR CORR -  01,02,03,04,05
  MODIFICATION -  50,51,52,53,54,55
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

KOEHLER DRAIN

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
*	7025.000	582.32	2.82	583.94	7.00	0.00	230.00	0.00	0.00	0.00	246.50	253.50	0.00
*	7025.000	582.34	2.84	583.96	7.00	0.00	232.00	0.00	0.00	0.00	246.50	253.50	0.00
*	7025.000	582.38	2.88	584.02	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
*	7025.000	582.44	2.94	584.10	7.00	0.00	242.00	0.00	0.00	0.00	246.50	253.50	0.00
	7027.000	582.37	0.00	583.98	7.00	0.00	230.00	0.00	320.00	.00	246.50	253.50	320.00
	7027.000	582.39	0.00	584.01	7.00	0.00	232.00	0.00	320.00	.00	246.50	253.50	320.00

7027.000	582.43	0.00	584.06	7.00	0.00	236.00	0.00	320.00	.00	246.50	253.50	320.00
7027.000	582.48	0.00	584.15	7.00	0.00	242.00	0.00	320.00	.00	246.50	253.50	320.00
7028.000	583.89	0.00	584.62	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
7028.000	583.91	0.00	584.65	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
7028.000	583.96	0.00	584.71	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
7028.000	584.04	0.00	584.80	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50
7029.000	583.91	0.00	584.63	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
7029.000	583.94	0.00	584.66	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
7029.000	583.99	0.00	584.73	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
7029.000	584.06	0.00	584.82	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50
7524.000	584.74	0.00	585.27	7.00	0.00	230.00	0.00	0.00	0.00	246.50	253.50	0.00
7524.000	584.77	0.00	585.30	7.00	0.00	232.00	0.00	0.00	0.00	246.50	253.50	0.00
7524.000	584.83	0.00	585.37	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
7524.000	584.92	0.00	585.46	7.00	0.00	242.00	0.00	0.00	0.00	246.50	253.50	0.00
7525.000	585.98	0.00	586.04	31.39	0.00	230.00	0.00	33.00	237.00	237.00	270.00	270.00
7525.000	586.01	0.00	586.07	31.51	0.00	232.00	0.00	33.00	237.00	237.00	270.00	270.00
7525.000	586.08	0.00	586.13	31.76	0.00	236.00	0.00	33.00	237.00	237.00	270.00	270.00
7525.000	586.17	0.00	586.23	32.12	0.00	242.00	0.00	33.00	237.00	237.00	270.00	270.00
7655.000	585.88	0.00	586.36	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
7655.000	585.91	0.00	586.39	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
7655.000	585.96	0.00	586.46	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
7655.000	586.05	0.00	586.56	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
7657.000	585.75	0.00	586.42	7.00	0.00	230.00	0.00	0.00	0.00	246.50	253.50	0.00
7657.000	585.77	0.00	586.46	7.00	0.00	232.00	0.00	0.00	0.00	246.50	253.50	0.00
7657.000	585.82	0.00	586.53	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
7657.000	585.89	0.00	586.63	7.00	0.00	242.00	0.00	0.00	0.00	246.50	253.50	0.00
7658.000	586.01	0.00	586.47	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
7658.000	586.04	0.00	586.51	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
7658.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
7658.000	586.21	0.00	586.69	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50
7659.000	586.01	0.00	586.48	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
7659.000	586.05	0.00	586.51	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
7659.000	586.11	0.00	586.58	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
7659.000	586.21	0.00	586.69	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50
7765.000	586.98	0.00	587.13	27.09	0.00	230.00	0.00	69.00	200.00	200.00	269.00	269.00
7765.000	587.01	0.00	587.16	27.24	0.00	232.00	0.00	69.00	200.00	200.00	269.00	269.00
7765.000	587.08	0.00	587.22	27.53	0.00	236.00	0.00	69.00	200.00	200.00	269.00	269.00
7765.000	587.18	0.00	587.32	27.97	0.00	242.00	0.00	69.00	200.00	200.00	269.00	269.00
9655.000	587.09	0.00	588.39	6.00	0.00	230.00	0.00	6.00	247.00	247.00	253.00	253.00
9655.000	587.10	0.00	588.42	6.00	0.00	232.00	0.00	6.00	247.00	247.00	253.00	253.00
9655.000	587.13	0.00	588.47	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00
9655.000	587.17	0.00	588.55	6.00	0.00	242.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.31	0.00	589.09	6.00	0.00	230.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.36	0.00	589.14	6.00	0.00	232.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.45	0.00	589.23	6.00	0.00	236.00	0.00	6.00	247.00	247.00	253.00	253.00
9656.000	588.61	0.00	589.38	6.00	0.00	242.00	0.00	6.00	247.00	247.00	253.00	253.00
9660.000	588.35	0.00	589.12	6.00	0.00	230.00	0.00	7.00	246.00	247.00	253.00	253.00
9660.000	588.40	0.00	589.16	6.00	0.00	232.00	0.00	7.00	246.00	247.00	253.00	253.00
9660.000	588.49	0.00	589.26	6.00	0.00	236.00	0.00	7.00	246.00	247.00	253.00	253.00
9660.000	588.65	0.00	589.41	6.00	0.00	242.00	0.00	7.00	246.00	247.00	253.00	253.00
9875.000	588.90	0.00	589.41	7.50	0.00	230.00	0.00	318.00	.00	246.30	253.80	318.00
9875.000	588.91	0.00	589.42	7.50	0.00	232.00	0.00	318.00	.00	246.30	253.80	318.00
9875.000	588.92	0.00	589.45	7.50	0.00	236.00	0.00	318.00	.00	246.30	253.80	318.00
9875.000	588.93	0.00	589.49	7.50	0.00	242.00	0.00	318.00	.00	246.30	253.80	318.00
9925.000	589.58	0.00	589.61	300.00	35.20	180.72	14.08	0.00	0.00	200.00	230.00	0.00
9925.000	589.59	0.00	589.62	300.00	36.94	180.29	14.77	0.00	0.00	200.00	230.00	0.00
9925.000	589.62	0.00	589.65	300.00	40.41	179.43	16.16	0.00	0.00	200.00	230.00	0.00

9925.000	589.66	0.00	589.68	300.00	45.53	178.26	18.20	0.00	0.00	200.00	230.00	0.00
10675.000	589.94	0.00	589.98	300.00	18.43	204.20	7.37	0.00	0.00	200.00	230.00	0.00
10675.000	589.94	0.00	589.99	300.00	19.61	204.55	7.84	0.00	0.00	200.00	230.00	0.00
10675.000	589.96	0.00	590.00	300.00	22.01	205.18	8.80	0.00	0.00	200.00	230.00	0.00
10675.000	589.99	0.00	590.03	300.00	25.71	206.01	10.28	0.00	0.00	200.00	230.00	0.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
10676.000	589.75	0.00	590.36	7.00	0.00	230.00	0.00	311.00	.00	246.50	253.50	311.00
10676.000	589.76	0.00	590.37	7.00	0.00	232.00	0.00	311.00	.00	246.50	253.50	311.00
10676.000	589.76	0.00	590.40	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10676.000	589.76	0.00	590.43	7.00	0.00	242.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.67	0.00	590.40	7.00	0.00	230.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.67	0.00	590.42	7.00	0.00	232.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.67	0.00	590.44	7.00	0.00	236.00	0.00	311.00	.00	246.50	253.50	311.00
10677.000	589.66	0.00	590.48	7.00	0.00	242.00	0.00	311.00	.00	246.50	253.50	311.00
10678.000	589.70	0.00	590.43	7.00	0.00	230.00	0.00	0.00	0.00	246.50	253.50	0.00
10678.000	589.70	0.00	590.44	7.00	0.00	232.00	0.00	0.00	0.00	246.50	253.50	0.00
10678.000	589.70	0.00	590.47	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
10678.000	589.70	0.00	590.51	7.00	0.00	242.00	0.00	0.00	0.00	246.50	253.50	0.00
10679.000	589.87	0.00	590.45	7.00	0.00	230.00	0.00	30.00	240.00	246.50	253.50	270.00
10679.000	589.87	0.00	590.46	7.00	0.00	232.00	0.00	30.00	240.00	246.50	253.50	270.00
10679.000	589.88	0.00	590.49	7.00	0.00	236.00	0.00	30.00	240.00	246.50	253.50	270.00
10679.000	589.89	0.00	590.53	7.00	0.00	242.00	0.00	30.00	240.00	246.50	253.50	270.00
10785.000	590.86	0.00	591.00	24.42	0.00	230.00	0.00	0.00	0.00	240.00	270.00	0.00
10785.000	590.87	0.00	591.02	24.48	0.00	232.00	0.00	0.00	0.00	240.00	270.00	0.00
10785.000	590.91	0.00	591.05	24.61	0.00	236.00	0.00	0.00	0.00	240.00	270.00	0.00
10785.000	590.96	0.00	591.10	24.80	0.00	242.00	0.00	0.00	0.00	240.00	270.00	0.00
11725.000	592.66	0.00	592.78	25.58	0.00	230.00	0.00	311.00	.00	240.00	270.00	311.00
11725.000	592.69	0.00	592.80	25.64	0.00	232.00	0.00	311.00	.00	240.00	270.00	311.00
11725.000	592.72	0.00	592.84	25.84	0.00	236.00	0.00	311.00	.00	240.00	270.00	311.00
11725.000	592.78	0.00	592.90	26.06	0.00	242.00	0.00	311.00	.00	240.00	270.00	311.00
11726.000	592.81	0.00	593.27	7.00	0.00	230.00	0.00	7.00	246.50	246.50	253.50	253.50
11726.000	592.83	0.00	593.30	7.00	0.00	232.00	0.00	7.00	246.50	246.50	253.50	253.50
11726.000	592.86	0.00	593.34	7.00	0.00	236.00	0.00	7.00	246.50	246.50	253.50	253.50
11726.000	592.91	0.00	593.41	7.00	0.00	242.00	0.00	7.00	246.50	246.50	253.50	253.50
11728.000	593.27	0.00	593.94	7.00	0.00	230.00	0.00	0.00	0.00	246.50	253.50	0.00
11728.000	593.29	0.00	593.97	7.00	0.00	232.00	0.00	0.00	0.00	246.50	253.50	0.00
11728.000	593.33	0.00	594.03	7.00	0.00	236.00	0.00	0.00	0.00	246.50	253.50	0.00
11728.000	593.39	0.00	594.13	7.00	0.00	242.00	0.00	0.00	0.00	246.50	253.50	0.00
11925.000	594.67	0.00	594.74	250.00	87.82	131.83	10.35	250.00	50.00	246.50	253.50	300.00
11925.000	594.69	0.00	594.75	250.00	92.11	129.04	10.85	250.00	50.00	246.50	253.50	300.00
11925.000	594.72	0.00	594.78	250.00	99.48	124.80	11.72	250.00	50.00	246.50	253.50	300.00
11925.000	594.77	0.00	594.82	250.00	111.04	117.88	13.07	250.00	50.00	246.50	253.50	300.00
11926.000	594.86	0.00	594.88	300.00	113.29	88.94	27.76	0.00	0.00	246.50	253.50	0.00
11926.000	594.87	0.00	594.89	300.00	115.31	88.44	28.26	0.00	0.00	246.50	253.50	0.00
11926.000	594.88	0.00	594.91	300.00	119.29	87.48	29.23	0.00	0.00	246.50	253.50	0.00
11926.000	594.92	0.00	594.94	300.00	125.85	85.31	30.84	0.00	0.00	246.50	253.50	0.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
11927.000	594.87	0.00	594.90	300.00	114.49	87.45	28.06	-50.00	50.00	246.50	253.50	350.01
11927.000	594.88	0.00	594.91	300.00	116.58	86.85	28.57	-50.00	50.00	246.50	253.50	350.01
11927.000	594.90	0.00	594.92	300.00	120.66	85.78	29.57	-50.00	50.00	246.50	253.50	350.01
11927.000	594.93	0.00	594.95	300.00	127.35	83.44	31.20	-50.00	50.00	246.50	253.50	350.01
12125.000	594.94	0.00	594.96	250.00	127.72	60.13	42.15	0.00	0.00	247.50	252.50	0.00
12125.000	594.95	0.00	594.97	250.00	129.38	59.92	42.69	0.00	0.00	247.50	252.50	0.00
12125.000	594.96	0.00	594.99	250.00	132.67	59.55	43.78	0.00	0.00	247.50	252.50	0.00
12125.000	594.99	0.00	595.01	250.00	137.89	58.61	45.50	0.00	0.00	247.50	252.50	0.00
12126.000	595.07	0.00	595.09	178.00	158.16	58.42	13.42	278.00	.00	247.50	252.50	278.00
12126.000	595.07	0.00	595.10	178.00	159.98	58.44	13.58	278.00	.00	247.50	252.50	278.00

121[illegible].000	[illegible]	0.00	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
121[illegible]6.000	595.11	0.00	595.14	178.00	169.59	58.03	14.38	278.00	.00	247.50	252.50	278.00
12127.000	595.08	0.00	595.11	178.00	158.74	57.79	13.47	238.00	40.00	247.50	252.50	278.00
12127.000	595.09	0.00	595.12	178.00	160.60	57.77	13.63	238.00	40.00	247.50	252.50	278.00
12127.000	595.10	0.00	595.13	178.00	164.32	57.74	13.94	238.00	40.00	247.50	252.50	278.00
12127.000	595.13	0.00	595.15	178.00	170.08	57.50	14.42	238.00	40.00	247.50	252.50	278.00
12355.000	595.15	0.00	595.53	6.40	0.00	230.00	0.00	0.00	0.00	246.80	253.20	0.00
12355.000	595.15	0.00	595.54	6.40	0.00	232.00	0.00	0.00	0.00	246.80	253.20	0.00
12355.000	595.16	0.00	595.56	6.40	0.00	236.00	0.00	0.00	0.00	246.80	253.20	0.00
12355.000	595.17	0.00	595.59	6.40	0.00	242.00	0.00	0.00	0.00	246.80	253.20	0.00
12356.000	595.99	0.00	596.22	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12356.000	596.01	0.00	596.24	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12356.000	596.04	0.00	596.27	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12356.000	596.09	0.00	596.31	6.40	0.00	200.00	0.00	150.00	170.00	246.80	253.20	320.00
12357.000	596.50	0.00	596.70	6.40	0.00	200.00	0.00	278.00	.00	246.80	253.20	278.00
12357.000	596.50	0.00	596.70	228.00	.24	199.74	.02	278.00	.00	246.80	253.20	278.00
12357.000	596.50	0.00	596.71	6.40	0.00	200.00	0.00	278.00	.00	246.80	253.20	278.00
12357.000	596.51	0.00	596.71	228.00	.46	199.52	.03	278.00	.00	246.80	253.20	278.00
12505.000	596.73	0.00	596.73	226.00	124.82	72.64	2.54	226.00	50.00	238.00	263.00	276.00
12505.000	596.73	0.00	596.73	226.00	124.89	72.57	2.54	226.00	50.00	238.00	263.00	276.00
12505.000	596.73	0.00	596.74	226.00	125.04	72.42	2.55	226.00	50.00	238.00	263.00	276.00
12505.000	596.74	0.00	596.74	226.00	125.24	72.20	2.56	226.00	50.00	238.00	263.00	276.00
12705.000	596.73	0.00	596.74	300.00	130.28	37.83	31.89	318.00	50.00	246.80	253.30	368.00
12705.000	596.73	0.00	596.74	300.00	130.35	37.74	31.91	318.00	50.00	246.80	253.30	368.00
12705.000	596.74	0.00	596.74	300.00	130.51	37.54	31.95	318.00	50.00	246.80	253.30	368.00
12705.000	596.74	0.00	596.75	300.00	130.74	37.26	32.00	318.00	50.00	246.80	253.30	368.00
12706.000	596.75	0.00	596.75	300.00	130.61	37.41	31.97	315.00	50.00	246.80	253.30	365.00
12706.000	596.75	0.00	596.76	300.00	130.68	37.33	31.99	315.00	50.00	246.80	253.30	365.00
12706.000	596.75	0.00	596.76	300.00	130.84	37.14	32.03	315.00	50.00	246.80	253.30	365.00
12706.000	596.76	0.00	596.77	300.00	131.05	36.87	32.08	315.00	50.00	246.80	253.30	365.00

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SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
12707.000	596.77	0.00	596.77	228.00	149.78	41.05	9.17	278.00	.00	246.80	253.30	278.00
12707.000	596.77	0.00	596.78	228.00	149.86	40.97	9.17	278.00	.00	246.80	253.30	278.00
12707.000	596.77	0.00	596.78	228.00	150.04	40.78	9.18	278.00	.00	246.80	253.30	278.00
12707.000	596.78	0.00	596.79	228.00	150.30	40.51	9.20	278.00	.00	246.80	253.30	278.00
12905.000	596.78	0.00	596.78	300.00	148.31	15.37	36.32	0.00	0.00	247.30	252.80	0.00
12905.000	596.78	0.00	596.78	300.00	148.33	15.35	36.33	0.00	0.00	247.30	252.80	0.00
12905.000	596.78	0.00	596.78	300.00	148.36	15.30	36.34	0.00	0.00	247.30	252.80	0.00
12905.000	596.79	0.00	596.79	300.00	148.42	15.23	36.35	0.00	0.00	247.30	252.80	0.00
12906.000	596.78	0.00	596.78	228.00	171.79	17.64	10.57	278.00	.00	247.30	252.80	278.00
12906.000	596.78	0.00	596.79	228.00	171.81	17.62	10.57	278.00	.00	247.30	252.80	278.00
12906.000	596.79	0.00	596.79	228.00	171.86	17.57	10.57	278.00	.00	247.30	252.80	278.00
12906.000	596.79	0.00	596.80	228.00	171.93	17.49	10.57	278.00	.00	247.30	252.80	278.00
12907.000	596.80	0.00	596.80	228.00	171.96	17.47	10.57	278.00	.00	247.30	252.80	278.00
12907.000	596.80	0.00	596.80	228.00	171.98	17.44	10.57	278.00	.00	247.30	252.80	278.00
12907.000	596.80	0.00	596.81	228.00	172.03	17.39	10.58	278.00	.00	247.30	252.80	278.00
12907.000	596.81	0.00	596.81	228.00	172.10	17.32	10.58	278.00	.00	247.30	252.80	278.00
13055.000	596.80	0.00	596.81	300.00	144.61	19.85	35.55	0.00	0.00	247.50	252.50	0.00
13055.000	596.80	0.00	596.81	300.00	144.64	19.81	35.55	0.00	0.00	247.50	252.50	0.00
13055.000	596.81	0.00	596.81	300.00	144.71	19.72	35.57	0.00	0.00	247.50	252.50	0.00
13055.000	596.81	0.00	596.82	300.00	144.81	19.59	35.60	0.00	0.00	247.50	252.50	0.00
13056.000	596.81	0.00	596.82	300.00	144.73	19.70	35.58	385.00	.00	247.50	252.50	385.00
13056.000	596.81	0.00	596.82	300.00	144.76	19.66	35.58	385.00	.00	247.50	252.50	385.00
13056.000	596.82	0.00	596.82	300.00	144.83	19.57	35.60	385.00	.00	247.50	252.50	385.00
13056.000	596.82	0.00	596.83	300.00	144.92	19.45	35.62	385.00	.00	247.50	252.50	385.00
13057.000	596.83	0.00	596.84	300.00	145.19	19.13	35.69	385.00	.00	247.50	252.50	385.00
13057.000	596.83	0.00	596.84	300.00	145.22	19.09	35.69	385.00	.00	247.50	252.50	385.00
13057.000	596.84	0.00	596.84	300.00	145.28	19.01	35.71	385.00	.00	247.50	252.50	385.00
13057.000	596.84	0.00	596.85	300.00	145.37	18.90	35.73	385.00	.00	247.50	252.50	385.00
13[illegible]05.000	596.83	0.00	596.85	250.00	98.92	68.51	32.57	0.00	0.00	247.00	253.00	0.00
13[illegible]05.000	596.83	0.00	596.85	250.00	99.03	68.36	32.61	0.00	0.00	247.00	253.00	0.00
13[illegible]05.000	596.84	0.00	596.85	250.00	99.28	68.0[illegible]	32.69	0.00	0.00	247.00	253.00	0.00

13205.000	596.84	0.00	596.86	250.00	99.63	87.37	32.80	0.00	0.00	247.00	253.00	0.00
13206.000	596.76	0.00	596.94	220.00	37.94	153.41	8.65	320.00	.00	247.00	253.00	320.00
13206.000	596.77	0.00	596.94	220.00	38.45	152.78	8.77	320.00	.00	247.00	253.00	320.00
13206.000	596.77	0.00	596.94	220.00	39.58	151.39	9.02	320.00	.00	247.00	253.00	320.00
13206.000	596.78	0.00	596.94	220.00	41.17	149.45	9.38	320.00	.00	247.00	253.00	320.00
13207.000	596.87	0.00	596.94	250.00	68.59	108.81	22.60	6.00	247.00	247.00	253.00	253.00
13207.000	596.87	0.00	596.94	250.00	68.67	108.71	22.63	6.00	247.00	247.00	253.00	253.00
13207.000	596.87	0.00	596.94	250.00	68.89	108.40	22.70	6.00	247.00	247.00	253.00	253.00
13207.000	596.88	0.00	596.94	250.00	69.33	107.82	22.85	6.00	247.00	247.00	253.00	253.00

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82/11/17. 10.46.55.

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
13505.000	596.98	0.00	596.99	300.00	141.26	24.10	34.64	0.00	0.00	247.00	253.00	0.00
13505.000	596.98	0.00	596.99	300.00	141.28	24.08	34.64	0.00	0.00	247.00	253.00	0.00
13505.000	596.98	0.00	596.99	300.00	141.32	24.03	34.65	0.00	0.00	247.00	253.00	0.00
13505.000	596.99	0.00	596.99	300.00	141.37	23.96	34.66	0.00	0.00	247.00	253.00	0.00
13506.000	596.99	0.00	597.00	200.00	144.59	32.55	22.85	200.00	100.00	247.00	253.00	300.00
13506.000	596.99	0.00	597.00	200.00	144.62	32.53	22.86	200.00	100.00	247.00	253.00	300.00
13506.000	597.00	0.00	597.01	200.00	144.66	32.47	22.86	200.00	100.00	247.00	253.00	300.00
13506.000	597.00	0.00	597.01	200.00	144.74	32.39	22.88	200.00	100.00	247.00	253.00	300.00
13507.000	597.01	0.00	597.02	263.00	152.22	24.81	22.97	313.00	.00	247.00	253.00	313.00
13507.000	597.01	0.00	597.02	263.00	152.24	24.79	22.97	313.00	.00	247.00	253.00	313.00
13507.000	597.02	0.00	597.02	263.00	152.28	24.75	22.97	313.00	.00	247.00	253.00	313.00
13507.000	597.02	0.00	597.02	263.00	152.33	24.69	22.98	313.00	.00	247.00	253.00	313.00
13705.000	597.00	0.00	597.04	215.13	99.94	75.44	24.62	0.00	0.00	247.30	252.80	0.00
13705.000	597.00	0.00	597.04	215.30	100.02	75.34	24.64	0.00	0.00	247.30	252.80	0.00
13705.000	597.00	0.00	597.04	215.71	100.20	75.12	24.68	0.00	0.00	247.30	252.80	0.00
13705.000	597.00	0.00	597.05	216.30	100.45	74.81	24.74	0.00	0.00	247.30	252.80	0.00
13706.000	596.90	0.00	597.42	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13706.000	596.90	0.00	597.42	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13706.000	596.90	0.00	597.42	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13706.000	596.90	0.00	597.42	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.09	0.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.09	0.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.09	0.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13707.000	597.09	0.00	597.59	5.50	0.00	200.00	0.00	292.00	.00	247.30	252.80	292.00
13905.000	597.64	0.00	597.64	196.56	186.58	13.41	.00	0.00	0.00	247.30	252.80	0.00
13905.000	597.64	0.00	597.64	196.56	186.58	13.41	.00	0.00	0.00	247.30	252.80	0.00
13905.000	597.64	0.00	597.64	196.56	186.58	13.41	.00	0.00	0.00	247.30	252.80	0.00
13905.000	597.64	0.00	597.64	196.57	186.58	13.41	.00	0.00	0.00	247.30	252.80	0.00
13906.000	597.64	0.00	597.64	188.89	185.80	14.19	.00	342.00	.00	247.30	252.80	342.00
13906.000	597.64	0.00	597.64	188.90	185.80	14.19	.00	342.00	.00	247.30	252.80	342.00
13906.000	597.64	0.00	597.64	188.90	185.80	14.19	.00	342.00	.00	247.30	252.80	342.00
13906.000	597.64	0.00	597.64	188.90	185.80	14.19	.00	342.00	.00	247.30	252.80	342.00
13907.000	598.29	0.00	598.29	292.00	187.56	11.50	.95	342.00	.00	247.30	252.80	342.00
13907.000	598.29	0.00	598.29	292.00	187.56	11.50	.95	342.00	.00	247.30	252.80	342.00
13907.000	598.29	0.00	598.29	292.00	187.56	11.50	.95	342.00	.00	247.30	252.80	342.00
13907.000	598.29	0.00	598.29	292.00	187.56	11.50	.95	342.00	.00	247.30	252.80	342.00
14105.000	598.29	0.00	598.29	500.00	105.70	50.14	44.16	0.00	0.00	242.00	270.00	0.00
14105.000	598.29	0.00	598.29	500.00	105.70	50.14	44.16	0.00	0.00	242.00	270.00	0.00
14105.000	598.29	0.00	598.29	500.00	105.70	50.14	44.16	0.00	0.00	242.00	270.00	0.00
14105.000	598.29	0.00	598.29	500.00	105.70	50.14	44.16	0.00	0.00	242.00	270.00	0.00

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82/11/17. 10.46.55.

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
15000.000	598.31	0.00	598.31	500.00	105.92	49.79	44.29	0.00	0.00	242.00	270.00	0.00
15000.000	598.31	0.00	598.31	500.00	105.92	49.79	44.29	0.00	0.00	242.00	270.00	0.00
15000.000	598.31	0.00	598.31	500.00	105.92	49.79	44.29	0.00	0.00	242.00	270.00	0.00

15000.000 598.31 0.00 598.31 500.00 105.92 49.79 44.29 0.00 0.00 242.00 270.00 0.00

KOEHLER DRAIN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
*	7025.000	0.00	0.00	0.00	578.10	230.00	582.32	582.32	583.94	421.22	10.20	22.55	11.21
*	7025.000	0.00	0.00	0.00	578.10	232.00	582.34	582.34	583.96	421.85	10.23	22.68	11.30
*	7025.000	0.00	0.00	0.00	578.10	236.00	582.38	582.38	584.02	423.12	10.28	22.96	11.47
*	7025.000	0.00	0.00	0.00	578.10	242.00	582.44	582.44	584.10	425.06	10.36	23.36	11.74
	7027.000	1.00	587.00	587.00	578.10	230.00	582.37	582.24	583.98	426.62	10.17	22.61	11.14
	7027.000	1.00	587.00	587.00	578.10	232.00	582.39	582.26	584.01	428.12	10.20	22.73	11.21
	7027.000	1.00	587.00	587.00	578.10	236.00	582.43	582.29	584.06	431.18	10.27	22.98	11.37
	7027.000	1.00	587.00	587.00	578.10	242.00	582.48	582.35	584.15	435.87	10.37	23.35	11.59
	7028.000	23.00	0.00	0.00	578.10	230.00	583.89	0.00	584.62	152.71	6.87	33.49	18.61
	7028.000	23.00	0.00	0.00	578.10	232.00	583.91	0.00	584.65	153.31	6.89	33.67	18.74
	7028.000	23.00	0.00	0.00	578.10	236.00	583.96	0.00	584.71	154.51	6.94	34.03	18.99
	7028.000	23.00	0.00	0.00	578.10	242.00	584.04	0.00	584.80	156.21	7.00	34.57	19.36
	7029.000	1.00	0.00	0.00	578.10	230.00	583.91	0.00	584.63	150.39	6.83	33.69	18.76
	7029.000	1.00	0.00	0.00	578.10	232.00	583.94	0.00	584.66	150.99	6.85	33.88	18.88
	7029.000	1.00	0.00	0.00	578.10	236.00	583.99	0.00	584.73	152.17	6.89	34.24	19.13
	7029.000	1.00	0.00	0.00	578.10	242.00	584.06	0.00	584.82	153.86	6.96	34.78	19.51
	7524.000	50.00	0.00	0.00	578.10	230.00	584.74	0.00	585.27	101.67	5.83	39.47	22.81
	7524.000	50.00	0.00	0.00	578.10	232.00	584.77	0.00	585.30	102.12	5.85	39.68	22.96
	7524.000	50.00	0.00	0.00	578.10	236.00	584.83	0.00	585.37	103.02	5.89	40.09	23.25
	7524.000	50.00	0.00	0.00	578.10	242.00	584.92	0.00	585.46	104.33	5.94	40.71	23.69
	7525.000	470.00	0.00	0.00	579.10	230.00	585.98	0.00	586.04	5.94	1.87	122.73	94.37
	7525.000	470.00	0.00	0.00	579.10	232.00	586.01	0.00	586.07	5.91	1.88	123.72	95.39
	7525.000	470.00	0.00	0.00	579.10	236.00	586.08	0.00	586.13	5.86	1.88	125.72	97.46
	7525.000	470.00	0.00	0.00	579.10	242.00	586.17	0.00	586.23	5.79	1.88	128.73	100.59
	7655.000	130.00	0.00	0.00	579.00	230.00	585.88	0.00	586.36	91.56	5.58	41.20	24.04
	7655.000	130.00	0.00	0.00	579.00	232.00	585.91	0.00	586.39	92.06	5.60	41.40	24.18
	7655.000	130.00	0.00	0.00	579.00	236.00	585.96	0.00	586.46	93.05	5.65	41.80	24.47
	7655.000	130.00	0.00	0.00	579.00	242.00	586.05	0.00	586.56	94.87	5.72	42.33	24.85
	7657.000	1.00	586.80	586.80	579.00	230.00	585.75	0.00	586.42	21.44	6.60	34.84	49.67
	7657.000	1.00	586.80	586.80	579.00	232.00	585.77	0.00	586.46	21.94	6.65	34.87	49.53
	7657.000	1.00	586.80	586.80	579.00	236.00	585.82	0.00	586.53	22.98	6.76	34.92	49.23
	7657.000	1.00	586.80	586.80	579.00	242.00	585.89	0.00	586.63	24.63	6.92	34.97	48.76
	7658.000	21.00	0.00	0.00	579.00	230.00	586.01	0.00	586.47	9.67	5.47	42.07	73.98
	7658.000	21.00	0.00	0.00	579.00	232.00	586.04	0.00	586.51	9.71	5.48	42.30	74.47
	7658.000	21.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	9.78	5.52	42.76	75.45
	7658.000	21.00	0.00	0.00	579.00	242.00	586.21	0.00	586.69	9.89	5.57	43.45	76.94

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
7659.000	1.00	0.00	0.00	579.00	230.00	586.01	0.00	586.48	129.89	5.47	42.08	20.18
7659.000	1.00	0.00	0.00	579.00	232.00	586.05	0.00	586.51	130.43	5.48	42.31	20.31
7659.000	1.00	0.00	0.00	579.00	236.00	586.11	0.00	586.58	131.48	5.52	42.77	20.58
7659.000	1.00	0.00	0.00	579.00	242.00	586.21	0.00	586.69	132.98	5.57	43.46	20.99
7765.000	100.00	0.00	0.00	582.30	230.00	586.98	0.00	587.13	36.20	3.07	74.98	38.23
7765.000	100.00	0.00	0.00	582.30	232.00	587.01	0.00	587.16	35.70	3.06	75.86	38.83
7765.000	100.00	0.00	0.00	582.30	236.00	587.08	0.00	587.22	34.72	3.04	77.62	40.05
7765.000	100.00	0.00	0.00	582.30	242.00	587.18	0.00	587.32	33.30	3.01	80.31	41.93
9655.000	100.00	0.00	0.00	582.90	230.00	587.09	0.00	588.39	543.61	9.14	25.15	9.86
9655.000	100.00	0.00	0.00	582.90	232.00	587.10	0.00	588.42	548.65	9.19	25.23	9.90
9655.000	100.00	0.00	0.00	582.90	236.00	587.13	0.00	588.47	558.57	9.29	25.40	9.99
9655.000	100.00	0.00	0.00	582.90	242.00	587.17	0.00	588.55	572.94	9.44	25.64	10.11
9656.000	60.00	590.00	586.30	582.90	230.00	588.31	0.00	589.09	286.62	7.09	32.44	13.59
9656.000	60.00	590.00	586.30	582.90	232.00	588.36	0.00	589.14	285.28	7.09	32.73	13.74

9656.000	60.00	590.00	586.30	582.90	242.00	588.61	0.00	589.38	277.95	7.07	34.23	14.52
9660.000	1.00	0.00	0.00	582.90	230.00	588.35	0.00	589.12	281.37	7.04	32.69	13.71
9660.000	1.00	0.00	0.00	582.90	232.00	588.40	0.00	589.16	280.08	7.04	32.98	13.86
9660.000	1.00	0.00	0.00	582.90	236.00	588.49	0.00	589.26	277.37	7.03	33.57	14.17
9660.000	1.00	0.00	0.00	582.90	242.00	588.65	0.00	589.41	273.00	7.02	34.48	14.65
9875.000	180.00	589.30	587.70	582.90	230.00	588.90	0.00	589.41	140.30	5.73	40.15	19.42
9875.000	180.00	589.30	587.70	582.90	232.00	588.91	0.00	589.42	141.92	5.76	40.24	19.47
9875.000	180.00	589.30	587.70	582.90	236.00	588.92	0.00	589.45	146.66	5.86	40.26	19.49
9875.000	180.00	589.30	587.70	582.90	242.00	588.93	0.00	589.49	154.09	6.01	40.28	19.50
9925.000	100.00	0.00	0.00	582.80	230.00	589.58	0.00	589.61	5.38	1.49	225.21	99.18
9925.000	100.00	0.00	0.00	582.80	232.00	589.59	0.00	589.62	5.29	1.49	229.17	100.83
9925.000	100.00	0.00	0.00	582.80	236.00	589.62	0.00	589.65	5.13	1.47	236.99	104.16
9925.000	100.00	0.00	0.00	582.80	242.00	589.66	0.00	589.68	4.91	1.45	248.29	109.18
10675.000	570.00	0.00	0.00	583.30	230.00	589.94	0.00	589.98	7.80	1.75	179.62	82.33
10675.000	570.00	0.00	0.00	583.30	232.00	589.94	0.00	589.99	7.77	1.75	182.38	83.23
10675.000	570.00	0.00	0.00	583.30	236.00	589.96	0.00	590.00	7.70	1.75	187.84	85.07
10675.000	570.00	0.00	0.00	583.30	242.00	589.99	0.00	590.03	7.58	1.75	195.89	87.87
10676.000	100.00	0.00	0.00	583.40	230.00	589.75	0.00	590.36	180.87	6.25	36.79	17.10
10676.000	100.00	0.00	0.00	583.40	232.00	589.76	0.00	590.37	183.87	6.30	36.80	17.11
10676.000	100.00	0.00	0.00	583.40	236.00	589.76	0.00	590.40	190.00	6.41	36.82	17.12
10676.000	100.00	0.00	0.00	583.40	242.00	589.76	0.00	590.43	199.49	6.57	36.85	17.13
10677.000	1.00	591.80	591.80	583.40	230.00	589.67	0.00	590.40	12.28	6.88	33.42	65.62
10677.000	1.00	591.80	591.80	583.40	232.00	589.67	0.00	590.42	12.50	6.94	33.42	65.62
10677.000	1.00	591.80	591.80	583.40	236.00	589.67	0.00	590.44	12.94	7.06	33.41	65.61
10677.000	1.00	591.80	591.80	583.40	242.00	589.66	0.00	590.48	13.61	7.25	33.40	65.59

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
10678.000	22.50	591.80	591.80	583.40	230.00	589.70	0.00	590.43	12.16	6.85	33.58	65.95
10678.000	22.50	591.80	591.80	583.40	232.00	589.70	0.00	590.44	12.37	6.91	33.59	65.96
10678.000	22.50	591.80	591.80	583.40	236.00	589.70	0.00	590.47	12.80	7.03	33.59	65.96
10678.000	22.50	591.80	591.80	583.40	242.00	589.70	0.00	590.51	13.46	7.20	33.59	65.96
10679.000	1.00	0.00	0.00	583.40	230.00	589.87	0.00	590.45	141.86	6.12	37.58	19.31
10679.000	1.00	0.00	0.00	583.40	232.00	589.87	0.00	590.46	144.04	6.17	37.61	19.33
10679.000	1.00	0.00	0.00	583.40	236.00	589.88	0.00	590.49	148.45	6.26	37.67	19.37
10679.000	1.00	0.00	0.00	583.40	242.00	589.89	0.00	590.53	155.23	6.41	37.75	19.42
10785.000	100.00	0.00	0.00	585.10	230.00	590.86	0.00	591.00	25.64	3.00	76.65	45.42
10785.000	100.00	0.00	0.00	585.10	232.00	590.87	0.00	591.02	25.72	3.01	77.06	45.75
10785.000	100.00	0.00	0.00	585.10	236.00	590.91	0.00	591.05	25.87	3.03	77.89	46.40
10785.000	100.00	0.00	0.00	585.10	242.00	590.96	0.00	591.10	26.08	3.06	79.12	47.39
11725.000	790.00	0.00	0.00	586.60	230.00	592.66	0.00	592.78	19.92	2.73	84.26	51.53
11725.000	790.00	0.00	0.00	586.60	232.00	592.69	0.00	592.80	20.01	2.74	84.66	51.86
11725.000	790.00	0.00	0.00	586.60	236.00	592.72	0.00	592.84	19.88	2.75	85.96	52.93
11725.000	790.00	0.00	0.00	586.60	242.00	592.78	0.00	592.90	19.96	2.77	87.48	54.17
11726.000	100.00	0.00	0.00	585.80	230.00	592.81	0.00	593.27	107.51	5.47	42.05	22.18
11726.000	100.00	0.00	0.00	585.80	232.00	592.83	0.00	593.30	108.35	5.50	42.22	22.29
11726.000	100.00	0.00	0.00	585.80	236.00	592.86	0.00	593.34	110.93	5.57	42.40	22.41
11726.000	100.00	0.00	0.00	585.80	242.00	592.91	0.00	593.41	114.06	5.65	42.80	22.66
11728.000	38.00	593.90	592.70	585.80	230.00	593.27	0.00	593.94	255.93	6.57	35.00	14.38
11728.000	38.00	593.90	592.70	585.80	232.00	593.29	0.00	593.97	260.40	6.63	35.00	14.38
11728.000	38.00	593.90	592.70	585.80	236.00	593.33	0.00	594.03	269.46	6.74	35.00	14.38
11728.000	38.00	593.90	592.70	585.80	242.00	593.39	0.00	594.13	283.33	6.91	35.00	14.38
11925.000	140.00	0.00	0.00	586.50	230.00	594.67	0.00	594.74	22.36	2.65	139.85	48.64
11925.000	140.00	0.00	0.00	586.50	232.00	594.69	0.00	594.75	21.26	2.58	144.00	50.32
11925.000	140.00	0.00	0.00	586.50	236.00	594.72	0.00	594.78	19.63	2.49	151.04	53.27
11925.000	140.00	0.00	0.00	586.50	242.00	594.77	0.00	594.82	17.13	2.34	162.74	58.46
11926.000	100.00	0.00	0.00	586.50	230.00	594.86	0.00	594.88	9.32	1.74	215.66	75.34
11926.000	100.00	0.00	0.00	586.50	232.00	594.87	0.00	594.89	9.18	1.73	218.24	76.58
11926.000	100.00	0.00	0.00	586.50	236.00	594.88	0.00	594.91	8.91	1.70	223.32	79.06
11926.000	100.00	0.00	0.00	586.50	242.00	594.92	0.00	594.94	8.36	1.65	232.62	83.72
11927.000	38.00	594.30	593.50	586.50	230.00	594.87	0.00	594.90	8.97	1.71	218.70	76.80
11927.000	38.00	594.30	593.50	586.50	232.00	594.88	0.00	594.91	8.81	1.69	221.51	78.17
11927.000	38.00	594.30	593.50	586.50	236.00	594.90	0.00	594.92	8.52	1.67	226.93	80.85

11927.000	38.00	594.30	593.30	586.50	242.00	594.93	0.00	594.95	7.94	1.61	238.80	85.88
12125.000	75.00	0.00	0.00	587.30	230.00	594.94	0.00	594.96	8.40	1.73	216.21	79.37
12125.000	75.00	0.00	0.00	587.30	232.00	594.95	0.00	594.97	8.30	1.72	218.28	80.51
12125.000	75.00	0.00	0.00	587.30	236.00	594.96	0.00	594.99	8.14	1.71	222.27	82.72
12125.000	75.00	0.00	0.00	587.30	242.00	594.99	0.00	595.01	7.78	1.68	229.45	86.77

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
12126.000	165.00	0.00	0.00	587.30	230.00	595.07	0.00	595.09	7.44	1.65	186.56	84.33
12126.000	165.00	0.00	0.00	587.30	232.00	595.07	0.00	595.10	7.42	1.65	187.75	85.16
12126.000	165.00	0.00	0.00	587.30	236.00	595.09	0.00	595.11	7.39	1.65	190.09	86.82
12126.000	165.00	0.00	0.00	587.30	242.00	595.11	0.00	595.14	7.18	1.63	194.96	90.32
12127.000	19.00	594.20	592.30	587.30	230.00	595.08	0.00	595.11	7.25	1.63	188.11	85.42
12127.000	19.00	594.20	592.30	587.30	232.00	595.09	0.00	595.12	7.22	1.63	189.42	86.34
12127.000	19.00	594.20	592.30	587.30	236.00	595.10	0.00	595.13	7.17	1.63	191.98	88.16
12127.000	19.00	594.20	592.30	587.30	242.00	595.13	0.00	595.15	7.02	1.61	196.34	91.32
12355.000	180.00	0.00	0.00	587.50	230.00	595.15	0.00	595.53	88.83	4.94	46.60	24.40
12355.000	180.00	0.00	0.00	587.50	232.00	595.15	0.00	595.54	90.29	4.98	46.62	24.42
12355.000	180.00	0.00	0.00	587.50	236.00	595.16	0.00	595.56	93.26	5.06	46.65	24.44
12355.000	180.00	0.00	0.00	587.50	242.00	595.17	0.00	595.59	97.77	5.18	46.71	24.47
12356.000	100.00	0.00	0.00	587.50	200.00	595.99	0.00	596.22	51.95	3.85	51.99	27.75
12356.000	100.00	0.00	0.00	587.50	200.00	596.01	0.00	596.24	51.72	3.84	52.09	27.81
12356.000	100.00	0.00	0.00	587.50	200.00	596.04	0.00	596.27	51.27	3.82	52.29	27.93
12356.000	100.00	0.00	0.00	587.50	200.00	596.09	0.00	596.31	50.60	3.80	52.59	28.12
12357.000	97.00	596.50	592.30	587.50	200.00	596.50	0.00	596.70	45.20	3.62	55.20	29.75
12357.000	97.00	596.50	592.30	587.50	200.00	596.50	0.00	596.70	44.88	3.61	57.21	29.85
12357.000	97.00	596.50	592.30	587.50	200.00	596.50	0.00	596.71	45.22	3.62	55.19	29.74
12357.000	97.00	596.50	592.30	587.50	200.00	596.51	0.00	596.71	44.71	3.61	58.14	29.91
12505.000	100.00	0.00	0.00	587.40	200.00	596.73	0.00	596.73	.34	.49	470.07	343.04
12505.000	100.00	0.00	0.00	587.40	200.00	596.73	0.00	596.73	.34	.49	470.55	343.57
12505.000	100.00	0.00	0.00	587.40	200.00	596.73	0.00	596.74	.34	.49	471.61	344.75
12505.000	100.00	0.00	0.00	587.40	200.00	596.74	0.00	596.74	.33	.49	473.12	346.44
12705.000	80.00	0.00	0.00	587.80	200.00	596.73	0.00	596.74	1.62	.73	354.31	156.96
12705.000	80.00	0.00	0.00	587.80	200.00	596.73	0.00	596.74	1.61	.73	354.94	157.41
12705.000	80.00	0.00	0.00	587.80	200.00	596.74	0.00	596.74	1.59	.73	356.34	158.40
12705.000	80.00	0.00	0.00	587.80	200.00	596.74	0.00	596.75	1.57	.72	358.34	159.81
12706.000	100.00	0.00	0.00	587.80	200.00	596.75	0.00	596.75	1.58	.72	357.23	159.02
12706.000	100.00	0.00	0.00	587.80	200.00	596.75	0.00	596.76	1.57	.72	357.84	159.46
12706.000	100.00	0.00	0.00	587.80	200.00	596.75	0.00	596.76	1.55	.72	359.20	160.43
12706.000	100.00	0.00	0.00	587.80	200.00	596.76	0.00	596.77	1.53	.71	361.16	161.82
12707.000	62.00	595.70	594.30	587.80	200.00	596.77	0.00	596.77	1.88	.79	289.63	145.89
12707.000	62.00	595.70	594.30	587.80	200.00	596.77	0.00	596.78	1.87	.79	290.08	146.26
12707.000	62.00	595.70	594.30	587.80	200.00	596.77	0.00	596.78	1.85	.78	291.09	147.09
12707.000	62.00	595.70	594.30	587.80	200.00	596.78	0.00	596.79	1.82	.78	292.53	148.27
12905.000	60.00	0.00	0.00	588.20	200.00	596.78	0.00	596.78	.42	.36	536.33	309.79
12905.000	60.00	0.00	0.00	588.20	200.00	596.78	0.00	596.78	.42	.36	536.92	310.36
12905.000	60.00	0.00	0.00	588.20	200.00	596.78	0.00	596.78	.41	.36	538.23	311.61
12905.000	60.00	0.00	0.00	588.20	200.00	596.79	0.00	596.79	.41	.35	540.09	313.42

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
12906.000	100.00	0.00	0.00	588.20	200.00	596.78	0.00	596.78	.55	.41	418.32	270.52
12906.000	100.00	0.00	0.00	588.20	200.00	596.78	0.00	596.79	.54	.41	418.76	271.00
12906.000	100.00	0.00	0.00	588.20	200.00	596.79	0.00	596.79	.54	.41	419.73	272.05
12906.000	100.00	0.00	0.00	588.20	200.00	596.79	0.00	596.80	.53	.41	421.12	273.57
12907.000	20.00	595.10	593.70	588.20	200.00	596.80	0.00	596.80	.53	.41	421.62	274.12
12907.000	20.00	595.10	593.70	588.20	200.00	596.80	0.00	596.80	.53	.41	422.07	274.60
12907.000	20.00	595.10	593.70	588.20	200.00	596.80	0.00	596.81	.53	.40	423.05	275.68

12907.000	20.00	595.10	593.70	588.20	200.00	596.81	0.00	596.81	.52	.40	424.46	277.22
13055.000	50.00	0.00	0.00	588.90	200.00	596.80	0.00	596.81	1.20	.56	389.92	182.76
13055.000	50.00	0.00	0.00	588.90	200.00	596.80	0.00	596.81	1.19	.55	390.51	183.21
13055.000	50.00	0.00	0.00	588.90	200.00	596.81	0.00	596.81	1.18	.55	391.80	184.21
13055.000	50.00	0.00	0.00	588.90	200.00	596.81	0.00	596.82	1.16	.55	393.65	185.65
13056.000	80.00	0.00	0.00	588.90	200.00	596.81	0.00	596.82	1.18	.55	392.10	184.45
13056.000	80.00	0.00	0.00	588.90	200.00	596.81	0.00	596.82	1.17	.55	392.68	184.89
13056.000	80.00	0.00	0.00	588.90	200.00	596.82	0.00	596.82	1.16	.55	393.95	185.88
13056.000	80.00	0.00	0.00	588.90	200.00	596.82	0.00	596.83	1.14	.54	395.77	187.31
13057.000	23.00	595.60	593.90	588.90	200.00	596.83	0.00	596.84	1.09	.53	400.77	191.23
13057.000	23.00	595.60	593.90	588.90	200.00	596.83	0.00	596.84	1.09	.53	401.34	191.68
13057.000	23.00	595.60	593.90	588.90	200.00	596.84	0.00	596.84	1.08	.53	402.59	192.67
13057.000	23.00	595.60	593.90	588.90	200.00	596.84	0.00	596.85	1.06	.53	404.38	194.09
13205.000	40.00	0.00	0.00	588.60	200.00	596.83	0.00	596.85	3.37	1.56	248.60	108.92
13205.000	40.00	0.00	0.00	588.60	200.00	596.83	0.00	596.85	3.35	1.55	249.07	109.20
13205.000	40.00	0.00	0.00	588.60	200.00	596.84	0.00	596.85	3.32	1.54	250.10	109.83
13205.000	40.00	0.00	0.00	588.60	200.00	596.84	0.00	596.86	3.26	1.53	251.59	110.73
13206.000	60.00	0.00	0.00	589.10	200.00	596.76	0.00	596.94	22.14	3.78	98.18	42.51
13206.000	60.00	0.00	0.00	589.10	200.00	596.77	0.00	596.94	21.92	3.76	98.83	42.72
13206.000	60.00	0.00	0.00	589.10	200.00	596.77	0.00	596.94	21.46	3.72	100.27	43.18
13206.000	60.00	0.00	0.00	589.10	200.00	596.78	0.00	596.94	20.82	3.67	102.29	43.84
13207.000	22.50	595.80	594.40	589.10	200.00	596.87	0.00	596.94	23.28	2.64	133.02	41.45
13207.000	22.50	595.80	594.40	589.10	200.00	596.87	0.00	596.94	23.23	2.63	133.14	41.49
13207.000	22.50	595.80	594.40	589.10	200.00	596.87	0.00	596.94	23.09	2.63	133.51	41.62
13207.000	22.50	595.80	594.40	589.10	200.00	596.88	0.00	596.94	22.81	2.61	134.21	41.88
13505.000	135.00	0.00	0.00	588.90	200.00	596.98	0.00	596.99	1.22	.56	390.22	181.24
13505.000	135.00	0.00	0.00	588.90	200.00	596.98	0.00	596.99	1.22	.56	390.47	181.44
13505.000	135.00	0.00	0.00	588.90	200.00	596.98	0.00	596.99	1.21	.55	391.04	181.87
13505.000	135.00	0.00	0.00	588.90	200.00	596.99	0.00	596.99	1.20	.55	391.87	182.51
13506.000	100.00	0.00	0.00	588.90	200.00	596.99	0.00	597.00	2.21	.75	275.11	134.63
13506.000	100.00	0.00	0.00	588.90	200.00	596.99	0.00	597.00	2.20	.75	275.27	134.76
13506.000	100.00	0.00	0.00	588.90	200.00	597.00	0.00	597.01	2.19	.75	275.63	135.04
13506.000	100.00	0.00	0.00	588.90	200.00	597.00	0.00	597.01	2.18	.74	276.15	135.47

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
13507.000	70.00	595.80	594.90	588.90	200.00	597.01	0.00	597.02	1.27	.57	356.93	177.64
13507.000	70.00	595.80	594.90	588.90	200.00	597.01	0.00	597.02	1.27	.57	357.13	177.81
13507.000	70.00	595.80	594.90	588.90	200.00	597.02	0.00	597.02	1.26	.57	357.60	178.19
13507.000	70.00	595.80	594.90	588.90	200.00	597.02	0.00	597.02	1.25	.57	358.27	178.76
13705.000	30.00	0.00	0.00	589.80	200.00	597.00	0.00	597.04	21.05	2.16	139.45	43.59
13705.000	30.00	0.00	0.00	589.80	200.00	597.00	0.00	597.04	20.99	2.15	139.64	43.66
13705.000	30.00	0.00	0.00	589.80	200.00	597.00	0.00	597.04	20.85	2.15	140.05	43.80
13705.000	30.00	0.00	0.00	589.80	200.00	597.00	0.00	597.05	20.64	2.14	140.66	44.02
13706.000	50.00	0.00	0.00	589.80	200.00	596.90	0.00	597.42	180.94	5.81	34.45	14.87
13706.000	50.00	0.00	0.00	589.80	200.00	596.90	0.00	597.42	180.92	5.81	34.45	14.87
13706.000	50.00	0.00	0.00	589.80	200.00	596.90	0.00	597.42	180.88	5.80	34.45	14.87
13706.000	50.00	0.00	0.00	589.80	200.00	596.90	0.00	597.42	180.82	5.80	34.46	14.87
13707.000	48.00	597.40	597.40	589.80	200.00	597.09	0.00	597.59	168.19	5.63	35.54	15.42
13707.000	48.00	597.40	597.40	589.80	200.00	597.09	0.00	597.59	168.18	5.63	35.54	15.42
13707.000	48.00	597.40	597.40	589.80	200.00	597.09	0.00	597.59	168.18	5.63	35.54	15.42
13707.000	48.00	597.40	597.40	589.80	200.00	597.09	0.00	597.59	168.16	5.63	35.54	15.42
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.19	.35	509.75	457.43
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.19	.35	509.76	457.44
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.19	.35	509.78	457.46
13905.000	55.00	0.00	0.00	589.90	200.00	597.64	0.00	597.64	.19	.35	509.81	457.49
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.24	.38	471.58	411.85
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.24	.38	471.58	411.86
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.24	.38	471.60	411.88
13906.000	100.00	0.00	0.00	590.10	200.00	597.64	0.00	597.64	.24	.38	471.63	411.91
13907.000	40.00	598.10	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	627.29	593.56
13907.000	40.00	598.10	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	627.29	593.56
13907.000	40.00	598.10	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	627.30	593.57

13901.000	40.00	598.13	595.70	590.10	200.00	598.29	0.00	598.29	.11	.28	827.30	393.58
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.19	.35	842.21	464.13
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.19	.35	842.22	464.13
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.19	.35	842.22	464.14
14105.000	100.00	0.00	0.00	590.20	200.00	598.29	0.00	598.29	.19	.35	842.24	464.15
15000.000	800.00	0.00	0.00	590.20	200.00	598.31	0.00	598.31	.18	.35	848.31	469.29
15000.000	800.00	0.00	0.00	590.20	200.00	598.31	0.00	598.31	.18	.35	848.32	469.29
15000.000	800.00	0.00	0.00	590.20	200.00	598.31	0.00	598.31	.18	.35	848.32	469.30
15000.000	800.00	0.00	0.00	590.20	200.00	598.31	0.00	598.31	.18	.35	848.33	469.31

KOEHLER DRAIN

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	7025.000	230.00	582.32	0.00	0.00	2.82	7.00	0.00
*	7025.000	232.00	582.34	.02	0.00	2.84	7.00	0.00
*	7025.000	236.00	582.38	.04	0.00	2.88	7.00	0.00
*	7025.000	242.00	582.44	.06	0.00	2.94	7.00	0.00
	7027.000	230.00	582.37	0.00	.05	0.00	7.00	1.00
	7027.000	232.00	582.39	.02	.05	0.00	7.00	1.00
	7027.000	236.00	582.43	.04	.05	0.00	7.00	1.00
	7027.000	242.00	582.48	.05	.04	0.00	7.00	1.00
	7028.000	230.00	583.89	0.00	1.51	0.00	7.00	23.00
	7028.000	232.00	583.91	.03	1.52	0.00	7.00	23.00
	7028.000	236.00	583.96	.05	1.54	0.00	7.00	23.00
	7028.000	242.00	584.04	.08	1.56	0.00	7.00	23.00
	7029.000	230.00	583.91	0.00	.02	0.00	7.00	1.00
	7029.000	232.00	583.94	.03	.03	0.00	7.00	1.00
	7029.000	236.00	583.99	.05	.03	0.00	7.00	1.00
	7029.000	242.00	584.06	.08	.03	0.00	7.00	1.00
	7524.000	230.00	584.74	0.00	.83	0.00	7.00	50.00
	7524.000	232.00	584.77	.03	.83	0.00	7.00	50.00
	7524.000	236.00	584.83	.06	.84	0.00	7.00	50.00
	7524.000	242.00	584.92	.09	.85	0.00	7.00	50.00
	7525.000	230.00	585.98	0.00	1.24	0.00	31.39	470.00
	7525.000	232.00	586.01	.03	1.25	0.00	31.51	470.00
	7525.000	236.00	586.08	.06	1.25	0.00	31.76	470.00
	7525.000	242.00	586.17	.09	1.26	0.00	32.12	470.00
	7655.000	230.00	585.88	0.00	-.10	0.00	7.00	130.00
	7655.000	232.00	585.91	.03	-.11	0.00	7.00	130.00
	7655.000	236.00	585.96	.06	-.11	0.00	7.00	130.00
	7655.000	242.00	586.05	.08	-.12	0.00	7.00	130.00
	7657.000	230.00	585.75	0.00	-.13	0.00	7.00	1.00
	7657.000	232.00	585.77	.02	-.14	0.00	7.00	1.00
	7657.000	236.00	585.82	.05	-.15	0.00	7.00	1.00
	7657.000	242.00	585.89	.07	-.16	0.00	7.00	1.00
	7658.000	230.00	586.01	0.00	.26	0.00	7.00	21.00
	7658.000	232.00	586.04	.03	.27	0.00	7.00	21.00
	7658.000	236.00	586.11	.07	.29	0.00	7.00	21.00
	7658.000	242.00	586.21	.10	.32	0.00	7.00	21.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
7659.000	230.00	586.01	0.00	.00	0.00	7.00	1.00
7659.000	232.00	586.05	.03	.00	0.00	7.00	1.00
7659.000	236.00	586.11	.07	.00	0.00	7.00	1.00
7659.000	242.00	586.21	.10	.00	0.00	7.00	1.00
7765.000	230.00	586.98	0.00	.97	0.00	27.09	100.00
7765.000	232.00	587.01	.03	.97	0.00	27.24	100.00
7765.000	236.00	587.0	.06	.97	0.00	27.53	100.00

7765.000	242.00	587.18	.10	.97	0.00	27.97	100.00
9655.000	230.00	587.09	0.00	.11	0.00	6.00	100.00
9655.000	232.00	587.10	.01	.09	0.00	6.00	100.00
9655.000	236.00	587.13	.03	.05	0.00	6.00	100.00
9655.000	242.00	587.17	.04	-.00	0.00	6.00	100.00
9656.000	230.00	588.31	0.00	1.22	0.00	6.00	60.00
9656.000	232.00	588.36	.05	1.25	0.00	6.00	60.00
9656.000	236.00	588.45	.10	1.32	0.00	6.00	60.00
9656.000	242.00	588.61	.15	1.43	0.00	6.00	60.00
9660.000	230.00	588.35	0.00	.04	0.00	6.00	1.00
9660.000	232.00	588.40	.05	.04	0.00	6.00	1.00
9660.000	236.00	588.49	.10	.04	0.00	6.00	1.00
9660.000	242.00	588.65	.15	.04	0.00	6.00	1.00
9875.000	230.00	588.90	0.00	.55	0.00	7.50	180.00
9875.000	232.00	588.91	.01	.51	0.00	7.50	180.00
9875.000	236.00	588.92	.01	.42	0.00	7.50	180.00
9875.000	242.00	588.93	.01	.28	0.00	7.50	180.00
9925.000	230.00	589.58	0.00	.68	0.00	300.00	100.00
9925.000	232.00	589.59	.01	.69	0.00	300.00	100.00
9925.000	236.00	589.62	.03	.70	0.00	300.00	100.00
9925.000	242.00	589.66	.04	.73	0.00	300.00	100.00
10675.000	230.00	589.94	0.00	.36	0.00	300.00	570.00
10675.000	232.00	589.94	.01	.35	0.00	300.00	570.00
10675.000	236.00	589.96	.02	.34	0.00	300.00	570.00
10675.000	242.00	589.99	.03	.33	0.00	300.00	570.00
10676.000	230.00	589.75	0.00	-.18	0.00	7.00	100.00
10676.000	232.00	589.76	.00	-.19	0.00	7.00	100.00
10676.000	236.00	589.76	.00	-.20	0.00	7.00	100.00
10676.000	242.00	589.76	.00	-.23	0.00	7.00	100.00
10677.000	230.00	589.67	0.00	-.09	0.00	7.00	1.00
10677.000	232.00	589.67	-.00	-.09	0.00	7.00	1.00
10677.000	236.00	589.67	-.00	-.09	0.00	7.00	1.00
10677.000	242.00	589.66	-.00	-.10	0.00	7.00	1.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
10678.000	230.00	589.70	0.00	.04	0.00	7.00	22.50
10678.000	232.00	589.70	.00	.04	0.00	7.00	22.50
10678.000	236.00	589.70	.00	.04	0.00	7.00	22.50
10678.000	242.00	589.70	-.00	.04	0.00	7.00	22.50
10679.000	230.00	589.87	0.00	.16	0.00	7.00	1.00
10679.000	232.00	589.87	.00	.17	0.00	7.00	1.00
10679.000	236.00	589.88	.01	.18	0.00	7.00	1.00
10679.000	242.00	589.89	.01	.19	0.00	7.00	1.00
10785.000	230.00	590.86	0.00	.99	0.00	24.42	100.00
10785.000	232.00	590.87	.02	1.00	0.00	24.48	100.00
10785.000	236.00	590.91	.03	1.03	0.00	24.61	100.00
10785.000	242.00	590.96	.05	1.07	0.00	24.80	100.00
11725.000	230.00	592.66	0.00	1.80	0.00	25.58	790.00
11725.000	232.00	592.69	.02	1.81	0.00	25.64	790.00
11725.000	236.00	592.72	.03	1.81	0.00	25.84	790.00
11725.000	242.00	592.78	.06	1.82	0.00	26.06	790.00
11726.000	230.00	592.81	0.00	.15	0.00	7.00	100.00
11726.000	232.00	592.83	.02	.15	0.00	7.00	100.00
11726.000	236.00	592.86	.03	.14	0.00	7.00	100.00
11726.000	242.00	592.91	.06	.13	0.00	7.00	100.00
11728.000	230.00	593.27	0.00	.46	0.00	7.00	38.00
11728.000	232.00	593.29	.03	.46	0.00	7.00	38.00
11728.000	236.00	593.33	.04	.47	0.00	7.00	38.00
11728.000	242.00	593.39	.06	.48	0.00	7.00	38.00

11925.000	230.00	594.67	0.00	1.41	0.00	250.00	140.00
11925.000	232.00	594.69	.02	1.40	0.00	250.00	140.00
11925.000	236.00	594.72	.03	1.39	0.00	250.00	140.00
11925.000	242.00	594.77	.05	1.38	0.00	250.00	140.00
11926.000	230.00	594.86	0.00	.19	0.00	300.00	100.00
11926.000	232.00	594.87	.01	.18	0.00	300.00	100.00
11926.000	236.00	594.88	.02	.17	0.00	300.00	100.00
11926.000	242.00	594.92	.03	.15	0.00	300.00	100.00
11927.000	230.00	594.87	0.00	.01	0.00	300.00	38.00
11927.000	232.00	594.88	.01	.01	0.00	300.00	38.00
11927.000	236.00	594.90	.02	.02	0.00	300.00	38.00
11927.000	242.00	594.93	.03	.02	0.00	300.00	38.00
12125.000	230.00	594.94	0.00	.07	0.00	250.00	75.00
12125.000	232.00	594.95	.01	.06	0.00	250.00	75.00
12125.000	236.00	594.96	.02	.06	0.00	250.00	75.00
12125.000	242.00	594.99	.03	.06	0.00	250.00	75.00

SECNO	Q	CWSEL	DIFWSP	OIFWSX	DIFKWS	TOPWID	XLCH
12126.000	230.00	595.07	0.00	.13	0.00	178.00	165.00
12126.000	232.00	595.07	.01	.13	0.00	178.00	165.00
12126.000	236.00	595.09	.01	.13	0.00	178.00	165.00
12126.000	242.00	595.11	.02	.12	0.00	178.00	165.00
12127.000	230.00	595.08	0.00	.02	0.00	178.00	19.00
12127.000	232.00	595.09	.01	.02	0.00	178.00	19.00
12127.000	236.00	595.10	.01	.02	0.00	178.00	19.00
12127.000	242.00	595.13	.02	.02	0.00	178.00	19.00
12355.000	230.00	595.15	0.00	.07	0.00	6.40	180.00
12355.000	232.00	595.15	.00	.07	0.00	6.40	180.00
12355.000	236.00	595.16	.01	.06	0.00	6.40	180.00
12355.000	242.00	595.17	.01	.04	0.00	6.40	180.00
12356.000	200.00	595.99	0.00	.84	0.00	6.40	100.00
12356.000	200.00	596.01	.02	.86	0.00	6.40	100.00
12356.000	200.00	596.04	.03	.88	0.00	6.40	100.00
12356.000	200.00	596.09	.05	.92	0.00	6.40	100.00
12357.000	200.00	596.50	0.00	.50	0.00	6.40	97.00
12357.000	200.00	596.50	.00	.49	0.00	228.00	97.00
12357.000	200.00	596.50	.00	.46	0.00	6.40	97.00
12357.000	200.00	596.51	.01	.42	0.00	228.00	97.00
12505.000	200.00	596.73	0.00	.23	0.00	226.00	100.00
12505.000	200.00	596.73	.00	.23	0.00	226.00	100.00
12505.000	200.00	596.73	.00	.23	0.00	226.00	100.00
12505.000	200.00	596.74	.01	.23	0.00	226.00	100.00
12705.000	200.00	596.73	0.00	.00	0.00	300.00	80.00
12705.000	200.00	596.73	.00	.00	0.00	300.00	80.00
12705.000	200.00	596.74	.00	.00	0.00	300.00	80.00
12705.000	200.00	596.74	.01	.00	0.00	300.00	80.00
12706.000	200.00	596.75	0.00	.02	0.00	300.00	100.00
12706.000	200.00	596.75	.00	.02	0.00	300.00	100.00
12706.000	200.00	596.75	.00	.02	0.00	300.00	100.00
12706.000	200.00	596.76	.01	.02	0.00	300.00	100.00
12707.000	200.00	596.77	0.00	.02	0.00	228.00	62.00
12707.000	200.00	596.77	.00	.02	0.00	228.00	62.00
12707.000	200.00	596.77	.00	.02	0.00	228.00	62.00
12707.000	200.00	596.78	.01	.02	0.00	228.00	62.00
12905.000	200.00	596.78	0.00	.01	0.00	300.00	60.00
12905.000	200.00	596.78	.00	.01	0.00	300.00	60.00
12905.000	200.00	596.78	.00	.01	0.00	300.00	60.00
12905.000	200.00	596.79	.01	.01	0.00	300.00	60.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
12906.000	200.00	596.78	0.00	.00	0.00	228.00	100.00
12906.000	200.00	596.78	.00	.00	0.00	228.00	100.00
12906.000	200.00	596.79	.00	.00	0.00	228.00	100.00
12906.000	200.00	596.79	.01	.00	0.00	228.00	100.00
12907.000	200.00	596.80	0.00	.02	0.00	228.00	20.00
12907.000	200.00	596.80	.00	.02	0.00	228.00	20.00
12907.000	200.00	596.80	.00	.02	0.00	228.00	20.00
12907.000	200.00	596.81	.01	.02	0.00	228.00	20.00
13055.000	200.00	596.80	0.00	.00	0.00	300.00	50.00
13055.000	200.00	596.80	.00	.00	0.00	300.00	50.00
13055.000	200.00	596.81	.00	.00	0.00	300.00	50.00
13055.000	200.00	596.81	.01	.00	0.00	300.00	50.00
13056.000	200.00	596.81	0.00	.01	0.00	300.00	80.00
13056.000	200.00	596.81	.00	.01	0.00	300.00	80.00
13056.000	200.00	596.82	.00	.01	0.00	300.00	80.00
13056.000	200.00	596.82	.01	.01	0.00	300.00	80.00
13057.000	200.00	596.83	0.00	.02	0.00	300.00	23.00
13057.000	200.00	596.83	.00	.02	0.00	300.00	23.00
13057.000	200.00	596.84	.00	.02	0.00	300.00	23.00
13057.000	200.00	596.84	.01	.02	0.00	300.00	23.00
13205.000	200.00	596.83	0.00	-.00	0.00	250.00	40.00
13205.000	200.00	596.83	.00	-.00	0.00	250.00	40.00
13205.000	200.00	596.84	.00	-.00	0.00	250.00	40.00
13205.000	200.00	596.84	.01	-.00	0.00	250.00	40.00
13206.000	200.00	596.76	0.00	-.07	0.00	220.00	60.00
13206.000	200.00	596.77	.00	-.07	0.00	220.00	60.00
13206.000	200.00	596.77	.01	-.06	0.00	220.00	60.00
13206.000	200.00	596.78	.01	-.06	0.00	220.00	60.00
13207.000	200.00	596.87	0.00	.11	0.00	250.00	22.50
13207.000	200.00	596.87	.00	.10	0.00	250.00	22.50
13207.000	200.00	596.87	.00	.10	0.00	250.00	22.50
13207.000	200.00	596.88	.00	.09	0.00	250.00	22.50
13505.000	200.00	596.98	0.00	.11	0.00	300.00	135.00
13505.000	200.00	596.98	.00	.11	0.00	300.00	135.00
13505.000	200.00	596.98	.00	.11	0.00	300.00	135.00
13505.000	200.00	596.99	.00	.11	0.00	300.00	135.00
13506.000	200.00	596.99	0.00	.01	0.00	200.00	100.00
13506.000	200.00	596.99	.00	.01	0.00	200.00	100.00
13506.000	200.00	597.00	.00	.01	0.00	200.00	100.00
13506.000	200.00	597.00	.00	.01	0.00	200.00	100.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
13507.000	200.00	597.01	0.00	-.02	0.00	263.00	70.00
13507.000	200.00	597.01	.00	.02	0.00	263.00	70.00
13507.000	200.00	597.02	.00	.02	0.00	263.00	70.00
13507.000	200.00	597.02	.00	.02	0.00	263.00	70.00
13705.000	200.00	597.00	0.00	-.02	0.00	215.13	30.00
13705.000	200.00	597.00	.00	-.02	0.00	215.30	30.00
13705.000	200.00	597.00	.00	-.02	0.00	215.71	30.00
13705.000	200.00	597.00	.00	-.02	0.00	216.30	30.00
13706.000	200.00	596.90	0.00	-.10	0.00	5.50	50.00
13706.000	200.00	596.90	.00	-.10	0.00	5.50	50.00
13706.000	200.00	596.90	.00	-.10	0.00	5.50	50.00
13706.000	200.00	596.90	.00	-.11	0.00	5.50	50.00
13707.000	200.00	597.09	0.00	.20	0.00	5.50	48.00
13707.000	200.00	597.09	.00	.20	0.00	5.50	48.00
13707.000	200.00	597.09	.00	.20	0.00	5.50	48.00
13707.000	200.00	597.09	.00	.20	0.00	5.50	48.00
13905.000	200.00	597.64	0.00	.54	0.00	196.56	55.00
13905.000	200.00	597.64	.00	.54	0.00	196.56	55.00
13905.000	200.00	597.64	.00	.54	0.00	196.56	55.00
13905.000	200.00	597.64	.00	.54	0.00	196.57	55.00

13906.000	200.00	597.64	0.00	.00	0.00	188.89	100.00
13906.000	200.00	597.64	.00	.00	0.00	188.90	100.00
13906.000	200.00	597.64	.00	.00	0.00	188.90	100.00
13906.000	200.00	597.64	.00	.00	0.00	188.90	100.00
13907.000	200.00	598.29	0.00	.65	0.00	292.00	40.00
13907.000	200.00	598.29	.00	.65	0.00	292.00	40.00
13907.000	200.00	598.29	.00	.65	0.00	292.00	40.00
13907.000	200.00	598.29	.00	.65	0.00	292.00	40.00
14105.000	200.00	598.29	0.00	.00	0.00	500.00	100.00
14105.000	200.00	598.29	.00	.00	0.00	500.00	100.00
14105.000	200.00	598.29	.00	.00	0.00	500.00	100.00
14105.000	200.00	598.29	.00	.00	0.00	500.00	100.00
15000.000	200.00	598.31	0.00	.01	0.00	500.00	800.00
15000.000	200.00	598.31	.00	.01	0.00	500.00	800.00
15000.000	200.00	598.31	.00	.01	0.00	500.00	800.00
15000.000	200.00	598.31	.00	.01	0.00	500.00	800.00

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO  7025.000  PROFILE  1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  7025.000  PROFILE  2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  7025.000  PROFILE  3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  7025.000  PROFILE  4  CRITICAL DEPTH ASSUMED
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THIS RUN EXECUTED 82/11/17. 10.54.57.

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*****************************************************
HEC2 RELEASE DATED NOV 76 UPDATED MARC 1982
ERROR CORR -  01,02,03,04,05
MODIFICATION -  50,51,52,53,54,55
*****************************************************
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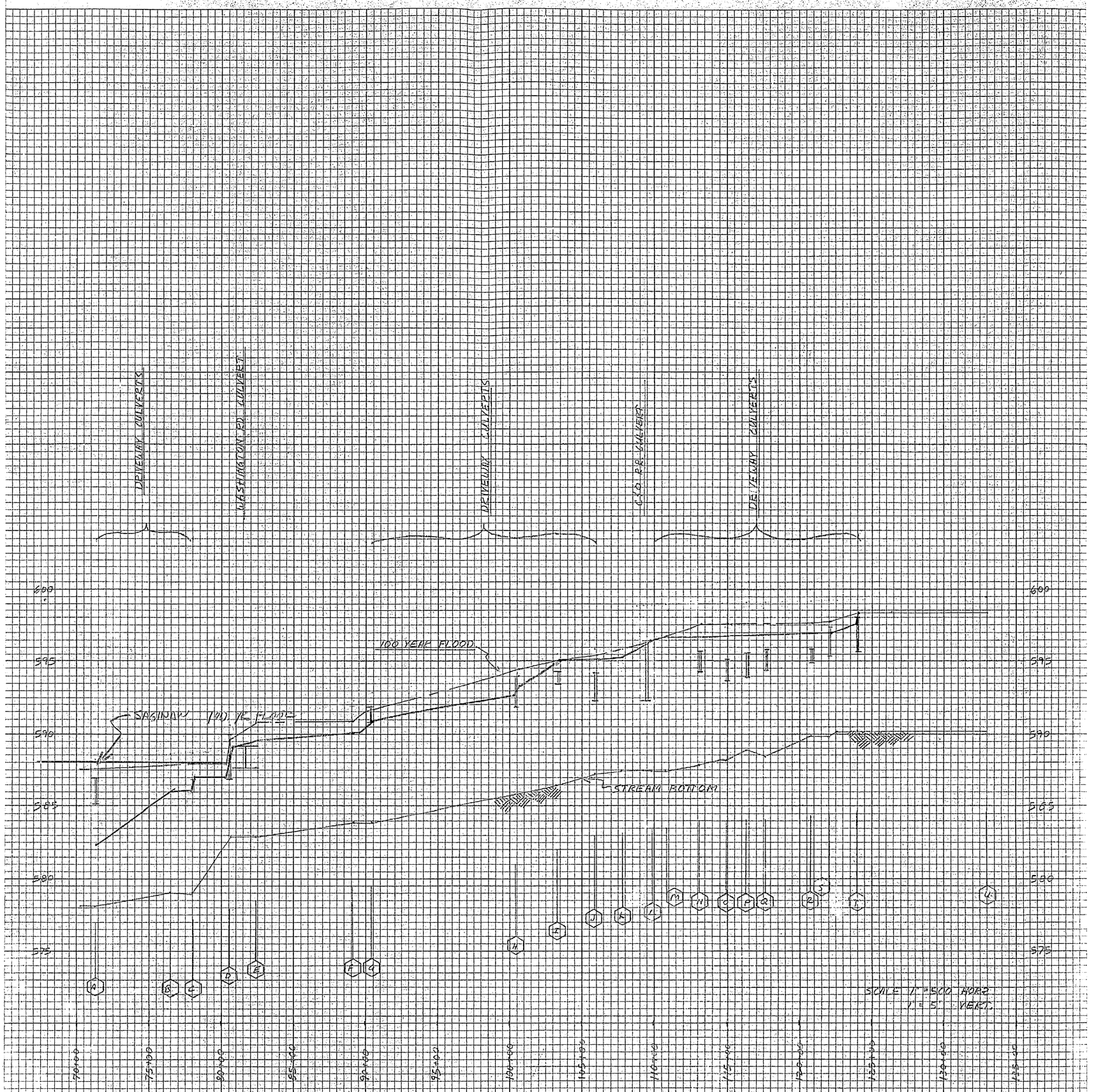
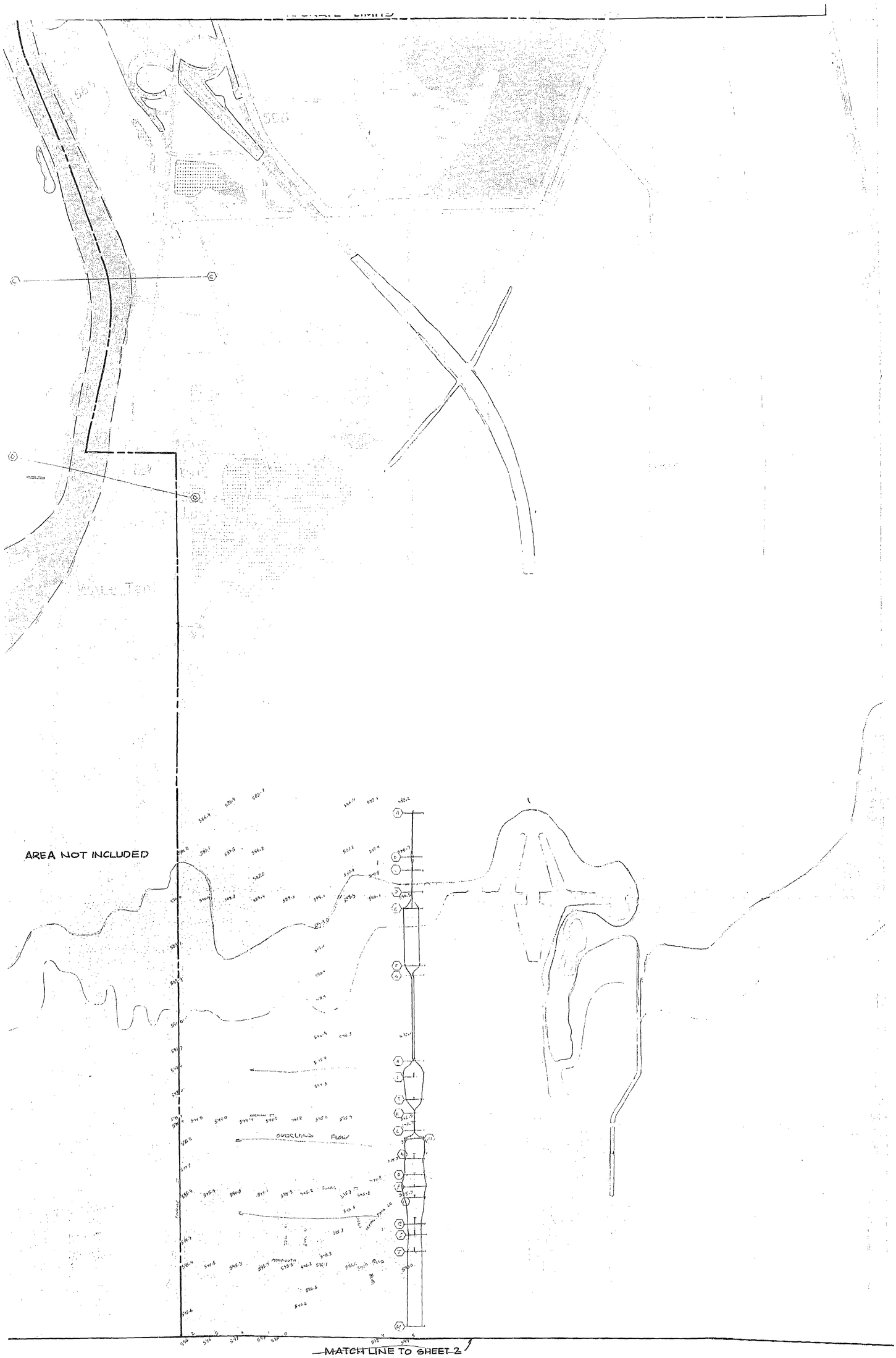
MOORE BUSINESS FORMS INC 27



BUENA VISTA TWP. KOEHER DRAIN FLOOD STUDY

10 X 10 TO THE INCH
KEUFFEL & ESSER CO.
D IN U.S.A. 751001

~~5/13/82~~
REV. 11/17/82



100 YR FLOOD

FLOODWAY

SHEET 1 OF 2

N

G.L.A. ASSOCIATES INC.

BUENA VISTA TWP.
SAGINAW COUNTY, MICHIGAN

REV. 11/19/02

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: CHESANING, VILLAGE

3) WATERCOURSE: SHIAWASSEE RIVER

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************
```

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	0.0	0.0	0.0	0.	609.100	0.0

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

ACME BUSINESS FORMS INC. 27

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*PROF 2

CCHV     0.100 CEHV     0.300
*SECNO 107570.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS       650.0     1950.0  TYPE      1  TARGET     -650.000

         .A  MANUFACTURED

107570.00     13.90    609.10      0.0    609.10    609.56      0.46      0.0       0.0    605.00
    8420.       88.     8332.       0.       59.     1526.        0.       0.        0.    612.00
      0.0      1.50      5.46      0.0     0.060     0.045     0.040       0.0    595.20   1721.30
 0.001419   107570.   107570.   107570.         0         0         0     -0.00    191.74   1913.04

*SECNO 109970.000

3470 ENCROACHMENT STATIONS         0.0     1148.0  TYPE      1  TARGET     1147.999

         B

109970.00     15.45    612.65      0.0       0.0    613.50      0.85      3.83      0.12    608.30
    8420.       58.     8165.     197.       34.     1089.       61.       75.        8.    606.50
      0.09      1.73      7.50      3.25    0.060     0.045     0.040     0.045    597.20   1023.54
 0.001822     1600.     2400.     2000.         2         0         0     -0.01    118.20   1141.74

*SECNO 111920.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS       295.0      930.0  TYPE      1  TARGET      635.000

         C   MANUFACTURED

111920.00     16.36    614.86      0.0    614.85    615.20      0.34      1.65      0.05    603.60
    8420.      125.     6842.     1453.      110.     1325.     1746.      158.       22.    611.20
      0.20      1.13      5.16      0.83    0.100     0.040     0.100     0.043    598.50    295.00
 0.000609     1450.     1700.     1600.         2         0         0     -0.02    635.00    930.00

*SECNO 111970.000

3470 ENCROACHMENT STATIONS       295.0      930.0  TYPE      1  TARGET      635.000

         D   DAM IN BACK OF FARMER PEET PACKING CO.

             CREST-602.8, REGARDED AS STEP DAM

111970.00     11.98    614.78      0.0    614.77    615.29      0.51      0.03      0.05    604.60
    8420.      196.     6714.     1511.      100.     1052.     1702.      161.       23.    611.20
      0.20      1.96      6.38      0.89    0.060     0.030     0.100     0.043    602.80    295.00
 0.000716       50.       50.       50.         2         0         0     -0.03    635.00    930.00

*SECNO 111971.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
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    Q          QLOB       QCH        Q.OB       ALOB       ACH        A..OB      VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

3470 ENCROACHMENT STATIONS        295.0      930.0  TYPE       1  TARGET       635.000
111971.00     11.98     614.78       0.0     614.77     615.29       0.51       0.00       0.00     604.60
    8420.       196.      6714.     1511.      100.      1051.      1702.       161.        23.     611.20
     0.20      1.96       6.39      0.89      0.060      0.030      0.100      0.043     602.80     295.00
 0.000716        1.         1.        1.          0          0          0      -0.03     635.00     930.00

*SECNO 112020.000

3470 ENCROACHMENT STATIONS        295.0      930.0  TYPE       1  TARGET       635.000

         E   MANUFACTURED

112020.00     16.52     615.02       0.0     615.01     615.34       0.32       0.03       0.02     603.60
    8420.       156.      6749.     1515.      113.      1341.      1829.       165.        24.     611.20
     0.20      1.38       5.03      0.83      0.080      0.040      0.100      0.043     598.50     295.00
 0.000571       50.        50.       50.          2          0          0      -0.02     635.00     930.00

*SECNO 112970.000

3470 ENCROACHMENT STATIONS       1280.0     1600.0  TYPE       1  TARGET       320.000

         F

112970.00     16.41     615.51       0.0     615.51     615.70       0.19       0.35       0.01     608.50
    8420.       247.      6933.     1240.      306.      1796.      1144.       229.        33.     606.40
     0.27      0.81       3.86      1.08      0.100      0.040      0.100      0.042     599.10    1280.00
 0.000332      700.       800.      950.          2          0          0      -0.01     320.00    1600.00

*SECNO 114370.000

3470 ENCROACHMENT STATIONS          0.0     1090.0  TYPE       1  TARGET      1089.999

         G

114370.00     15.02     615.92       0.0     615.83     615.98       0.06       0.27       0.01     604.90
    8420.       568.      3686.     4166.      468.      1478.      2973.       334.        49.     605.10
     0.44      1.21       2.49      1.40      0.060      0.045      0.035      0.043     600.90     125.70
 0.000172     1150.      1200.     1050.          2          0          0      -0.03     964.30    1090.00

*SECNO 116420.000

3470 ENCROACHMENT STATIONS          0.0      630.0  TYPE       1  TARGET       629.999

         H   MANUFACTURED

116420.00     14.54     616.24       0.0     616.16     616.37       0.14       0.37       0.02     604.90
    8420.       287.      5935.     2198.      284.      1772.      1187.       474.        71.     605.10
     0.60      1.01       3.35      1.85      0.060      0.045      0.035      0.046     601.70      93.23
 0.000311     2300.      2050.      900.          2          0          0      -0.04     536.77     630.00

*SECNO 117870.000
    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS   BANK ELEV
    Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST
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3470 ENCROACHMENT STATIONS       850.0     1767.0  TYPE       1  TARGET       917.000

        I

117870.00     14.70    616.70      0.0    616.63    616.82      0.13      0.45      0.00    606.60
    8420.      4596.     3824.       0.     2352.     1040.        0.      558.       86. 100000.00
     0.72       1.95      3.68      0.0     0.035     0.045     0.060     0.047    602.00    850.00
 0.000476       700.     1400.    1300.         2         0         0     -0.10    903.33   1753.33

*SECNO 119120.000

3470 ENCROACHMENT STATIONS       342.0      900.0  TYPE       1  TARGET       558.000

        J   MANUFACTURED

119120.00     15.12    617.12      0.0    617.04    617.32      0.20      0.47      0.02    606.50
    8420.       638.     6318.    1464.      497.     1577.      869.      630.      100.    612.00
     0.81       1.28      4.01     1.69     0.050     0.042     0.040     0.047    602.00    342.00
 0.000410       650.     1250.    1300.         0         0         0     -0.01    558.00    900.00

*SECNO 119870.000

3470 ENCROACHMENT STATIONS       880.0     1200.0  TYPE       1  TARGET       320.000

        K

119870.00     15.76    617.36      0.0    617.28    617.46      0.10      0.13      0.01    619.30
    8420.         0.     8240.     180.        0.     3218.      181.      677.      107.    608.00
     0.88       0.0      2.56     0.99     0.030     0.035     0.045     0.046    601.60    884.05
 0.000120       600.      650.     700.         2         0         0     -0.01    306.51   1190.56

*SECNO 119970.000

3470 ENCROACHMENT STATIONS       630.0      920.0  TYPE       1  TARGET       290.000

        L   DAM NE OF BROAD ST BRIDGE

            CREST-613.6

119970.00     10.89    617.29      0.0    617.21    617.51      0.23      0.02      0.04    617.70
    8420.         0.     8357.      63.        0.     2170.       90.      684.      108.    614.70
     0.89       0.0      3.85     0.70     0.030     0.030     0.050     0.046    606.40    648.00
 0.000295       100.      100.     100.         2         0         0     -0.03    272.00    920.00

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.0       1.50       2.50       0.0      107.00       0.0        0.10       0.0       606.40     606.40

*SECNO 119971.000
PRESSURE AND WEIR FLOW

 EGPRS       EGLWC       H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                      AREA
*********    617.51      0.0       8457.        1.         0.        11.       606.50     613.60
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3470 ENCROACHMENT STATIONS        630.0      920.0  TYPE       1  TARGET       290.000
119971.00     13.28    619.68      0.0     619.67    619.82      0.14      2.31       0.0    617.70
    8420.       13.     8196.      211.       20.     2666.      246.      684.      108.    614.70
     0.89      0.65      3.07     0.86      0.030     0.030     0.050     0.046    606.40    630.00
 0.000143        3.        3.       3.          2         0        16     -0.03    290.00    920.00


*SECNO 120070.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS        880.0     1170.0  TYPE       1  TARGET       290.000

         M   MANUFACTURED

120070.00     18.17    619.77      0.0     619.76    619.84      0.07      0.01       0.01    619.30
    8420.        0.     8216.      204.        0.     3817.      269.      692.      108.    608.00
     0.90      0.0      2.15     0.76      0.030     0.030     0.050     0.046    601.60    880.00
 0.000051      100.      100.     100.          2         0         0     -0.02    290.00   1170.00


CCHV     0.300 CEHV     0.500
*SECNO 120420.000

3265 DIVIDED FLOW


         N   BROAD ST BRIDGE, TR 629.1, LC 623.5, WIDTH 56, LENGTH 141

120420.00     16.31    619.61      0.0     619.60    620.10      0.49      0.05       0.21    629.10
    8420.        0.     8420.        0.        0.     1499.        0.      714.      110.    629.20
     0.92      0.0      5.62      0.0      0.030     0.040     0.03D     0.046    603.30    703.00
 0.001359      350.      350.     350.          2         0         0     -0.01    130.80    838.00


*SECNO 120421.000

3265 DIVIDED FLOW


3370 NORMAL BRIDGE,NRD   5 MIN ELTRD   626.00 MAX ELLC   629.10

120421.00     16.31    619.61      0.0     619.60    620.10      0.49      0.00       0.00    629.10
    8420.        0.     8420.        0.        0.     1499.        0.      714.      110.    629.20
     0.92      0.0      5.62      0.0      0.030     0.040     0.030     0.046    603.30    703.00
 0.001358        1.        1.       1.          0         0         0     -0.01    130.80    838.00


*SECNO 120422.000

3265 DIVIDED FLOW


3370 NORMAL BRIDGE,NRD   5 MIN ELTRD   626.00 MAX ELLC   629.10

120422.00     16.39    619.69      0.0     619.69    620.18      0.48      0.08       0.00    629.10
    8420.        0.     8420.        0.        0.     1509.        0.      716.      110.    629.20
     0.92      0.0      5.58      0.0      0.030     0.040     0.030     0.046    603.30    703.00
 0.001332       56.       56.      56.          0         0         0     -0.01    130.81    838.00
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*SECNO 120423.000

3265 DIVIDED FLOW

120423.00    16.40   619.70     0.0    619.69   620.18     0.48     0.00     0.00   629.10
    8420.       0.    8420.      0.        0.    1510.       0.     716.     110.    629.20
     0.92      0.0     5.57     0.0     0.030    0.040    0.030    0.046   603.30   703.00
 0.001329       1.       1.      1.         0        0        0    -0.01   130.81   838.00


*SECNO 120620.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS        0.0     1250.0  TYPE      1  TARGET      1249.999

        O   MANUFACTURED

120620.00    14.61   620.11     0.0    620.10   620.38     0.27     0.14     0.06   613.80
    8420.       4.    8187.    229.        7.    1933.     207.     725.     111.    616.00
     0.93      0.53     4.24    1.11     0.060    0.035    0.060    0.046   605.50  1002.76
 0.000431      200.     200.    200.         2        0        0    -0.02   247.24  1250.00


CCHV    0.100 CEHV    0.300
*SECNO 121520.000

3470 ENCROACHMENT STATIONS      544.0     1050.0  TYPE      1  TARGET       506.000

        P

121520.00    17.17   620.57     0.0    620.57   620.80     0.23     0.42     0.00   639.40
    8420.       0.    6834.   1586.        0.    1623.    1337.     776.     118.    617.50
     1.00      0.0     4.21    1.19     0.100    0.040    0.070    0.045   603.40   570.27
 0.000509     1000.     900.    800.         2        0        0    -0.01   479.73  1050.00


*SECNO 122420.000

3470 ENCROACHMENT STATIONS      300.0      755.0  TYPE      1  TARGET       455.000

        Q   MANUFACTURED

122420.00    17.11   620.91     0.0    620.89   621.03     0.12     0.22     0.01   613.60
    8420.     1988.    6432.      0.     1198.    2100.       0.     837.     127. 100000.00
     1.09      1.66     3.06     0.0     0.030    0.030    0.050    0.044   603.80   300.00
 0.000146     1000.     900.    600.         2        0        0    -0.04   455.00   755.00


*SECNO 124120.000

3470 ENCROACHMENT STATIONS      660.0     1800.0  TYPE      1  TARGET      1140.000

        R

124120.00    16.80   621.10     0.0    621.07   621.19     0.09     0.15     0.00   617.90
    8420.     5067.    3353.      0.     2877.    1087.       0.     892.     136.    639.10
     1.18      1.76     3.09     0.0     0.030    0.040    0.060    0.045   604.30   660.00
 0.000301      400.    1000.   1150.         2        0        0    -0.04  1094.18  1754.18
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*SECNO 1_55_0.000

3470 ENCROACHMENT STATIONS      700.0     1675.0  TYPE      1  TARGET      975.000

        S   MANUFACTURED

125520.00     15.34    621.44      0.0    621.41    621.57      0.12      0.37      0.01    613.70
    8420.     2208.     6212.       0.     1589.     1957.        0.      990.      160. 100000.00
     1.31      1.39      3.17      0.0     0.030     0.042     0.080     0.045    606.10    700.00
 0.000313      950.     1400.    1250.         2         0         0     -0.01    975.00   1675.00

*SECNO 126420.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      630.0     1608.0  TYPE      1  TARGET      978.000

        T

126420.00     13.72    621.82      0.0    621.75    622.07      0.25      0.46      0.04    618.70
    8420.     2835.     5585.       0.     1300.     1188.        0.     1051.      178. 100000.00
     1.37      2.18      4.70      0.0     0.030     0.045     0.060     0.045    608.10    630.00
 0.000980      800.      950.     950.         2         0         0     -0.01    978.00   1608.00
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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
107570.000	609.00	0.0	609.47	190.80	83.84	8336.16	0.0	-650.00	650.00	1750.00	1920.00	1950.00
107570.000	609.10	0.0	609.56	191.74	88.01	8331.99	0.0	-650.00	650.00	1750.00	1920.00	1950.00
109970.000	612.64	0.0	613.49	118.10	57.74	8165.90	196.36	1148.00	0.00	1039.00	1122.00	1148.00
109970.000	612.65	0.0	613.50	118.20	58.17	8164.57	197.26	1148.00	0.00	1039.00	1122.00	1148.00
111920.000	614.85	0.0	615.19	659.37	132.25	6805.22	1482.53	0.0	0.0	310.00	406.00	0.0
111920.000	614.86	0.01	615.20	635.00	124.87	6841.92	1453.21	635.00	295.00	310.00	406.00	930.00
111970.000	614.77	0.0	615.27	659.03	206.26	6672.41	1541.32	0.0	0.0	310.00	406.00	0.0
111970.000	614.78	0.01	615.29	635.00	195.55	6713.72	1510.73	635.00	295.00	310.00	406.00	930.00
111971.000	614.77	0.0	615.27	659.03	206.26	6672.37	1541.36	0.0	0.0	310.00	406.00	0.0
111971.000	614.78	0.01	615.29	635.00	195.55	6713.80	1510.64	635.00	295.00	310.00	406.00	930.00
112020.000	615.01	0.0	615.32	659.99	165.83	6709.07	1545.09	0.0	0.0	310.00	406.00	0.0
112020.000	615.02	0.01	615.34	635.00	155.70	6748.81	1515.49	635.00	295.00	310.00	406.00	930.00
112970.000	615.51	0.0	615.64	651.07	288.68	6106.94	2024.39	0.0	0.0	1335.00	1465.00	0.0
112970.000	615.51	0.00	615.70	320.00	247.22	6932.76	1240.02	320.00	1280.00	1335.00	1465.00	1600.00
114370.000	615.83	0.0	615.89	964.23	570.22	3740.09	4109.68	1090.00	0.00	192.00	298.00	1090.00
114370.000	615.92	0.09	615.98	964.30	567.61	3686.06	4166.32	1090.00	0.00	192.00	298.00	1090.00
116420.000	616.16	0.0	616.30	536.20	281.08	5976.58	2162.34	630.00	0.00	192.00	320.00	630.00
116420.000	616.24	0.08	616.37	536.77	286.89	5935.35	2197.76	630.00	0.00	192.00	320.00	630.00
117870.000	616.63	0.0	616.75	1005.45	4717.55	3702.44	0.0	0.0	0.0	1668.00	1767.00	0.0
117870.000	616.70	0.06	616.82	903.33	4595.66	3824.34	0.0	917.00	850.00	1668.00	1767.00	1767.00
119120.000	617.04	0.0	617.24	568.29	623.58	6359.66	1436.76	0.0	0.0	503.00	620.00	0.0
119120.000	617.12	0.08	617.32	558.00	637.73	6318.20	1464.06	558.00	342.00	503.00	620.00	900.00
119870.000	617.28	0.0	617.39	304.71	0.0	8243.19	176.81	320.00	880.00	880.00	1130.00	1200.00
119870.000	617.36	0.07	617.46	306.51	0.0	8240.09	179.91	320.00	880.00	880.00	1130.00	1200.00
119970.000	617.21	0.0	617.44	272.00	0.0	8361.25	58.76	290.00	630.00	648.00	855.00	920.00
119970.000	617.29	0.07	617.51	272.00	0.0	8357.12	62.88	290.00	630.00	648.00	855.00	920.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
119971.000	619.67	0.0	619.82	290.00	13.18	8196.42	210.40	290.00	630.00	648.00	855.00	920.00
119971.000	619.68	0.01	619.82	290.00	13.33	8195.74	210.93	290.00	630.00	648.00	855.00	920.00
120070.000	619.76	0.0	619.83	290.00	0.0	8216.11	203.89	290.00	880.00	880.00	1130.00	1170.00
120070.000	619.77	0.01	619.84	290.00	0.0	8215.89	204.10	290.00	880.00	880.00	1130.00	1170.00
120420.000	619.60	0.0	620.09	130.80	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120420.000	619.61	0.01	620.10	130.80	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120421.000	619.60	0.0	620.09	130.80	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120421.000	619.61	0.01	620.10	130.80	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120422.000	619.69	0.0	620.17	130.81	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120422.000	619.69	0.01	620.18	130.81	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120423.000	619.69	0.0	620.17	130.81	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120423.000	619.70	0.01	620.18	130.81	0.0	8420.00	0.0	0.0	0.0	703.00	838.00	0.0
120620.000	620.10	0.0	620.37	247.23	3.75	8187.42	228.82	1250.00	0.00	1005.00	1187.00	1250.00
120620.000	620.11	0.01	620.38	247.24	3.76	8186.82	229.41	1250.00	0.00	1005.00	1187.00	1250.00
121520.000	620.57	0.0	620.79	538.05	0.0	6708.39	1711.61	0.0	0.0	544.00	709.00	0.0
121520.000	620.57	0.00	620.80	479.73	0.0	6833.65	1586.34	506.00	544.00	544.00	709.00	1050.00
122420.000	620.89	0.0	621.01	554.33	1991.69	6413.87	14.44	0.0	0.0	580.00	755.00	0.0
122420.000	620.91	0.02	621.03	455.00	1988.38	6431.61	0.0	455.00	300.00	580.00	755.00	755.00
124120.000	621.07	0.0	621.16	1182.95	5074.86	3345.14	0.0	0.0	0.0	1658.00	1787.00	0.0
124120.000	621.10	0.02	621.19	1094.18	5066.60	3353.40	0.0	1140.00	660.00	1658.00	1787.00	1800.00
125520.000	621.41	0.0	621.52	1174.99	2422.93	5994.26	2.81	0.0	0.0	1507.00	1675.00	0.0
125520.000	621.44	0.03	621.57	975.00	2208.44	6211.56	0.0	975.00	700.00	1507.00	1675.00	1675.00
126420.000	621.75	0.0	622.02	989.81	2701.22	5713.91	4.87	0.0	0.0	1491.00	1608.00	0.0
126420.000	621.82	0.07	622.07	978.00	2834.94	5585.05	0.0	978.00	630.00	1491.00	1608.00	1608.00

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
107570.000	107570.00	0.0	0.0	595.20	8420.00	609.00	0.0	609.47	14.70	5.52	1565.40	2196.36
107570.000	107570.00	0.0	0.0	595.20	8420.00	609.10	0.0	609.56	14.19	5.46	1584.55	2234.83
109970.000	2400.00	0.0	0.0	597.20	8420.00	612.64	0.0	613.49	18.29	7.51	1181.66	1968.67
109970.000	2400.00	0.0	0.0	597.20	8420.00	612.65	0.0	613.50	18.22	7.50	1183.48	1972.86
111920.000	1700.00	0.0	0.0	598.50	8420.00	614.85	0.0	615.19	6.05	5.14	3232.76	3424.25
111920.000	1700.00	0.0	0.0	598.50	8420.00	614.86	0.0	615.20	6.09	5.16	3182.18	3411.29
111970.000	50.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.07	3161.95
111970.000	50.00	0.0	0.0	602.80	8420.00	614.78	0.0	615.29	7.16	6.38	2853.40	3147.66
111971.000	1.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.13	3162.02
111971.000	1.00	0.0	0.0	602.80	8420.00	614.78	0.0	615.29	7.16	6.39	2853.28	3147.53
112020.000	50.00	0.0	0.0	598.50	8420.00	615.01	0.0	615.32	5.66	5.01	3334.97	3538.59
112020.000	50.00	0.0	0.0	598.50	8420.00	615.02	0.0	615.34	5.71	5.03	3281.96	3524.21
112970.000	800.00	0.0	0.0	599.10	8420.00	615.51	0.0	615.64	2.57	3.40	4585.84	5250.43
112970.000	800.00	0.0	0.0	599.10	8420.00	615.51	0.0	615.70	3.32	3.86	3245.30	4620.49
114370.000	1200.00	0.0	0.0	600.90	8420.00	615.83	0.0	615.89	1.81	2.55	4829.14	6266.20
114370.000	1200.00	0.0	0.0	600.90	8420.00	615.92	0.0	615.98	1.72	2.49	4918.56	6429.17
116420.000	2050.00	0.0	0.0	601.70	8420.00	616.16	0.0	616.30	3.21	3.39	3202.15	4699.21
116420.000	2050.00	0.0	0.0	601.70	8420.00	616.24	0.0	616.37	3.11	3.35	3242.83	4775.35
117870.000	1400.00	0.0	0.0	602.00	8420.00	616.63	0.0	616.75	4.53	3.58	3567.36	3955.78
117870.000	1400.00	0.0	0.0	602.00	8420.00	616.70	0.0	616.82	4.76	3.68	3391.81	3858.88
119120.000	1250.00	0.0	0.0	602.00	8420.00	617.04	0.0	617.24	4.23	4.05	2907.52	4094.36
119120.000	1250.00	0.0	0.0	602.00	8420.00	617.12	0.0	617.32	4.10	4.01	2943.40	4157.68
119870.000	650.00	0.0	0.0	601.60	8420.00	617.28	0.0	617.39	1.22	2.58	3377.38	7611.27
119870.000	650.00	0.0	0.0	601.60	8420.00	617.36	0.0	617.46	1.20	2.56	3399.69	7681.98
119970.000	100.00	0.0	0.0	606.40	8420.00	617.21	0.0	617.44	3.02	3.88	2240.35	4844.65
119970.000	100.00	0.0	0.0	606.40	8420.00	617.29	0.0	617.51	2.95	3.85	2260.40	4903.29
119971.000	3.00	613.60	606.50	606.40	8420.00	619.67	0.0	619.82	1.44	3.08	2929.77	7027.81
119971.000	3.00	613.60	606.50	606.40	8420.00	619.68	0.0	619.82	1.43	3.07	2932.33	7036.42
120070.000	100.00	0.0	0.0	601.60	8420.00	619.76	0.0	619.83	0.51	2.15	4082.91	11778.36
120070.000	100.00	0.0	0.0	601.60	8420.00	619.77	0.0	619.84	0.51	2.15	4085.46	11789.72
120420.000	350.00	0.0	0.0	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.01	2281.67
120420.000	350.00	0.0	0.0	603.30	8420.00	619.61	0.0	620.10	13.59	5.62	1499.16	2284.30
120421.000	1.00	626.00	629.10	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.09	2281.83
120421.000	1.00	626.00	629.10	603.30	8420.00	619.61	0.0	620.10	13.58	5.62	1499.24	2284.46
120422.000	56.00	626.00	629.10	603.30	8420.00	619.69	0.0	620.17	13.35	5.58	1508.15	2304.81
120422.000	56.00	626.00	629.10	603.30	8420.00	619.69	0.0	620.18	13.32	5.58	1509.26	2307.37

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
120423.000	1.00	0.0	0.0	603.30	8420.00	619.69	0.0	620.17	13.31	5.58	1509.33	2307.52
120423.000	1.00	0.0	0.0	603.30	8420.00	619.70	0.0	620.18	13.29	5.57	1510.45	2310.07
120620.000	200.00	0.0	0.0	605.50	8420.00	620.10	0.0	620.37	4.32	4.24	2145.07	4049.02
120620.000	200.00	0.0	0.0	605.50	8420.00	620.11	0.0	620.38	4.31	4.24	2147.00	4054.29
121520.000	900.00	0.0	0.0	603.40	8420.00	620.57	0.0	620.79	4.90	4.13	3110.53	3802.66
121520.000	900.00	0.0	0.0	603.40	8420.00	620.57	0.0	620.80	5.09	4.21	2960.11	3733.81
122420.000	900.00	0.0	0.0	603.80	8420.00	620.89	0.0	621.01	1.41	3.06	3408.50	7095.72
122420.000	900.00	0.0	0.0	603.80	8420.00	620.91	0.0	621.03	1.46	3.06	3298.45	6968.26
124120.000	1000.00	0.0	0.0	604.30	8420.00	621.07	0.0	621.16	3.02	3.08	4034.76	4845.33
124120.000	1000.00	0.0	0.0	604.30	8420.00	621.10	0.0	621.19	3.01	3.09	3963.65	4849.47
125520.000	1400.00	0.0	0.0	606.10	8420.00	621.41	0.0	621.52	2.91	3.07	3824.56	4934.55
125520.000	1400.00	0.0	0.0	606.10	8420.00	621.44	0.0	621.57	3.13	3.17	3545.50	4757.29
126420.000	950.00	0.0	0.0	608.10	8420.00	621.75	0.0	622.02	10.25	4.84	2429.59	2629.59
126420.000	950.00	0.0	0.0	608.10	8420.00	621.82	0.0	622.07	9.80	4.70	2488.93	2690.32

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
107570.000	8420.00	609.00	0.0	0.0	0.0	190.80	107570.00
107570.000	8420.00	609.10	0.10	0.0	0.0	191.74	107570.00
109970.000	8420.00	612.64	0.0	3.64	0.0	118.10	2400.00
109970.000	8420.00	612.65	0.02	3.55	0.0	118.20	2400.00
111920.000	8420.00	614.85	0.0	2.22	0.0	659.37	1700.00
111920.000	8420.00	614.86	0.01	2.21	0.01	635.00	1700.00
111970.000	8420.00	614.77	0.0	-0.08	0.0	659.03	50.00
111970.000	8420.00	614.78	0.01	-0.09	0.01	635.00	50.00
111971.000	8420.00	614.77	0.0	0.00	0.0	659.03	1.00
111971.000	8420.00	614.78	0.01	0.00	0.01	635.00	1.00
112020.000	8420.00	615.01	0.0	0.24	0.0	659.99	50.00
112020.000	8420.00	615.02	0.01	0.24	0.01	635.00	50.00
112970.000	8420.00	615.51	0.0	0.50	0.0	651.07	800.00
112970.000	8420.00	615.51	0.00	0.49	0.00	320.00	800.00
114370.000	8420.00	615.83	0.0	0.32	0.0	964.23	1200.00
114370.000	8420.00	615.92	0.09	0.41	0.09	964.30	1200.00
116420.000	8420.00	616.16	0.0	0.33	0.0	536.20	2050.00
116420.000	8420.00	616.24	0.08	0.31	0.08	536.77	2050.00
117870.000	8420.00	616.63	0.0	0.47	0.0	1005.45	1400.00
117870.000	8420.00	616.70	0.06	0.46	0.06	903.33	1400.00
119120.000	8420.00	617.04	0.0	0.41	0.0	568.29	1250.00
119120.000	8420.00	617.12	0.08	0.42	0.08	558.00	1250.00
119870.000	8420.00	617.28	0.0	0.25	0.0	304.71	650.00
119870.000	8420.00	617.36	0.07	0.24	0.07	306.51	650.00
119970.000	8420.00	617.21	0.0	-0.07	0.0	272.00	100.00
119970.000	8420.00	617.29	0.07	-0.07	0.07	272.00	100.00
119971.000	8420.00	619.67	0.0	2.46	0.0	290.00	3.00
119971.000	8420.00	619.68	0.01	2.39	0.01	290.00	3.00
120070.000	8420.00	619.76	0.0	0.09	0.0	290.00	100.00
120070.000	8420.00	619.77	0.01	0.09	0.01	290.00	100.00
120420.000	8420.00	619.60	0.0	-0.16	0.0	130.80	350.00
120420.000	8420.00	619.61	0.01	-0.16	0.01	130.80	350.00
120421.000	8420.00	619.60	0.0	0.00	0.0	130.80	1.00
120421.000	8420.00	619.61	0.01	0.00	0.01	130.80	1.00
120422.000	8420.00	619.69	0.0	0.08	0.0	130.81	56.00
120422.000	8420.00	619.69	0.01	0.08	0.01	130.81	56.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
120423.000	8420.00	619.69	0.0	0.00	0.0	130.81	1.00
120423.000	8420.00	619.70	0.01	0.00	0.01	130.81	1.00
120620.000	8420.00	620.10	0.0	0.42	0.0	247.23	200.00
120620.000	8420.00	620.11	0.01	0.41	0.01	247.24	200.00
121520.000	8420.00	620.57	0.0	0.47	0.0	538.05	900.00
121520.000	8420.00	620.57	0.00	0.46	0.00	479.73	900.00
122420.000	8420.00	620.89	0.0	0.32	0.0	554.33	900.00
122420.000	8420.00	620.91	0.02	0.34	0.02	455.00	900.00
124120.000	8420.00	621.07	0.0	0.19	0.0	1182.95	1000.00
124120.000	8420.00	621.10	0.02	0.19	0.02	1094.18	1000.00
125520.000	8420.00	621.41	0.0	0.34	0.0	1174.99	1400.00
125520.000	8420.00	621.44	0.03	0.35	0.03	975.00	1400.00
126420.000	8420.00	621.75	0.0	0.34	0.0	989.81	950.00
126420.000	8420.00	621.82	0.07	0.37	0.07	978.00	950.00

SUMMARY OF ERRORS

FLOODWAY DATA, SHIWASSEE RIVER
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
107570.000	192.	1585.	5.3	609.1	609.0	0.1
109970.000	118.	1183.	7.1	612.6	612.6	0.0
111920.000	635.	3182.	2.6	614.9	614.9	0.0
111970.000	635.	2853.	3.0	614.8	614.8	0.0
111971.000	635.	2853.	3.0	614.8	614.8	0.0
112020.000	635.	3282.	2.6	615.0	615.0	0.0
112970.000	320.	3245.	2.6	615.5	615.5	0.0
114370.000	964.	4919.	1.7	615.9	615.8	0.1
116420.000	537.	3243.	2.6	616.3	616.2	0.1
117870.000	903.	3392.	2.5	616.7	616.6	0.1
119120.000	558.	2943.	2.9	617.1	617.0	0.1
119870.000	307.	3400.	2.5	617.4	617.3	0.1
119970.000	272.	2260.	3.7	617.3	617.2	0.1
119971.000	290.	2932.	2.9	619.7	619.7	0.0
120070.000	290.	4085.	2.1	619.8	619.8	0.0
120420.000	135.	1499.	5.6	619.6	619.6	0.0
120421.000	135.	1499.	5.6	619.6	619.6	0.0
120422.000	135.	1509.	5.6	619.7	619.7	0.0
120423.000	135.	1510.	5.6	619.7	619.7	0.0
120620.000	247.	2147.	3.9	620.1	620.1	0.0
121520.000	480.	2960.	2.8	620.6	620.6	0.0
122420.000	455.	3298.	2.6	620.9	620.9	0.0
124120.000	1094.	3964.	2.1	621.1	621.1	0.0
125520.000	975.	3546.	2.4	621.4	621.4	0.0
126420.000	978.	2489.	3.4	621.8	621.7	0.1

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: CHESANING, VILLAGE

3) WATERCOURSE: SHIAWASSEE RIVER

4) DOCUMENT TYPE: 100YR NATURAL

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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C 2 100-year - flow distribution & floodway delineation 090980

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T1      SHIAWASSEE RIVER-CHESANING, PROJECT NO. 8542
T2      SHIWASSEE RIVER
T3      SHIWASSEE RIVER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.0           0.0       0.0       0.   609.000    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0      15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150.000   110.000   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

NC      0.060      0.040      0.045      0.100      0.300      0.0        0.0        0.0        0.0        0.0
QT      5.000   5710.000   7650.000   8420.000  10100.000   8420.000      0.0        0.0        0.0        0.0

        .A  MANUFACTURED

X1 107570.000     12.000   1750.000   1920.000 107570.000 107570.000 107570.000      0.0        0.0        0.0
X3      0.0        0.0        0.0      650.000      0.0        0.0        0.0        0.0        0.0        0.0
GR    615.000    100.000    610.000    620.000    610.000   1715.000    605.000   1750.000    599.500   1810.000
GR    595.800   1829.000    595.200   1848.000    595.700   1869.000    599.500   1890.000    612.000   1920.000
GR    616.000   1935.000    620.000   1950.000      0.0        0.0        0.0        0.0        0.0        0.0
NC      0.060      0.040      0.045      0.0        0.0        0.0        0.0        0.0        0.0        0.0

        B

X1 109970.000     16.000   1039.000   1122.000   1600.000   2000.000   2400.000      0.0        0.0        0.0
X3      0.0        0.0        0.0        0.0        0.0     1148.000      0.0        0.0        0.0        0.0
GR    622.700    466.000    620.300    621.000    620.400   1008.000    612.800   1023.000    608.300   1039.000
GR    602.500   1042.000    599.800   1050.000    597.800   1064.000    597.200   1078.000    597.700   1093.000
GR    599.800   1108.000    606.500   1122.000    614.600   1148.000    607.500   1209.000    609.100   1810.000
GR    619.000   2091.000      0.0        0.0        0.0        0.0        0.0        0.0        0.0        0.0
NC      0.100      0.100      0.040      0.0        0.0        0.0        0.0        0.0        0.0        0.0
ET      0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0      295.000    930.000

        C   MANUFACTURED

X1 111920.000     20.000    310.000    406.000   1450.000   1600.000   1700.000      0.0        0.0        0.0
GR    613.500    291.000    603.600    310.000    601.000    314.000    599.500    321.000    599.000    331.000
GR    598.500    341.000    598.500    351.000    598.800    361.000    599.000    371.000    600.000    379.000
GR    603.000    386.000    605.200    391.000    611.200    406.000    613.300    472.000    610.900    501.000
GR    611.000    583.000    613.600    648.000    610.800    748.000    610.800    934.000    620.700    974.000
NC      0.060      0.100      0.030      0.0        0.0        0.0        0.0        0.0        0.0        0.0
ET      0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0      295.000    930.000

        D   DAM IN BACK OF FARMER PEET PACKING CO.
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CREST-602.8, REGARDED AS STEP DAM

X1	111970.000	14.000	310.000	406.000	50.000	50.000	50.000	0.0	0.0	0.0
GR	613.500	291.000	604.600	310.000	604.600	312.000	602.800	312.000	603.000	386.000
GR	605.200	391.000	611.200	406.000	613.300	472.000	610.900	501.000	611.000	583.000
GR	613.600	648.000	610.800	748.000	610.800	934.000	620.700	974.000	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	295.000	930.000

X1	111971.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
NC	0.080	0.100	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	295.000	930.000

E MANUFACTURED

X1	112020.000	20.000	310.000	406.000	50.000	50.000	50.000	0.0	0.0	0.0
GR	613.500	291.000	603.600	310.000	601.000	314.000	599.500	321.000	599.000	331.000
GR	598.500	341.000	598.500	351.000	598.800	361.000	599.000	371.000	600.000	379.000
GR	603.000	386.000	605.200	391.000	611.200	406.000	613.300	472.000	610.900	501.000
GR	611.000	583.000	613.600	648.000	610.800	748.000	610.800	934.000	620.700	974.000
NC	0.100	0.100	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1280.000	1600.000

F

X1	112970.000	15.000	1335.000	1465.000	700.000	950.000	800.000	0.0	0.0	0.0
GR	620.000	1060.000	616.000	1120.000	614.100	1229.000	608.500	1335.000	603.000	1350.000
GR	601.700	1374.000	599.200	1400.000	599.100	1430.000	603.000	1450.000	606.400	1465.000
GR	608.000	1635.000	612.000	1790.000	616.000	1800.000	620.000	1825.000	624.000	2010.000
NC	0.060	0.035	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	140.000	1050.000

G

X1	114370.000	18.000	192.000	298.000	1150.000	1050.000	1200.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	0.0	1090.000	0.0	0.0	0.0	0.0
GR	630.000	101.000	628.700	107.000	621.200	122.000	609.800	130.000	610.700	150.000
GR	604.900	192.000	603.200	200.000	601.300	222.000	601.200	247.000	600.900	267.000
GR	603.200	292.000	605.100	298.000	605.700	318.000	612.200	329.000	613.300	409.000
GR	611.700	911.000	612.000	1050.000	616.000	1396.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	180.000	610.000

H MANUFACTURED

X1	116420.000	16.000	192.000	320.000	2300.000	900.000	2050.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	0.0	630.000	0.0	0.0	0.0	0.0
GR	628.000	35.000	620.000	65.000	616.000	95.000	612.000	180.000	604.900	192.000
GR	603.400	200.000	601.800	228.000	601.800	259.000	601.700	284.000	603.400	315.000
GR	605.100	320.000	612.000	335.000	613.700	750.000	616.000	870.000	620.000	1020.000
GR	624.000	1060.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.035	0.060	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	850.000	1767.000

I

X1	117870.000	15.000	1668.000	1767.000	700.000	1300.000	1400.000	0.0	0.0	0.0
GR	628.100	571.000	613.700	793.000	614.500	1359.000	612.200	1469.000	613.600	1573.000
GR	615.700	1651.000	607.200	1659.000	606.600	1668.000	603.600	1673.000	602.000	1688.000
GR	602.300	1703.000	602.300	1718.000	603.600	1733.000	625.500	1767.000	629.000	1772.000
NC	0.050	0.040	0.042	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	342.000	900.000

J MANUFACTURED

X1	119120.000	14.000	503.000	620.000	650.000	1300.000	1250.000	0.0	0.0	0.0
GR	628.000	230.000	620.000	300.000	616.000	350.000	612.000	500.000	606.500	503.000
GR	603.600	510.000	602.000	533.000	602.300	556.000	602.300	571.000	603.600	600.000
GR	612.000	620.000	614.600	800.000	616.000	900.000	624.000	940.000	0.0	0.0
NC	0.030	0.045	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

K

X1	119870.000	13.000	880.000	1130.000	600.000	700.000	650.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	880.000	0.0	1200.000	0.0	0.0	0.0	0.0
GR	624.000	835.000	619.300	880.000	604.900	910.000	603.600	941.000	601.600	972.000
GR	602.500	1004.000	603.000	1036.000	603.700	1067.000	604.900	1120.000	608.000	1130.000
GR	616.000	1160.000	620.000	1250.000	624.000	1380.000	0.0	0.0	0.0	0.0
NC	0.030	0.050	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

L DAM NE OF BROAD ST BRIDGE

CREST-613.6

X1	119970.000	9.000	648.000	855.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	630.000	0.0	920.000	0.0	0.0	0.0	0.0
GR	624.000	570.000	619.300	631.000	617.700	648.000	607.200	648.000	606.400	855.000
GR	614.700	855.000	616.000	890.000	620.000	1000.000	624.000	1100.000	0.0	0.0
SB	0.0	1.500	2.500	0.0	107.000	0.0	0.100	0.0	606.400	606.400

X1	119971.000	0.0	0.0	0.0	3.000	3.000	3.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	606.500	613.600	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	630.000	0.0	920.000	0.0	0.0	0.0	0.0
BT	10.000	630.000	624.000	624.000	631.000	619.300	619.300	648.000	617.700	617.700
BT	648.000	614.400	614.400	658.000	614.400	614.400	718.000	613.600	613.600	855.000
BT	613.600	613.600	855.000	614.700	614.700	890.000	616.000	616.000	920.000	620.000
NC	0.045	0.030	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

M MANUFACTURED

X1	120070.000	13.000	880.000	1130.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	880.000	0.0	1170.000	0.0	0.0	0.0	0.0
GR	624.000	835.000	619.300	880.000	604.900	910.000	603.600	941.000	601.600	972.000
GR	602.500	1004.000	603.000	1036.000	603.700	1067.000	604.900	1120.000	608.000	1130.000
GR	616.000	1160.000	620.000	1250.000	624.000	1380.000	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.040	0.300	0.500	0.0	0.0	0.0	0.0	0.0

N BROAD ST BRIDGE, TR 629.1, LC 623.5, WIDTH 56, LENGTH 141

X1	120420.000	18.000	703.000	838.000	350.000	350.000	350.000	0.0	0.0	0.0
GR	629.700	600.000	629.100	703.000	611.500	703.000	611.300	724.000	605.300	746.000
GR	603.300	770.000	623.600	771.000	623.600	775.000	603.700	775.000	607.500	796.000
GR	610.500	817.000	610.900	838.000	629.200	838.000	626.000	950.000	625.300	1061.000
GR	625.100	1136.000	626.800	1234.000	630.800	1344.000	0.0	0.0	0.0	0.0

X1	120421.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	5.000	600.000	629.700	629.100	703.000	629.100	623.700	775.000	629.100	623.600
BT	838.000	629.200	623.500	950.000	626.000	626.000	0.0	0.0	0.0	0.0

X1	120422.000	0.0	0.0	0.0	56.000	56.000	56.000	0.0	0.0	0.0

X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	120423.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
NC	0.060	0.060	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1005.000	1250.000

O MANUFACTURED

X1	120620.000	14.000	1005.000	1187.000	200.000	200.000	200.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	0.0	1250.000	0.0	0.0	0.0	0.0
GR	632.500	829.000	629.400	933.000	627.900	1000.000	613.800	1005.000	605.500	1035.000
GR	605.800	1056.000	607.500	1078.000	608.500	1100.000	609.100	1122.000	610.600	1143.000
GR	613.800	1165.000	616.000	1187.000	620.000	1340.000	624.300	1430.000	0.0	0.0
NC	0.100	0.070	0.040	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	544.000	1050.000

P

X1	121520.000	13.000	544.000	709.000	1000.000	800.000	900.000	0.0	0.0	0.0
GR	639.400	544.000	613.600	580.000	606.600	604.000	603.400	628.000	606.900	652.000
GR	608.300	675.000	613.600	702.000	617.500	709.000	617.000	792.000	616.000	944.000
GR	617.000	1075.000	624.400	1144.000	632.300	1195.000	0.0	0.0	0.0	0.0
NC	0.030	0.050	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	755.000

Q MANUFACTURED

X1	122420.000	15.000	580.000	755.000	1000.000	600.000	900.000	0.0	0.0	0.0
GR	632.000	60.000	628.000	120.000	624.000	175.000	620.000	235.000	617.700	400.000
GR	613.600	580.000	607.000	611.000	603.800	642.000	607.300	673.000	608.700	703.000
GR	613.600	733.000	616.000	755.000	620.000	762.000	624.000	825.000	630.000	850.000
NC	0.030	0.060	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	660.000	1800.000

R

X1	124120.000	15.000	1658.000	1787.000	400.000	1150.000	1000.000	0.0	0.0	0.0
GR	632.000	355.000	628.000	470.000	624.000	520.000	620.000	590.000	618.000	980.000
GR	617.900	1400.000	617.900	1658.000	613.700	1665.000	608.100	1680.000	606.700	1697.000
GR	608.200	1713.000	604.300	1728.000	613.700	1743.000	622.300	1756.000	639.100	1787.000
NC	0.030	0.080	0.042	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	700.000	1675.000

S MANUFACTURED

X1	125520.000	18.000	1507.000	1675.000	950.000	1250.000	1400.000	0.0	0.0	0.0
GR	628.000	470.000	624.000	490.000	620.000	530.000	618.900	850.000	620.000	1030.000
GR	620.000	1140.000	618.900	1400.000	620.000	1460.000	620.000	1500.000	613.700	1507.000
GR	608.000	1544.000	606.100	1581.000	607.900	1618.000	613.700	1657.000	620.000	1675.000
GR	624.000	1720.000	624.000	1760.000	640.000	2000.000	0.0	0.0	0.0	0.0
NC	0.030	0.060	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	630.000	1608.000

T

X1	126420.000	13.000	1491.000	1608.000	800.000	950.000	950.000	0.0	0.0	0.0
GR	640.000	150.000	624.000	225.000	620.200	900.000	620.300	1300.000	618.700	1491.000
GR	613.700	1507.000	610.000	1530.000	608.100	1553.000	609.900	1576.000	613.700	1600.000
GR	619.800	1608.000	627.200	1633.000	646.400	1656.000	0.0	0.0	0.0	0.0

EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 1

CCHV     0.100 CEHV     0.300
*SECNO 107570.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST


3470 ENCROACHMENT STATIONS       650.0     1950.0  TYPE       1  TARGET      -650.000

         .A  MANUFACTURED

107570.00     13.80    609.00       0.0     609.00     609.47       0.47       0.0        0.0     605.00
    8420.       84.     8336.        0.        56.      1509.         0.        0.         0.     612.00
     0.0      1.50      5.52       0.0      0.060      0.045      0.040       0.0     595.20    1722.00
 0.001470   107570.   107570.   107570.          0          0          0     -0.00     190.80    1912.80

FLOW DISTRIBUTION FOR SECNO  107570.00          CWSEL      609.00

STA      1722.     1750.     1920.
  PER Q      1.0      99.0
   AREA     56.0    1509.4
    VEL      1.5       5.5

*SECNO 109970.000

3470 ENCROACHMENT STATIONS         0.0     1148.0  TYPE       1  TARGET      1147.999

         B

109970.00     15.44    612.64       0.0       0.0     613.49       0.85       3.90       0.12     608.30
    8420.       58.     8166.       196.       33.      1088.       60.        75.         8.     606.50
     0.09      1.73      7.51      3.25      0.060      0.045      0.040      0.045     597.20    1023.59
 0.001829     1600.     2400.     2000.          2          0          0      -0.01     118.10    1141.69

FLOW DISTRIBUTION FOR SECNO  109970.00          CWSEL      612.64

STA      1024.     1039.     1122.     1142.
  PER Q      0.7      97.0       2.3
   AREA     33.4    1087.9      60.4
    VEL      1.7       7.5       3.3

*SECNO 111920.000
3280 CROSS SECTION 111920.00 EXTENDED       1.35 FEET


3301 HV CHANGED MORE THAN HVINS


         C   MANUFACTURED

111920.00     16.35    614.85       0.0       0.0     615.19       0.33       1.65       0.05     603.60
    8420.      132.     6805.      1483.      120.      1324.     1789.      158.        22.     611.20
     0.20      1.10      5.14      0.83      0.100      0.040      0.100      0.043     598.50     291.00
 0.000605     1450.     1700.     1600.          2          0          0      -0.02     659.37     950.37

FLOW DISTRIBUTION FOR SECNO  111920.00          CWSEL      614.85
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STA        291.      310.      406.      472.      501.      583.      648.      748.      934.      950.
  PER Q      1.6      80.8       1.4       0.7       3.4       1.3       2.2       8.3       0.2
   AREA    119.7    1324.2     171.7      79.8     319.9     165.8     265.1     753.5      33.2
    VEL      1.1       5.1       0.7       0.7       0.9       0.7       0.7       0.9       0.6

*SECNO 111970.000
3280 CROSS SECTION 111970.00 EXTENDED       1.27 FEET


        D   DAM IN BACK OF FARMER PEET PACKING CO.


            CREST-602.8, REGARDED AS STEP DAM

111970.00    11.97   614.77      0.0       0.0    615.27      0.50      0.03      0.05    604.60
    8420.     206.    6672.    1541.      109.    1050.     1744.      162.       23.    611.20
     0.20     1.90     6.35     0.88     0.060    0.030     0.100     0.043    602.80    291.00
 0.000709      50.      50.      50.         2        0         0     -0.03    659.03    950.03

FLOW DISTRIBUTION FOR SECNO  111970.00          CWSEL     614.77

STA        291.      310.      406.      472.      501.      583.      648.      748.      934.      950.
  PER Q      2.4      79.2       1.4       0.7       3.6       1.4       2.3       8.7       0.2
   AREA    108.6    1050.5     166.2      77.4     313.1     160.4     256.8     738.1      31.8
    VEL      1.9       6.4       0.7       0.8       1.0       0.7       0.7       1.0       0.6

*SECNO 111971.000
3280 CROSS SECTION 111971.00 EXTENDED       1.27 FEET


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

111971.00    11.97   614.77      0.0       0.0    615.27      0.50      0.00      0.00    604.60
    8420.     206.    6672.    1541.      109.    1050.     1744.      162.       23.    611.20
     0.20     1.90     6.35     0.88     0.060    0.030     0.100     0.043    602.80    291.00
 0.000709       1.       1.       1.         0        0         0     -0.03    659.03    950.03

FLOW DISTRIBUTION FOR SECNO  111971.00          CWSEL     614.77

STA        291.      310.      406.      472.      501.      583.      648.      748.      934.      950.
  PER Q      2.4      79.2       1.4       0.7       3.6       1.4       2.3       8.7       0.2
   AREA    108.7    1050.5     166.2      77.4     313.1     160.5     256.8     738.1      31.8
    VEL      1.9       6.4       0.7       0.8       1.0       0.7       0.7       1.0       0.6

*SECNO 112020.000
3280 CROSS SECTION 112020.00 EXTENDED       1.51 FEET


        E   MANUFACTURED

112020.00    16.51   615.01      0.0       0.0    615.32      0.31      0.03      0.02    603.60
    8420.     166.    6709.    1545.      123.    1339.     1873.      165.       24.    611.20
     0.20     1.35     5.01     0.82     0.080    0.040     0.100     0.043    598.50    291.00
 0.000566      50.      50.      50.         2        0         0     -0.02    659.99    950.99

FLOW DISTRIBUTION FOR SECNO  112020.00          CWSEL     615.01
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STA        291.      310.      406.      472.      501.      583.      648.      748.      934.      951.
  PER Q      2.0      79.7       1.5       0.7       3.6       1.4       2.3       8.6       0.2
   AREA    122.7    1339.1     181.9      84.3     332.6     175.9     280.6     782.3      35.7
    VEL      1.4       5.0       0.7       0.7       0.9       0.7       0.7       0.9       0.6

*SECNO 112970.000

        F

112970.00    16.41    615.51       0.0       0.0    615.64      0.13      0.30      0.02    608.50
    8420.      289.     6107.     2024.      505.     1797.     2284.      244.       37.    606.40
     0.29     0.57      3.40      0.89     0.100     0.040     0.100     0.042    599.10   1147.72
 0.000257     700.      800.      950.         1         0         0     -0.02    651.07   1798.79

FLOW DISTRIBUTION FOR SECNO  112970.00          CWSEL     615.51

STA      1148.     1229.     1335.     1465.     1635.     1790.     1799.
  PER Q      0.1       3.3      72.5      16.4       7.6       0.1
   AREA     57.6     447.0    1796.8    1413.9     855.1      15.5
    VEL      0.2       0.6       3.4       1.0       0.7       0.3

*SECNO 114370.000

3470 ENCROACHMENT STATIONS        0.0    1090.0  TYPE      1  TARGET     1089.999

        G

114370.00    14.93    615.83       0.0       0.0    615.89      0.06      0.24      0.01    604.90
    8420.      570.     3740.     4110.      462.     1468.     2900.      365.       57.    605.10
     0.46     1.24      2.55      1.42     0.060     0.045     0.035     0.043    600.90    125.77
 0.000181    1150.     1200.     1050.         2         0         0     -0.03    964.23   1090.00

FLOW DISTRIBUTION FOR SECNO  114370.00          CWSEL     615.83

STA        126.      130.      150.      192.      298.      318.      329.      409.      911.     1050.     1090.
  PER Q      0.1       1.4       5.3      44.4       6.7       1.7       3.5      25.3       9.4       2.2
   AREA     12.8     111.6     337.3    1467.7     208.6      75.7     246.4    1671.8     553.3     144.0
    VEL      0.5       1.0       1.3       2.5       2.7       1.9       1.2       1.3       1.4       1.3

*SECNO 116420.000

3470 ENCROACHMENT STATIONS        0.0     630.0  TYPE      1  TARGET      629.999

        H   MANUFACTURED

116420.00    14.46    616.16       0.0       0.0    616.30      0.14      0.39      0.02    604.90
    8420.      281.     5977.     2162.      276.     1763.     1163.      502.       79.    605.10
     0.61     1.02      3.39      1.86     0.060     0.045     0.035     0.046    601.70     93.80
 0.000321    2300.     2050.      900.         2         0         0     -0.04    536.20    630.00

FLOW DISTRIBUTION FOR SECNO  116420.00          CWSEL     616.16

STA         94.      180.      192.      320.      335.      630.
  PER Q      1.6       1.7      71.0       3.7      21.9
   AREA    183.6      92.5    1762.7     114.2    1049.1
    VEL      0.7       1.6       3.4       2.8       1.8

*SECNO 117870.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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        I

117870.00     14.63    616.63      0.0       0.0    616.75      0.12      0.45      0.00    606.60
    8420.     4718.     3702.       0.     2533.     1034.        0.      587.       95.    625.50
      0.74      1.86      3.58      0.0     0.035     0.045     0.060     0.047    602.00    747.79
  0.000453      700.     1400.    1300.         2         0         0     -0.11   1005.45   1753.23

FLOW DISTRIBUTION FOR SECNO  117870.00          CWSEL     616.63

STA       748.      793.     1359.     1469.     1573.     1651.     1659.     1668.     1767.
  PER Q     0.9      28.6       8.6      10.0       2.6       1.0       4.3      44.0
   AREA    66.3    1433.6     361.1     388.2     154.7      41.5      87.6    1034.5
    VEL     1.2       1.7       2.0       2.2       1.4       2.1       4.1       3.6

*SECNO 119120.000

        J   MANUFACTURED

119120.00     15.04    617.04      0.0       0.0    617.24      0.20      0.47      0.03    606.50
    8420.      624.     6360.     1437.      487.     1569.      851.      660.      110.    612.00
      0.82      1.28      4.05      1.69     0.050     0.042     0.040     0.047    602.00    336.93
  0.000423      650.     1250.    1300.         0         0         0     -0.01    568.29    905.23

FLOW DISTRIBUTION FOR SECNO  119120.00          CWSEL     617.04

STA       337.      350.      500.      503.      620.      800.      900.      905.
  PER Q     0.0       7.0       0.4      75.5      14.8       2.3       0.0
   AREA     6.8     456.8      23.4    1569.1     674.2     174.5       2.7
    VEL     0.4       1.3       1.5       4.1       1.8       1.1       0.5

*SECNO 119870.000

3470 ENCROACHMENT STATIONS       880.0     1200.0  TYPE      1  TARGET      320.000

        K

119870.00     15.68    617.28      0.0       0.0    617.39      0.10      0.14      0.01    619.30
    8420.        0.     8243.     177.        0.     3200.     177.      707.      117.    608.00
      0.89       0.0      2.58      1.00    0.030     0.035     0.045     0.046    601.60    884.20
  0.000122      600.      650.     700.         2         0         0     -0.02    304.71   1188.91

FLOW DISTRIBUTION FOR SECNO  119870.00          CWSEL     617.28

STA       884.     1130.     1160.     1189.
  PER Q    97.9       2.0       0.1
   AREA  3200.3     158.5      18.6
    VEL     2.6       1.1       0.3

*SECNO 119970.000

3470 ENCROACHMENT STATIONS       630.0      920.0  TYPE      1  TARGET      290.000

        L   DAM NE OF BROAD ST BRIDGE

            CREST-613.6

119970.00     10.81    617.21      0.0       0.0    617.44      0.23      0.02      0.04    617.70
    8420.        0.     8361.      59.        0.     2155.      85.      713.      117.    614.70
      0.90       0.0      3.88      0.69    0.030     0.030     0.050     0.046    606.40    648.00
  0.000302      100.      100.     100.         2         0         0     -0.03    272.00    920.00
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FLOW DISTRIBUTION FOR SECNO  119970.00          CWSEL      617.21

STA        648.      855.      890.      920.
  PER Q      99.3       0.6       0.1
   AREA    2155.2      65.2      20.0
    VEL       3.9       0.8       0.4

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.0       1.50       2.50       0.0       107.00      0.0        0.10       0.0       606.40     606.40

*SECNO 119971.000
PRESSURE AND WEIR FLOW

 EGPRS       EGLWC        H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                        AREA
*********    617.44       0.0       8456.        1.         0.         11.       606.50     613.60

3470 ENCROACHMENT STATIONS       630.0      920.0  TYPE       1  TARGET       290.000
119971.00    13.27    619.67      0.0       0.0     619.82      0.14      2.37      0.0     617.70
    8420.      13.     8196.      210.       20.     2664.      245.      713.      117.     614.70
     0.90     0.65      3.08      0.86     0.030     0.030     0.050     0.046    606.40    630.00
 0.000144       3.        3.        3.         2         0        16     -0.03    290.00    920.00

FLOW DISTRIBUTION FOR SECNO  119971.00          CWSEL      619.67

STA        630.      648.      855.      890.      920.
  PER Q       0.2      97.3       1.7       0.8
   AREA      20.3    2664.5     151.3      93.8
    VEL       0.7       3.1       0.9       0.7

*SECNO 120070.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS       880.0     1170.0  TYPE       1  TARGET       290.000

        M   MANUFACTURED

120070.00    18.16    619.76      0.0       0.0     619.83      0.07      0.01      0.01     619.30
    8420.       0.     8216.      204.        0.     3815.      268.      722.      118.     608.00
     0.91      0.0      2.15      0.76     0.030     0.030     0.050     0.046    601.60    880.00
 0.000051     100.      100.      100.         2         0         0     -0.01    290.00   1170.00

FLOW DISTRIBUTION FOR SECNO  120070.00          CWSEL      619.76

STA        880.     1130.     1160.     1170.
  PER Q      97.6       2.3       0.2
   AREA    3814.7     232.8      35.4
    VEL       2.2       0.8       0.4

CCHV     0.300 CEHV     0.500
*SECNO 120[illegible]20.000
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3265 DIVIDED FLOW

        N   BROAD ST BRIDGE, TR 629.1, LC 623.5, WIDTH 56, LENGTH 141

120420.00    16.30   619.60     0.0      0.0   620.09     0.49     0.05     0.21   629.10
    8420.       0.    8420.      0.       0.    1498.       0.     744.     120.   629.20
     0.93      0.0     5.62     0.0    0.030    0.040    0.030    0.046   603.30   703.00
 0.001362     350.     350.     350.        2        0        0    -0.01   130.80   838.00

FLOW DISTRIBUTION FOR SECNO  120420.00          CWSEL     619.60

STA       703.      838.
  PER Q     100.0
   AREA    1498.0
    VEL       5.6

*SECNO 120421.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD   5 MIN ELTRD   626.00 MAX ELLC   629.10

120421.00    16.30   619.60     0.0      0.0   620.09     0.49     0.00     0.00   629.10
    8420.       0.    8420.      0.       0.    1498.       0.     744.     120.   629.20
     0.93      0.0     5.62     0.0    0.030    0.040    0.030    0.046   603.30   703.00
 0.001362       1.       1.       1.        0        0        0    -0.01   130.80   838.00

FLOW DISTRIBUTION FOR SECNO  120421.00          CWSEL     619.60

STA       703.      838.
  PER Q     100.0
   AREA    1498.1
    VEL       5.6

*SECNO 120422.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD   5 MIN ELTRD   626.00 MAX ELLC   629.10

120422.00    16.39   619.69     0.0      0.0   620.17     0.48     0.08     0.00   629.10
    8420.       0.    8420.      0.       0.    1508.       0.     746.     120.   629.20
     0.94      0.0     5.58     0.0    0.030    0.040    0.030    0.046   603.30   703.00
 0.001335      56.      56.      56.        0        0        0    -0.01   130.81   838.00

FLOW DISTRIBUTION FOR SECNO  120422.00          CWSEL     619.69

STA       703.      838.
  PER Q     100.0
   AREA    1508.1
    VEL       5.6

*SECNO 120423.000

3265 DIVIDED FLOW

120423.00    16.39   619.69     0.0      0.0   620.17     0.48     0.00     0.00   629.10
    8420.       0.    8420.      0.       0.    1509.       0.     746.     120.   629.20
     0.94      0.0     5.58     0.0    0.030    0.040    0.030    0.046   603.30   703.00
```

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0.001331        1.        1.        1.        0        0        0    -0.01    130.81    838.00

FLOW DISTRIBUTION FOR SECNO  120423.00          CWSEL     619.69

STA       703.      838.
  PER Q     100.0
   AREA    1509.3
    VEL       5.6

*SECNO 120620.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS        0.0    1250.0  TYPE      1  TARGET     1249.999

         0   MANUFACTURED

120620.00     14.60    620.10       0.0       0.0    620.37      0.27      0.14      0.06    613.80
    8420.        4.     8187.      229.        7.     1931.     207.      754.      121.     616.00
     0.95      0.53      4.24      1.11     0.060     0.035     0.060     0.046    605.50   1002.77
 0.000432      200.      200.      200.         2         0         0    -0.02    247.23   1250.00

FLOW DISTRIBUTION FOR SECNO  120620.00          CWSEL     620.10

STA      1003.     1005.     1187.     1250.
  PER Q      0.0      97.2       2.7
   AREA      7.0    1931.5     206.5
    VEL      0.5       4.2       1.1

CCHV    0.100 CEHV    0.300
*SECNO 121520.000

         P

121520.00     17.17    620.57       0.0       0.0    620.79      0.22      0.41      0.01    639.40
    8420.        0.     6708.     1712.        0.     1623.    1488.      807.      128.     617.50
     1.02      0.0       4.13      1.15     0.100     0.040     0.070     0.045    603.40    570.27
 0.000490     1000.      900.      800.         2         0         0    -0.01    538.05   1108.32

FLOW DISTRIBUTION FOR SECNO  121520.00          CWSEL     620.57

STA       570.      709.      792.      944.     1075.     1108.
  PER Q     79.7       3.4       8.8       7.6       0.5
   AREA   1622.5     275.8     619.1     533.6      59.5
    VEL      4.1       1.0       1.2       1.2       0.7

*SECNO 122420.000

         Q   MANUFACTURED

122420.00     17.09    620.89       0.0       0.0    621.01      0.12      0.21      0.01    613.60
    8420.     1992.     6414.       14.    1285.     2097.       26.      870.      139.     616.00
     1.11      1.55      3.06      0.55     0.030     0.030     0.050     0.044    603.80    221.67
 0.000141     1000.      900.      600.         2         0         0    -0.05    554.33    776.00

FLOW DISTRIBUTION FOR SECNO  122420.00          CWSEL     620.89

ST..      22.       235.      00.       580.      755.      762.      776.
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  PER Q        0.0       3.8      19.9      76.2       0.2       0.0
   AREA        5.9     336.4     943.0    2096.7      20.2       6.2
    VEL        0.3       0.9       1.8       3.1       0.7       0.2

*SECNO 124120.000

        R

124120.00    16.77    621.07       0.0       0.0    621.16      0.09      0.15      0.00    617.90
    8420.     5075.     3345.        0.     2950.     1085.        0.      927.      149.    639.10
     1.20     1.72      3.08       0.0     0.030     0.040     0.060     0.045    604.30    571.20
 0.000302     400.     1000.     1150.         2         0         0     -0.01    182.95   1754.15

FLOW DISTRIBUTION FOR SECNO  124120.00          CWSEL     621.07

STA      571.     590.     980.    1400.    1658.    1787.
  PER Q     0.1     13.5     28.7     18.1     39.7
   AREA    10.1    808.9   1312.2    819.0   1084.6
    VEL     0.6      1.4      1.8      1.9      3.1

*SECNO 125520.000

        S   MANUFACTURED

125520.00    15.31    621.41       0.0       0.0    621.52      0.11      0.36      0.01    613.70
    8420.     2423.     5994.        3.     1862.     1951.       11.     1028.      176.    620.00
     1.33     1.30      3.07      0.25     0.030     0.042     0.080     0.045    606.10    515.89
 0.000291     950.     1400.     1250.         2         0         0     -0.02   1174.99   1690.88

FLOW DISTRIBUTION FOR SECNO  125520.00          CWSEL     621.41

STA      516.     530.     850.    1030.    1140.    1400.    1460.    1500.    1507.    1675.    1691.
  PER Q     0.1      9.9      5.6      2.0      8.0      1.9      0.7      0.7     71.2      0.0
   AREA    10.0    627.7    353.1    155.3    510.0    117.7     56.5     31.9   1951.3     11.2
    VEL     0.7      1.3      1.3      1.1      1.3      1.3      1.1      1.9      3.1      0.3

*SECNO 126420.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

        T

126420.00    13.65    621.75       0.0       0.0    622.02      0.27      0.45      0.05    618.70
    8420.     2701.     5714.        5.     1243.     1181.        6.     1091.      196.    619.80
     1.39     2.17      4.84      0.76     0.030     0.045     0.060     0.045    608.10    624.78
 0.001025     800.      950.      950.         2         0         0     -0.01    989.81   1614.59

FLOW DISTRIBUTION FOR SECNO  126420.00          CWSEL     621.75

STA      625.     900.    1300.    1491.    1608.    1615.
  PER Q     3.4     14.8     13.9     67.9      0.1
   AREA   213.2    599.7    429.6   1180.6      6.4
    VEL     1.3      2.1      2.7      4.8      0.8
```

Tree shown by width below
Wd S restricted to 200 ft
Add new section Here!

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: CHESANING, VILLAGE

3) WATERCOURSE: SHIAWASSEE RIVER

4) DOCUMENT TYPE: CONVERGENCE SUMMARY

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

0.003172
0.001470
0.000653

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
107570.000	107570.00	0.0	0.0	595.20	8420.00	607.00	0.0	607.77	31.72	7.07	1202.60	1495.00
107570.000	107570.00	0.0	0.0	595.20	8420.00	609.00	0.0	609.47	14.70	5.52	1565.40	2196.36
107570.000	107570.00	0.0	0.0	595.20	8420.00	611.00	0.0	611.24	6.53	4.11	3027.30	3295.78
109970.000	2400.00	0.0	0.0	597.20	8420.00	612.62	0.0	613.47	18.41	7.52	1178.97	1962.50
109970.000	2400.00	0.0	0.0	597.20	8420.00	612.64	0.0	613.49	18.29	7.51	1181.66	1968.67
109970.000	2400.00	0.0	0.0	597.20	8420.00	612.93	0.0	613.74	16.85	7.31	1217.34	2051.15
111920.000	1700.00	0.0	0.0	598.50	8420.00	614.84	0.0	615.18	6.07	5.15	3227.05	3418.69
111920.000	1700.00	0.0	0.0	598.50	8420.00	614.85	0.0	615.19	6.05	5.14	3232.76	3424.25
111920.000	1700.00	0.0	0.0	598.50	8420.00	615.01	0.0	615.33	5.70	5.03	3337.51	3527.17
111970.000	50.00	0.0	0.0	602.80	8420.00	614.76	0.0	615.26	7.12	6.36	2896.00	3154.54
111970.000	50.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.07	3161.95
111970.000	50.00	0.0	0.0	602.80	8420.00	614.93	0.0	615.40	6.60	6.19	3011.51	3276.88
111971.000	1.00	0.0	0.0	602.80	8420.00	614.76	0.0	615.26	7.12	6.36	2896.05	3154.59
111971.000	1.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.13	3162.02
111971.000	1.00	0.0	0.0	602.80	8420.00	614.93	0.0	615.40	6.60	6.19	3011.63	3277.02
112020.000	50.00	0.0	0.0	598.50	8420.00	615.00	0.0	615.31	5.68	5.02	3329.18	3532.83
112020.000	50.00	0.0	0.0	598.50	8420.00	615.01	0.0	615.32	5.66	5.01	3334.97	3538.59
112020.000	50.00	0.0	0.0	598.50	8420.00	615.15	0.0	615.45	5.36	4.91	3431.96	3635.96
112970.000	800.00	0.0	0.0	599.10	8420.00	615.50	0.0	615.63	2.58	3.40	4580.84	5244.01
112970.000	800.00	0.0	0.0	599.10	8420.00	615.51	0.0	615.64	2.57	3.40	4585.84	5250.43
112970.000	800.00	0.0	0.0	599.10	8420.00	615.63	0.0	615.76	2.48	3.35	4662.96	5349.39
114370.000	1200.00	0.0	0.0	600.90	8420.00	615.82	0.0	615.89	1.81	2.55	4823.19	6255.42
114370.000	1200.00	0.0	0.0	600.90	8420.00	615.83	0.0	615.89	1.81	2.55	4829.14	6266.20
114370.000	1200.00	0.0	0.0	600.90	8420.00	615.94	0.0	616.00	1.70	2.49	4933.69	6456.98
116420.000	2050.00	0.0	0.0	601.70	8420.00	616.15	0.0	616.30	3.22	3.39	3199.01	4693.36
116420.000	2050.00	0.0	0.0	601.70	8420.00	616.16	0.0	616.30	3.21	3.39	3202.15	4699.21
116420.000	2050.00	0.0	0.0	601.70	8420.00	616.25	0.0	616.39	3.09	3.34	3249.82	4788.49
117870.000	1400.00	0.0	0.0	602.00	8420.00	616.63	0.0	616.75	4.55	3.58	3562.94	3949.32
117870.000	1400.00	0.0	0.0	602.00	8420.00	616.63	0.0	616.75	4.53	3.58	3567.36	3955.78
117870.000	1400.00	0.0	0.0	602.00	8420.00	616.70	0.0	616.81	4.30	3.50	3637.27	4058.75

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
119120.000	1250.00	0.0	0.0	602.00	8420.00	617.04	0.0	617.24	4.24	4.06	2905.44	4091.04
119120.000	1250.00	0.0	0.0	602.00	8420.00	617.04	0.0	617.24	4.23	4.05	2907.52	4094.36
119120.000	1250.00	0.0	0.0	602.00	8420.00	617.09	0.0	617.29	4.13	4.02	2936.54	4140.85
119870.000	650.00	0.0	0.0	601.60	8420.00	617.28	0.0	617.38	1.22	2.58	3376.35	7607.98
119870.000	650.00	0.0	0.0	601.60	8420.00	617.28	0.0	617.39	1.22	2.58	3377.38	7611.27
119870.000	650.00	0.0	0.0	601.60	8420.00	617.33	0.0	617.43	1.21	2.57	3390.95	7654.28
119970.000	100.00	0.0	0.0	606.40	8420.00	617.21	0.0	617.44	3.02	3.88	2239.56	4842.33
119970.000	100.00	0.0	0.0	606.40	8420.00	617.21	0.0	617.44	3.02	3.88	2240.35	4844.65
119970.000	100.00	0.0	0.0	606.40	8420.00	617.26	0.0	617.49	2.98	3.86	2252.77	4880.94
119971.000	3.00	613.60	606.50	606.40	8420.00	619.67	0.0	619.81	1.44	3.08	2929.63	7027.33
119971.000	3.00	613.60	606.50	606.40	8420.00	619.67	0.0	619.82	1.44	3.08	2929.77	7027.81
119971.000	3.00	613.60	606.50	606.40	8420.00	619.68	0.0	619.82	1.43	3.07	2931.41	7033.32
120070.000	100.00	0.0	0.0	601.60	8420.00	619.76	0.0	619.83	0.51	2.15	4082.77	11777.74
120070.000	100.00	0.0	0.0	601.60	8420.00	619.76	0.0	619.83	0.51	2.15	4082.91	11778.36
120070.000	100.00	0.0	0.0	601.60	8420.00	619.77	0.0	619.84	0.51	2.15	4084.54	11785.62
120420.000	350.00	0.0	0.0	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1497.98	2281.61
120420.000	350.00	0.0	0.0	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.01	2281.67
120420.000	350.00	0.0	0.0	603.30	8420.00	619.61	0.0	620.10	13.60	5.62	1498.75	2283.35
120421.000	1.00	626.00	629.10	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.05	2281.76
120421.000	1.00	626.00	629.10	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.09	2281.83
120421.000	1.00	626.00	629.10	603.30	8420.00	619.61	0.0	620.10	13.60	5.62	1498.79	2283.44
120422.000	56.00	626.00	629.10	603.30	8420.00	619.68	0.0	620.17	13.35	5.58	1508.11	2304.74
120422.000	56.00	626.00	629.10	603.30	8420.00	619.69	0.0	620.17	13.35	5.58	1508.15	2304.81
120422.000	56.00	626.00	629.10	603.30	8420.00	619.69	0.0	620.17	13.33	5.58	1508.82	2306.35
120423.000	1.00	0.0	0.0	603.30	8420.00	619.69	0.0	620.17	13.32	5.58	1509.30	2307.44
120423.000	1.00	0.0	0.0	603.30	8420.00	619.69	0.0	620.17	13.31	5.58	1509.33	2307.52
120423.000	1.00	0.0	0.0	603.30	8420.00	619.69	0.0	620.18	13.30	5.58	1510.00	2309.05
120620.000	200.00	0.0	0.0	605.50	8420.00	620.10	0.0	620.37	4.32	4.24	2145.01	4048.86
120620.000	200.00	0.0	0.0	605.50	8420.00	620.10	0.0	620.37	4.32	4.24	2145.07	4049.02
120620.000	200.00	0.0	0.0	605.50	8420.00	620.11	0.0	620.38	4.32	4.24	2146.21	4052.15
121520.000	900.00	0.0	0.0	603.40	8420.00	620.57	0.0	620.79	4.90	4.13	3110.40	3802.48
121520.000	900.00	0.0	0.0	603.40	8420.00	620.57	0.0	620.79	4.90	4.13	3110.53	3802.66
121520.000	900.00	0.0	0.0	603.40	8420.00	620.58	0.0	620.79	4.89	4.13	3112.76	3805.74
122420.000	900.00	0.0	0.0	603.80	8420.00	620.89	0.0	621.01	1.41	3.06	3408.23	7095.04
122420.000	900.00	0.0	0.0	603.80	8420.00	620.89	0.0	621.01	1.41	3.06	3408.50	7095.72
122420.000	900.00	0.0	0.0	603.80	8420.00	620.89	0.0	621.01	1.41	3.06	3410.39	7100.62
124120.000	1000.00	0.0	0.0	604.30	8420.00	621.07	0.0	621.16	3.02	3.09	4033.87	4843.84
124120.000	1000.00	0.0	0.0	604.30	8420.00	621.07	0.0	621.16	3.02	3.08	4034.76	4845.33
124120.000	1000.00	0.0	0.0	604.30	8420.00	621.08	0.0	621.16	3.01	3.08	4038.22	4851.18
125520.000	1400.00	0.0	0.0	606.10	8420.00	621.41	0.0	621.52	2.91	3.07	3824.76	4934.85
125520.000	1400.00	0.0	0.0	606.10	8420.00	621.41	0.0	621.52	2.91	3.07	3824.56	4934.55
125520.000	1400.00	0.0	0.0	606.10	8420.00	621.41	0.0	621.53	2.91	3.07	3827.63	4939.11

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
126420.000	950.00	0.0	0.0	608.10	8420.00	621.75	0.0	622.02	10.26	4.84	2429.35	2629.31
126420.000	950.00	0.0	0.0	608.10	8420.00	621.75	0.0	622.02	10.25	4.84	2429.59	2629.59
126420.000	950.00	0.0	0.0	608.10	8420.00	621.75	0.0	622.02	10.24	4.84	2431.04	2631.28

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
107570.000	8420.00	607.00	0.0	0.0	0.0	172.00	107570.00
107570.000	8420.00	609.00	2.00	0.0	0.0	190.80	107570.00
107570.000	8420.00	611.00	2.00	0.0	0.0	1267.60	107570.00
109970.000	8420.00	612.62	0.0	5.62	0.0	117.94	2400.00
109970.000	8420.00	612.64	0.02	3.64	0.0	118.10	2400.00
109970.000	8420.00	612.93	0.30	1.93	0.0	119.91	2400.00
111920.000	8420.00	614.84	0.0	2.23	0.0	659.33	1700.00
111920.000	8420.00	614.85	0.01	2.22	0.0	659.37	1700.00
111920.000	8420.00	615.01	0.16	2.08	0.0	660.01	1700.00
111970.000	8420.00	614.76	0.0	-0.08	0.0	658.99	50.00
111970.000	8420.00	614.77	0.01	-0.08	0.0	659.03	50.00
111970.000	8420.00	614.93	0.16	-0.08	0.0	659.70	50.00
111971.000	8420.00	614.76	0.0	0.00	0.0	658.99	1.00
111971.000	8420.00	614.77	0.01	0.00	0.0	659.03	1.00
111971.000	8420.00	614.93	0.16	0.00	0.0	659.70	1.00
112020.000	8420.00	615.00	0.0	0.24	0.0	659.96	50.00
112020.000	8420.00	615.01	0.01	0.24	0.0	659.99	50.00
112020.000	8420.00	615.15	0.15	0.22	0.0	660.59	50.00
112970.000	8420.00	615.50	0.0	0.50	0.0	650.61	800.00
112970.000	8420.00	615.51	0.01	0.50	0.0	651.07	800.00
112970.000	8420.00	615.63	0.12	0.48	0.0	658.13	800.00
114370.000	8420.00	615.82	0.0	0.32	0.0	964.23	1200.00
114370.000	8420.00	615.83	0.01	0.32	0.0	964.23	1200.00
114370.000	8420.00	615.94	0.11	0.31	0.0	964.31	1200.00
116420.000	8420.00	616.15	0.0	0.33	0.0	536.16	2050.00
116420.000	8420.00	616.16	0.01	0.33	0.0	536.20	2050.00
116420.000	8420.00	616.25	0.09	0.31	0.0	536.87	2050.00
117870.000	8420.00	616.63	0.0	0.47	0.0	1005.37	1400.00
117870.000	8420.00	616.63	0.00	0.47	0.0	1005.45	1400.00
117870.000	8420.00	616.70	0.07	0.45	0.0	1006.63	1400.00
119120.000	8420.00	617.04	0.0	0.41	0.0	568.23	1250.00
119120.000	8420.00	617.04	0.00	0.41	0.0	568.29	1250.00
119120.000	8420.00	617.09	0.05	0.39	0.0	569.19	1250.00
119870.000	8420.00	617.28	0.0	0.25	0.0	304.63	650.00
119870.000	8420.00	617.28	0.00	0.25	0.0	304.71	650.00
119870.000	8420.00	617.33	0.04	0.24	0.0	305.81	650.00
119970.000	8420.00	617.21	0.0	-0.07	0.0	272.00	100.00
119970.000	8420.00	617.21	0.00	-0.07	0.0	272.00	100.00
119970.000	8420.00	617.26	0.05	-0.07	0.0	272.00	100.00

Corp limits

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
119971.000	8420.00	619.67	0.0	2.46	0.0	290.00	3.00
119971.000	8420.00	619.67	0.00	2.46	0.0	290.00	3.00
119971.000	8420.00	619.68	0.01	2.42	0.0	290.00	3.00
120070.000	8420.00	619.76	0.0	0.09	0.0	290.00	100.00
120070.000	8420.00	619.76	0.00	0.09	0.0	290.00	100.00
120070.000	8420.00	619.77	0.01	0.09	0.0	290.00	100.00
120420.000	8420.00	619.60	0.0	-0.16	0.0	130.80	350.00
120420.000	8420.00	619.60	0.00	-0.16	0.0	130.80	350.00
120420.000	8420.00	619.61	0.01	-0.16	0.0	130.80	350.00
120421.000	8420.00	619.60	0.0	0.00	0.0	130.80	1.00
120421.000	8420.00	619.60	0.00	0.00	0.0	130.80	1.00
120421.000	8420.00	619.61	0.01	0.00	0.0	130.80	1.00
120422.000	8420.00	619.68	0.0	0.08	0.0	130.81	56.00
120422.000	8420.00	619.69	0.00	0.08	0.0	130.81	56.00
120422.000	8420.00	619.69	0.01	0.08	0.0	130.81	56.00
120423.000	8420.00	619.69	0.0	0.00	0.0	130.81	1.00
120423.000	8420.00	619.69	0.00	0.00	0.0	130.81	1.00
120423.000	8420.00	619.69	0.01	0.00	0.0	130.81	1.00
120620.000	8420.00	620.10	0.0	0.42	0.0	247.23	200.00
120620.000	8420.00	620.10	0.00	0.42	0.0	247.23	200.00
120620.000	8420.00	620.11	0.00	0.41	0.0	247.24	200.00
121520.000	8420.00	620.57	0.0	0.47	0.0	538.04	900.00
121520.000	8420.00	620.57	0.00	0.47	0.0	538.05	900.00
121520.000	8420.00	620.58	0.00	0.47	0.0	538.09	900.00
122420.000	8420.00	620.89	0.0	0.32	0.0	554.32	900.00
122420.000	8420.00	620.89	0.00	0.32	0.0	554.33	900.00
122420.000	8420.00	620.89	0.00	0.32	0.0	554.44	900.00
124120.000	8420.00	621.07	0.0	0.19	0.0	1182.93	1000.00
124120.000	8420.00	621.07	0.00	0.19	0.0	1182.95	1000.00
124120.000	8420.00	621.08	0.00	0.19	0.0	1183.00	1000.00
125520.000	8420.00	621.41	0.0	0.34	0.0	1175.00	1400.00
125520.000	8420.00	621.41	0.00	0.34	0.0	1174.99	1400.00
125520.000	8420.00	621.41	0.00	0.34	0.0	1175.05	1400.00
126420.000	8420.00	621.75	0.0	0.34	0.0	989.76	950.00
126420.000	8420.00	621.75	0.00	0.34	0.0	989.81	950.00
126420.000	8420.00	621.75	0.00	0.34	0.0	990.07	950.00

SUMMARY OF ERRORS

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: CHESANING, VILLAGE

3) WATERCOURSE: SHIAWASSEE RIVER

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

SHIAWASSEE RIVER

THROUGH THE VILLAGE OF

CHESANING, MICHIGAN

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001
(616) 385-0011

October 15, 1980

Mr. Daniel H. Morgan, P.E.
Flood Insurance Unit
Flood Plain Management Section
Water Management Division
Michigan Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

RECEIVED
OCT 15 1980
WATER MANAGEMENT

Re: Village of Cheasaning Flood Insurance Study

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the Shiawassee River through the Village of Cheasaning, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood
2. Summary tables for 10-, 50-, 100- and 500-year floods
3. IPLOT for 100-year flow
4. Topographic map
5. Hydraulic Analysis Report

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES, INC.

William J. McDonough

William J. McDonough, P.E.
Associate

WJM/tk

Enclosure: as listed above

HYDRAULIC ANALYSIS

1. INTRODUCTION

The stream being studied is the Shiawassee River in the Village of Chesaning, Michigan. The flows used in this study are the prorated flows from the gage of Fergus which have been approved by the Michigan Department of Natural Resources and shown below:

	Peak Flows (cfs)			
Drainage Area (Mi^2)	10-year	50-year	100-year	500-year
620	5710	7650	8420	10100

gage need

OK Hope

The project managers for the Flood Insurance Studies are William McDonough and Duane Ellis.

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100-, and 500- year were computed through the HEC-2 Computer Program, developed by the U. S. Army, Corps of Engineers (Ref. 1).

2.1 Cross Sections

The cross sections used in this study were obtained by combining the results from field ground survey for channel portion and aerial photo survey for flood plain portion. The field surveys were performed in August of 1979. The locations of cross sections are shown in Table 1. Two dams and one bridge are within the study limit. Because the opening of the bridge could not be approximated by a trapezoid, it was coded as normal bridge. The first dam was regarded as step dam while the second dam was treated by special bridge routine.

2.2 Roughness Coefficients

The roughness coefficients were determined from field description, which was made in August of 1979, and the aerial photographs. The material shown on page 101 to page 123 in Chow's book (Ref. 2) served as a general reference. The roughness coefficients are in the range of 0.03 to 0.045 and 0.03 to 0.1 for channel and flood plain, respectively.

2.3 Starting Point and Starting Elevation

GSGS Topo shows several major restrictions between their starting location and the gage 4 miles d/s

The backwater computations started at a location 4,700 feet downstream from the corporate limit. Figure 1 shows the convergence about 1,500 feet downstream from the study limit. Therefore, the starting elevation of 609.0 and the corresponding energy slope of 0.00147 were used in the slope-area method of all flows.

2.4 High Water Mark

The US weather Br records as noted in USGS's Publication 1677 shows this to be the 1926 Flood stage not the 1946

Section "N" 120420

There is a high water mark which exists at the Broad Street Bridge. From the Department of Natural Resources files, the water elevation was recorded at 621.7 feet for the flood of March 23, 1946. book shows 770 cfs However, according to the USGS Water Data Report, the maximum flow at Fergus gaging station for the year 1946 was only 3900 cfs and occurred at March 6, instead of March 23. For a flow of only 3900 cfs, the water cannot come out to an elevation of 621.7 feet at the Broad Street Bridge by our model. This high water mark, therefore, is rejected.

621.7
100 yr 619.6
2.1

Near Wildwood Cemetery File 618005 shows water regularly exceeds elev 620 to 625 This is about 2 miles upstream 100 yr profile is approx elev 620 ~ 1.7 ft lower

Reference

1. HEC-2 Water Surface Profiles, Users Manual, Hydrologic Engineering Center, U. S. Army, Corps of Engineers, August 1979.
2. Open Channel Hydraulics, V. T. Chow, McGraw-Hill, New York, 1959.

TABLE 1

LOCATIONS OF CROSS SECTIONS

SECTION	SECNO	LOCATION AND DESCRIPTION
A	107570	4700' D/S from corporate limit Manufactured
B	109970	2400' U/S from A
C	111920	50' D/S from First Dam Manufactured
D	111970 111971	First Dam, in back of Farmer Peet Packing Co., regarded as Step Dam Dam Crest = 602.8
E	112020	50' U/S from First Dam Manufactured
F	112970	800' U/S from E
G	114370	1200' U/S from F
H	116420	2050' U/S from G Manufactured
I	117870	1400' U/S from H
J	119120	1250' U/S from I Manufactured
K	119870	100' U/S from Second Dam
L	119970 119971	Second Dam, NE of Broad Street Bridge, Dam Crest = 613.6
M	120070	100' U/S of Second Dam
N	120420 120421 120422 120423	Broad Street Bridge TR = 629.1, LC = 623.5 Width - 56, Length = 141
O	120620	200' U/S from U/S face of Broad Street Bridge
P	121520	900' U/S from O
Q	122420	900' U/S from P Manufactured

SECTION	SECNO	LOCATION AND DESCRIPTION
R	124120	1000' U/S from Q
S	125520	1400' U/S from R Manufactured
T	126420	950' U/S from S

Sheawassee River – Chesaning 081480

Based upon S_0 [illegible] 609 [illegible] low
if backwater [illegible] stage
may easily go as high as 615

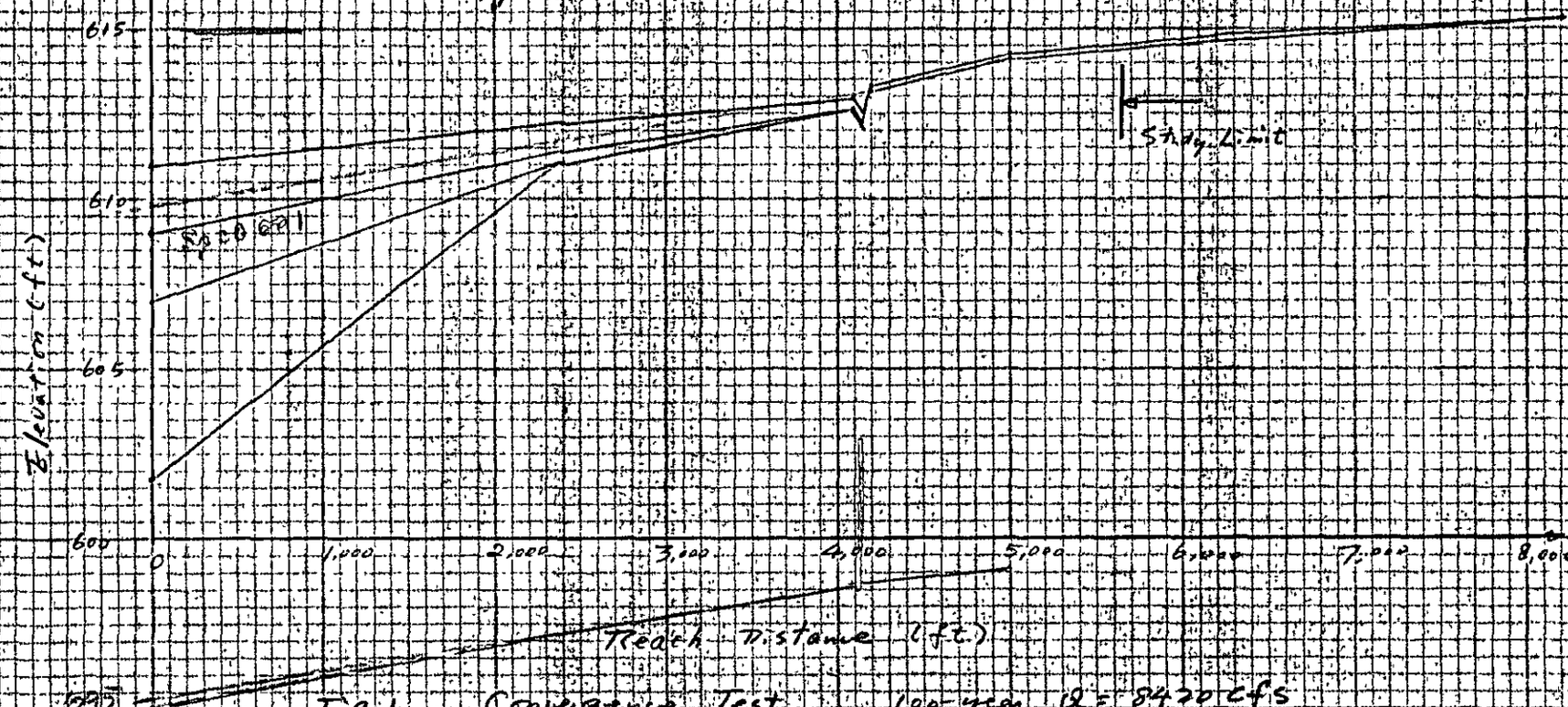
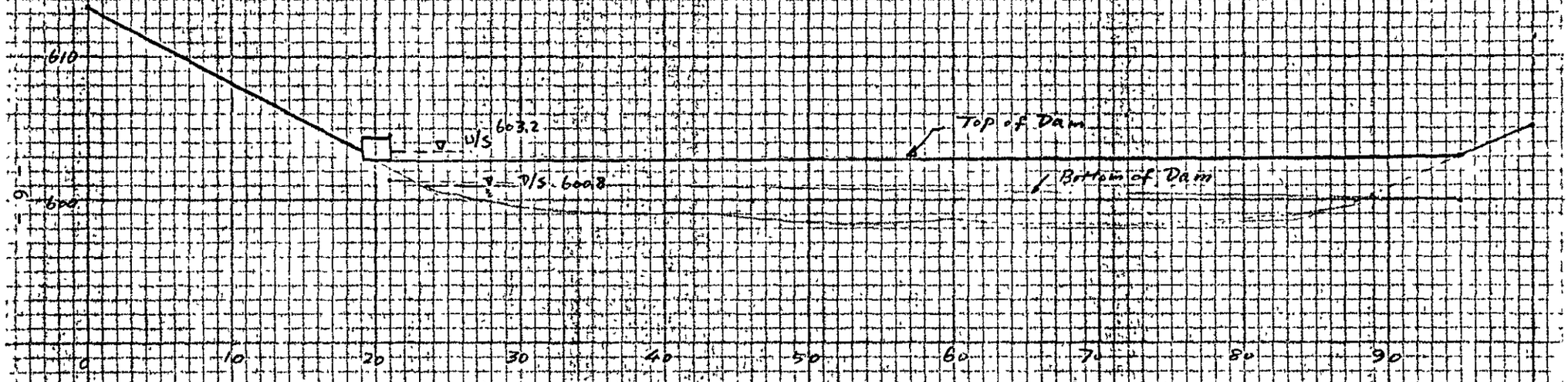
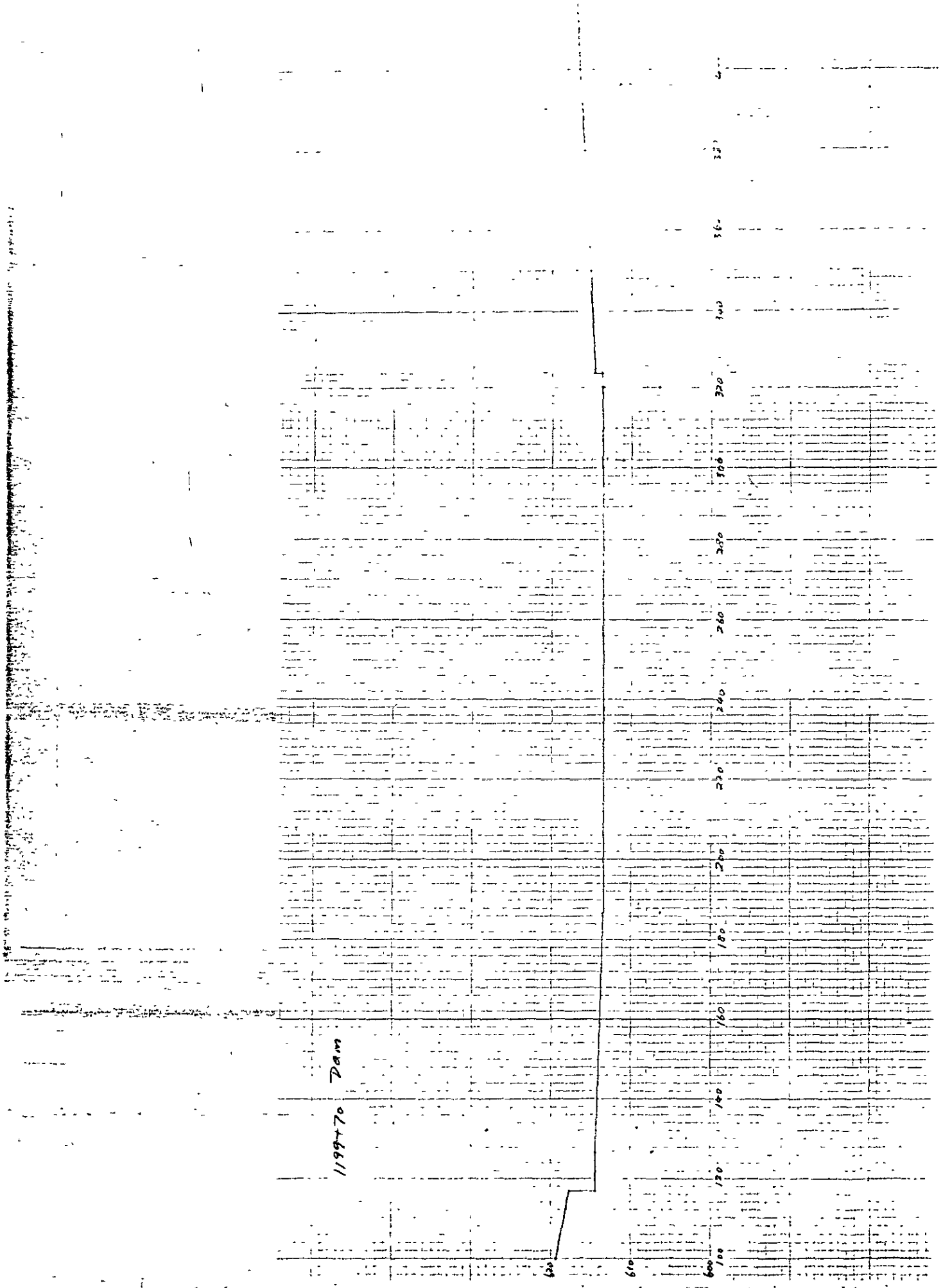


Fig 1. Convergence Test 100-year Q = 8420 cfs

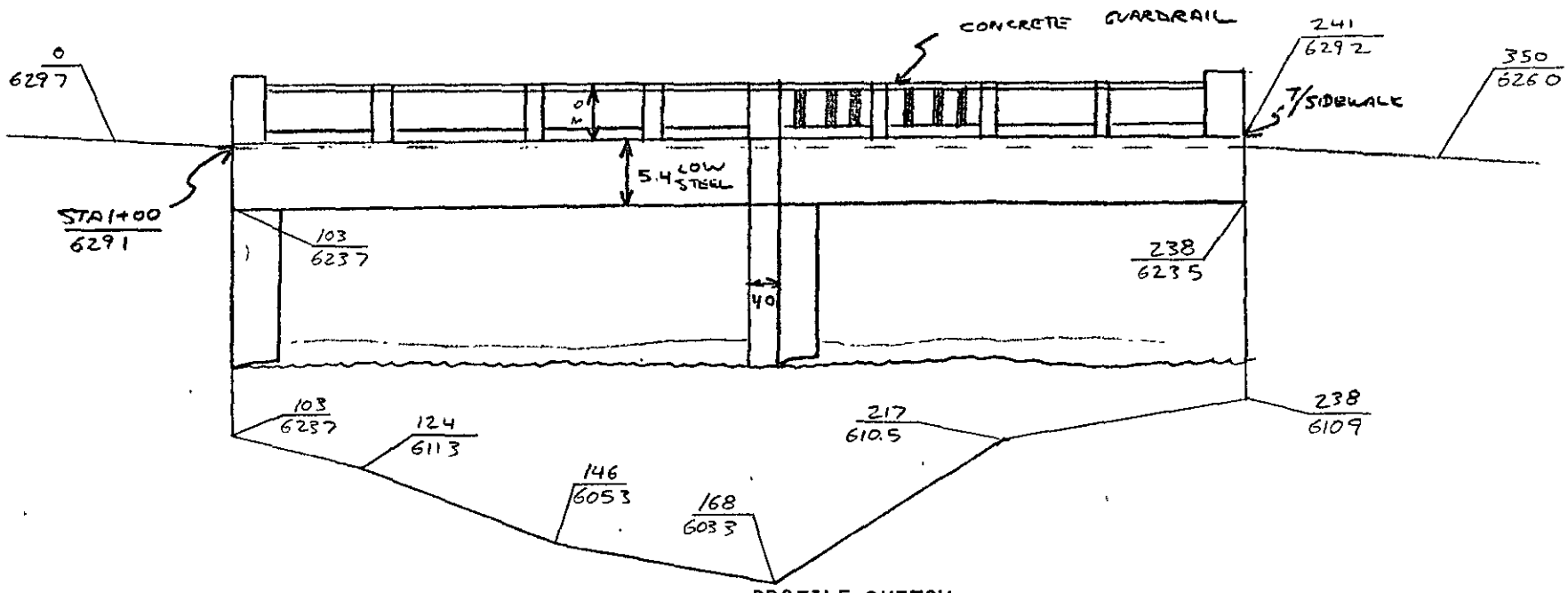
BRIDGE DATA

111970 - Dam


610
600
603.2
U/S
D/S 600.8
Top of Dam
Bottom of Dam
0
10
20
30
40
50
60
70
80
90


1199+70 Dam
100
120
140
160
180
200
220
240
260
280
300
320
340
360
600
610
620

Community: CHESANING	Structure: BROAD ST BRIDGE (M-57)	Type: CONCRETE I-BEAM	Station: 1204+20



PROFILE SKETCH
(Looking Downstream)

Length: 141.0	Width: 56.0	Skew: 15.0 × 56.0	Water Elevation: 613.80
No. of Piers: 1	Width of Piers: 4.0	Shape of Piers:	

Notes:

632.70
18.90
613.80

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

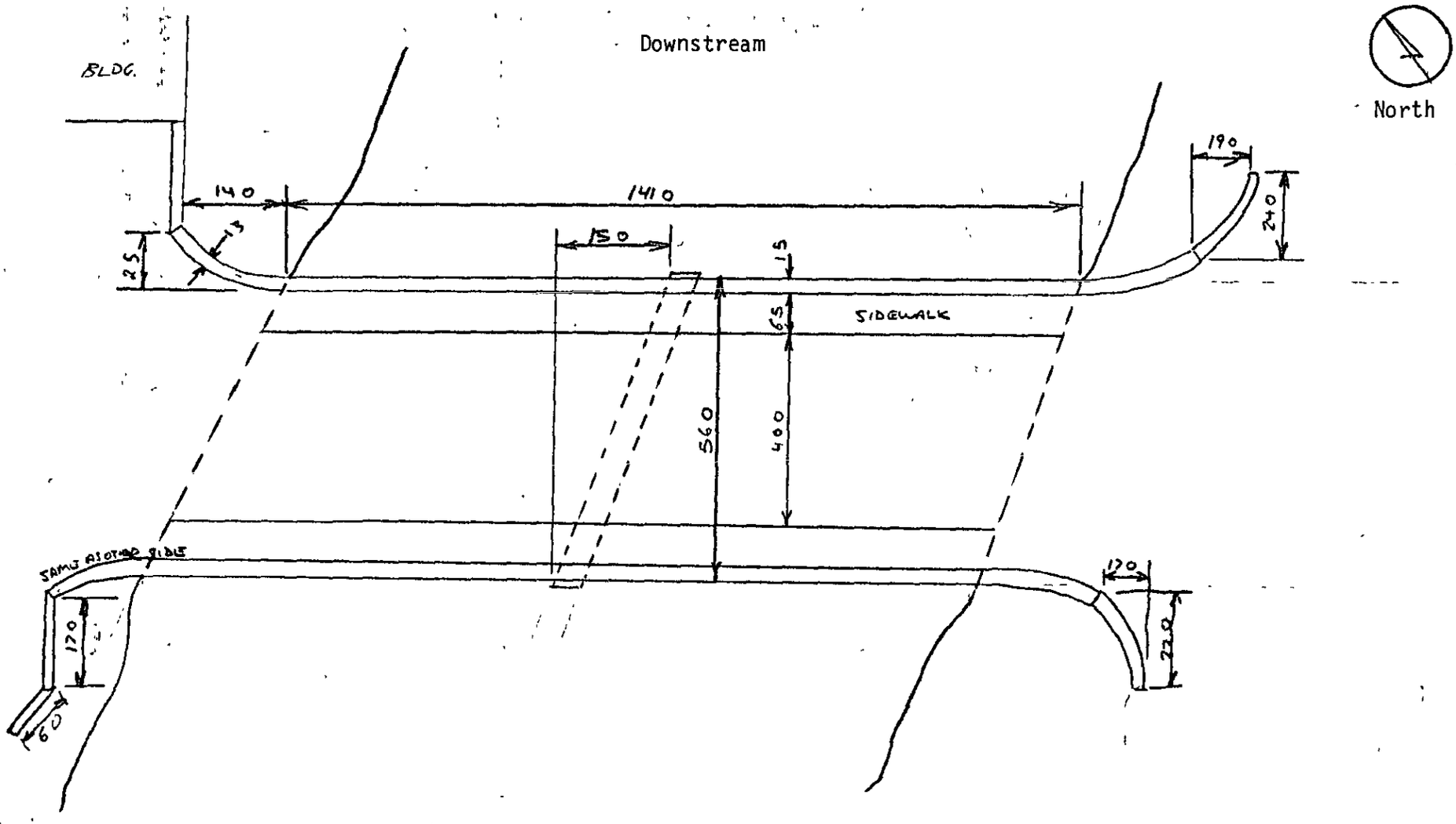
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: J.S.C.

Date: 9/19/79

Sheet 1 of 2

Community: CHESANING	Structure: BROAD ST BRIDGE	Type: CONCRETE I-BEAM	Station: 1204+20



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

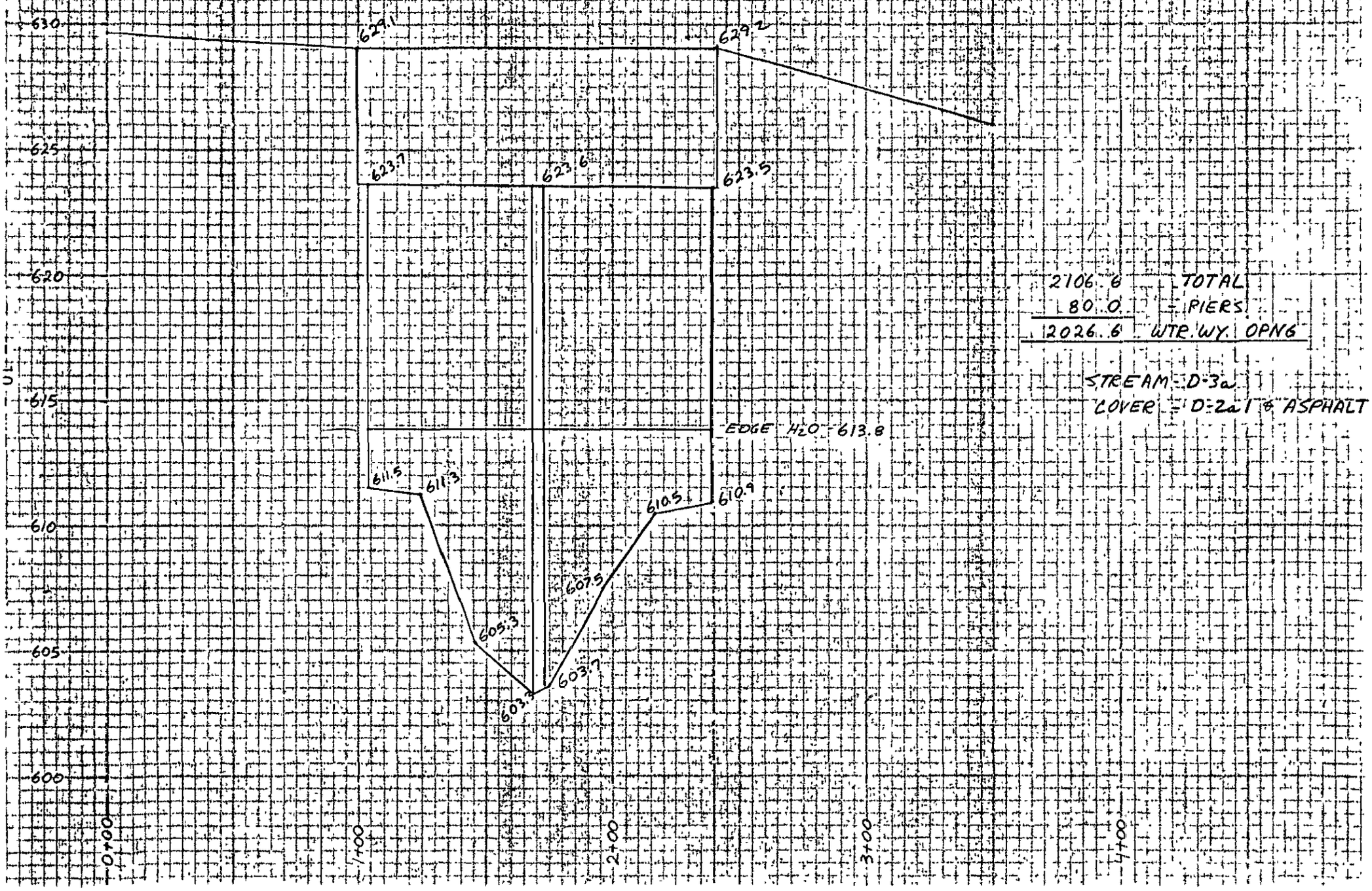
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC

Date: 9/19/79

Sheet 2 of 2

CITY OF CHESANING
SHIAWASSEE RIVER
STA. 1204+20 BROAD ST. BRIDGE
9/19/79



2106.6 TOTAL
80.0 - PIERS
2026.6 WTR. WY. OPNG

STREAM - D-3a
COVER - D-2a 1" ASPHALT

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: CHESANING, VILLAGE

3) WATERCOURSE: SHIAWASSEE RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR     01,02,03
  MODIFICATION -   50,51,52,53
**************************************************
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4 Summary printout

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

SHIWASSEE RIVER

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	107570.000	107570.00	0.0	0.0	595.20	5710.00	607.00	0.0	607.36	14.59	4.79	1202.60	1495.00
	107570.000	107570.00	0.0	0.0	595.20	7650.00	608.43	0.0	608.87	14.89	5.36	1457.54	1982.20
A	107570.000	107570.00	0.0	0.0	595.20	8420.00	609.00	0.0	609.47	14.70	5.52	1565.40	2196.36
	107570.000	107570.00	0.0	0.0	595.20	10100.00	610.09	0.0	610.62	14.63	5.87	1880.71	2640.52
	109970.000	2400.00	0.0	0.0	597.20	5710.00	610.48	0.0	611.07	15.90	6.21	942.94	1432.08
	109970.000	2400.00	0.0	0.0	597.20	7650.00	612.07	0.0	612.85	17.72	7.17	1115.43	1817.53
B	109970.000	2400.00	0.0	0.0	597.20	8420.00	612.64	0.0	613.49	18.29	7.51	1181.66	1968.67
	109970.000	2400.00	0.0	0.0	597.20	10100.00	613.76	0.0	614.76	19.47	8.18	1318.03	2289.06
	111920.000	1700.00	0.0	0.0	598.50	5710.00	612.47	0.0	612.82	7.05	4.89	1729.49	2151.06
	111920.000	1700.00	0.0	0.0	598.50	7650.00	614.23	0.0	614.57	6.34	5.10	2821.04	3038.17
C	111920.000	1700.00	0.0	0.0	598.50	8420.00	614.85	0.0	615.19	6.05	5.14	3232.76	3424.25
	111920.000	1700.00	0.0	0.0	598.50	10100.00	616.10	0.0	616.42	5.56	5.22	4059.11	4284.70
	111970.000	50.00	0.0	0.0	602.80	5710.00	612.33	0.0	612.94	10.39	6.50	1379.58	1771.72
	111970.000	50.00	0.0	0.0	602.80	7650.00	614.13	0.0	614.66	7.80	6.40	2483.94	2738.98
D	111970.000	50.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.07	3161.95
	111970.000	50.00	0.0	0.0	602.80	10100.00	616.03	0.0	616.49	6.06	6.32	3738.63	4102.34
	111971.000	1.00	0.0	0.0	602.80	5710.00	612.33	0.0	612.94	10.39	6.50	1379.64	1771.78
	111971.000	1.00	0.0	0.0	602.80	7650.00	614.13	0.0	614.66	7.80	6.40	2484.01	2739.05
	111971.000	1.00	0.0	0.0	602.80	8420.00	614.77	0.0	615.27	7.09	6.35	2903.13	3162.02
	111971.000	1.00	0.0	0.0	602.80	10100.00	616.03	0.0	616.49	6.06	6.32	3739.00	4102.78
	112020.000	50.00	0.0	0.0	598.50	5710.00	612.69	0.0	613.01	6.42	4.73	1851.22	2253.00
	112020.000	50.00	0.0	0.0	598.50	7650.00	614.40	0.0	614.72	5.88	4.96	2934.45	3153.55
E	112020.000	50.00	0.0	0.0	598.50	8420.00	615.01	0.0	615.32	5.66	5.01	3334.97	3538.59
	112020.000	50.00	0.0	0.0	598.50	10100.00	616.23	0.0	616.53	5.27	5.11	4146.87	4400.36
	112970.000	800.00	0.0	0.0	599.10	5710.00	613.23	0.0	613.35	2.60	3.03	3241.25	3543.02
	112970.000	800.00	0.0	0.0	599.10	7650.00	614.91	0.0	615.04	2.58	3.31	4204.55	4761.05
F	112970.000	800.00	0.0	0.0	599.10	8420.00	615.51	0.0	615.64	2.57	3.40	4585.84	5250.43
	112970.000	800.00	0.0	0.0	599.10	10100.00	616.71	0.0	616.85	2.57	3.59	5388.40	6298.04
	114370.000	1200.00	0.0	0.0	600.90	5710.00	613.58	0.0	613.70	3.43	3.12	2665.92	3084.94
	114370.000	1200.00	0.0	0.0	600.90	7650.00	615.25	0.0	615.31	2.09	2.66	4266.11	5293.52
G	114370.000	1200.00	0.0	0.0	600.90	8420.00	615.83	0.0	615.89	1.81	2.55	4829.14	6266.20
	114370.000	1200.00	0.0	0.0	600.90	10100.00	617.01	0.0	617.07	1.41	2.38	5971.86	8515.40

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
H	116420.000	2050.00	0.0	0.0	601.70	5710.00	614.21	0.0	614.35	3.55	3.22	2191.03	3029.69
	116420.000	2050.00	0.0	0.0	601.70	7650.00	615.63	0.0	615.77	3.33	3.36	2920.48	4193.34
	116420.000	2050.00	0.0	0.0	601.70	8420.00	616.16	0.0	616.30	3.21	3.39	3202.15	4699.21
	116420.000	2050.00	0.0	0.0	601.70	10100.00	617.26	0.0	617.40	2.95	3.42	3797.37	5877.85
I	117870.000	1400.00	0.0	0.0	602.00	5710.00	614.82	0.0	615.08	9.21	4.71	1788.41	1881.82
	117870.000	1400.00	0.0	0.0	602.00	7650.00	616.14	0.0	616.28	5.48	3.85	3071.59	3268.30
	117870.000	1400.00	0.0	0.0	602.00	8420.00	616.63	0.0	616.75	4.53	3.58	3567.36	3955.78
	117870.000	1400.00	0.0	0.0	602.00	10100.00	617.67	0.0	617.76	3.20	3.13	4617.20	5647.22
J	119120.000	1250.00	0.0	0.0	602.00	5710.00	615.57	0.0	615.74	3.79	3.55	2096.62	2932.72
	119120.000	1250.00	0.0	0.0	602.00	7650.00	616.62	0.0	616.82	4.24	3.97	2663.03	3714.92
	119120.000	1250.00	0.0	0.0	602.00	8420.00	617.04	0.0	617.24	4.23	4.05	2907.52	4094.36
	119120.000	1250.00	0.0	0.0	602.00	10100.00	617.96	0.0	618.16	4.11	4.17	3434.84	4983.82
K	119870.000	650.00	0.0	0.0	601.60	5710.00	615.79	0.0	615.85	0.84	1.98	2950.19	6241.02
	119870.000	650.00	0.0	0.0	601.60	7650.00	616.87	0.0	616.96	1.12	2.42	3252.03	7212.51
	119870.000	650.00	0.0	0.0	601.60	8420.00	617.28	0.0	617.39	1.22	2.58	3377.38	7611.27
	119870.000	650.00	0.0	0.0	601.60	10100.00	618.19	0.0	618.32	1.40	2.87	3663.72	8521.91
L	119970.000	100.00	0.0	0.0	606.40	5710.00	615.75	0.0	615.89	2.31	3.08	1866.70	3755.52
	119970.000	100.00	0.0	0.0	606.40	7650.00	616.80	0.0	617.01	2.86	3.68	2129.43	4523.89
	119970.000	100.00	0.0	0.0	606.40	8420.00	617.21	0.0	617.44	3.02	3.88	2240.35	4844.65
	119970.000	100.00	0.0	0.0	606.40	10100.00	618.11	0.0	618.38	3.27	4.26	2484.32	5585.43
	119971.000	3.00	613.60	606.50	606.40	5710.00	618.37	0.0	618.46	0.96	2.35	2558.74	5820.07
	119971.000	3.00	613.60	606.50	606.40	7650.00	619.33	0.0	619.45	1.31	2.88	2830.11	6696.19
	119971.000	3.00	613.60	606.50	606.40	8420.00	619.67	0.0	619.82	1.44	3.08	2929.77	7027.81
	119971.000	3.00	613.60	606.50	606.40	10100.00	620.38	0.0	620.56	1.70	3.47	3135.36	7736.75
M	120070.000	100.00	0.0	0.0	601.60	5710.00	618.43	0.0	618.47	0.32	1.61	3697.48	10142.22
	120070.000	100.00	0.0	0.0	601.60	7650.00	619.41	0.0	619.47	0.46	2.01	3980.53	11326.13
	120070.000	100.00	0.0	0.0	601.60	8420.00	619.76	0.0	619.83	0.51	2.15	4082.91	11778.36
	120070.000	100.00	0.0	0.0	601.60	10100.00	620.49	0.0	620.58	0.63	2.46	4294.39	12733.90
N	120420.000	350.00	0.0	0.0	603.30	5710.00	618.34	0.0	618.62	8.90	4.28	1332.72	1913.62
	120420.000	350.00	0.0	0.0	603.30	7650.00	619.27	0.0	619.70	12.28	5.26	1454.53	2183.11
	120420.000	350.00	0.0	0.0	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.01	2281.67
	120420.000	350.00	0.0	0.0	603.30	10100.00	620.28	0.0	620.91	16.48	6.36	1587.35	2487.90
	120421.000	1.00	626.00	629.10	603.30	5710.00	618.34	0.0	618.62	8.90	4.28	1332.80	1913.79
	120421.000	1.00	626.00	629.10	603.30	7650.00	619.27	0.0	619.70	12.28	5.26	1454.59	2183.24
	120421.000	1.00	626.00	629.10	603.30	8420.00	619.60	0.0	620.09	13.62	5.62	1498.09	2281.83
	120421.000	1.00	626.00	629.10	603.30	10100.00	620.28	0.0	620.91	16.48	6.36	1587.39	2487.97
	120422.000	56.00	626.00	629.10	603.30	5710.00	618.39	0.0	618.67	8.77	4.26	1339.38	1928.08
	120422.000	56.00	626.00	629.10	603.30	7650.00	619.34	0.0	619.77	12.05	5.23	1463.66	2203.70
	120422.000	56.00	626.00	629.10	603.30	8420.00	619.69	0.0	620.17	13.35	5.58	1508.15	2304.81
	120422.000	56.00	626.00	629.10	603.30	10100.00	620.39	0.0	621.01	16.09	6.31	1600.27	2518.13
	120423.000	1.00	0.0	0.0	603.30	5710.00	618.39	0.0	618.67	8.76	4.26	1339.92	1929.25
	120423.000	1.00	0.0	0.0	603.30	7650.00	619.35	0.0	619.77	12.03	5.22	1464.62	2205.86
	120423.000	1.00	0.0	0.0	603.30	8420.00	619.69	0.0	620.17	13.31	5.58	1509.33	2307.52
	120423.000	1.00	0.0	0.0	603.30	10100.00	620.39	0.0	621.01	16.06	6.31	1601.28	2520.48

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	120620.000	200.00	0.0	0.0	605.50	5710.00	618.63	0.0	618.81	3.36	3.39	1781.97	3113.11
	120620.000	200.00	0.0	0.0	605.50	7650.00	619.71	0.0	619.95	4.08	4.01	2047.65	3787.27
O	120620.000	200.00	0.0	0.0	605.50	8420.00	620.10	0.0	620.37	4.32	4.24	2145.07	4049.02
	120620.000	200.00	0.0	0.0	605.50	10100.00	620.92	0.0	621.25	4.78	4.68	2348.57	4619.86
	121520.000	900.00	0.0	0.0	603.40	5710.00	618.97	0.0	619.15	4.39	3.60	2262.05	2724.22
P	121520.000	900.00	0.0	0.0	603.40	7650.00	620.14	0.0	620.35	4.80	4.00	2880.32	3491.52
	121520.000	900.00	0.0	0.0	603.40	8420.00	620.57	0.0	620.79	4.90	4.13	3110.53	3802.66
	121520.000	900.00	0.0	0.0	603.40	10100.00	621.47	0.0	621.70	5.04	4.37	3596.51	4500.39
	122420.000	900.00	0.0	0.0	603.80	5710.00	619.26	0.0	619.35	1.29	2.65	2555.86	5029.09
Q	122420.000	900.00	0.0	0.0	603.80	7650.00	620.45	0.0	620.57	1.39	2.97	3169.44	6487.75
	122420.000	900.00	0.0	0.0	603.80	8420.00	620.89	0.0	621.01	1.41	3.06	3408.50	7095.72
	122420.000	900.00	0.0	0.0	603.80	10100.00	621.79	0.0	621.92	1.42	3.23	3921.51	8466.25
	124120.000	1000.00	0.0	0.0	604.30	5710.00	619.40	0.0	619.59	6.63	4.19	2110.39	2217.63
R	124120.000	1000.00	0.0	0.0	604.30	7650.00	620.63	0.0	620.73	3.65	3.32	3510.65	4003.58
	124120.000	1000.00	0.0	0.0	604.30	8420.00	621.07	0.0	621.16	3.02	3.08	4034.76	4845.33
	124120.000	1000.00	0.0	0.0	604.30	10100.00	621.98	0.0	622.05	2.18	2.73	5117.25	6838.72
	125520.000	1400.00	0.0	0.0	606.10	5710.00	620.07	0.0	620.21	3.45	3.08	2273.62	3072.39
S	125520.000	1400.00	0.0	0.0	606.10	7650.00	621.03	0.0	621.15	3.16	3.13	3378.60	4305.62
	125520.000	1400.00	0.0	0.0	606.10	8420.00	621.41	0.0	621.52	2.91	3.07	3824.56	4934.55
	125520.000	1400.00	0.0	0.0	606.10	10100.00	622.23	0.0	622.32	2.40	2.92	4793.82	6516.96
	126420.000	950.00	0.0	0.0	608.10	5710.00	620.48	0.0	620.86	13.83	5.14	1318.31	1535.35
T	126420.000	950.00	0.0	0.0	608.10	7650.00	621.40	0.0	621.71	11.53	5.01	2093.09	2252.64
	126420.000	950.00	0.0	0.0	608.10	8420.00	621.75	0.0	622.02	10.25	4.84	2429.59	2629.59
	126420.000	950.00	0.0	0.0	608.10	10100.00	622.50	0.0	622.71	7.73	4.41	3228.26	3632.40

SHIWASSEE RIVER

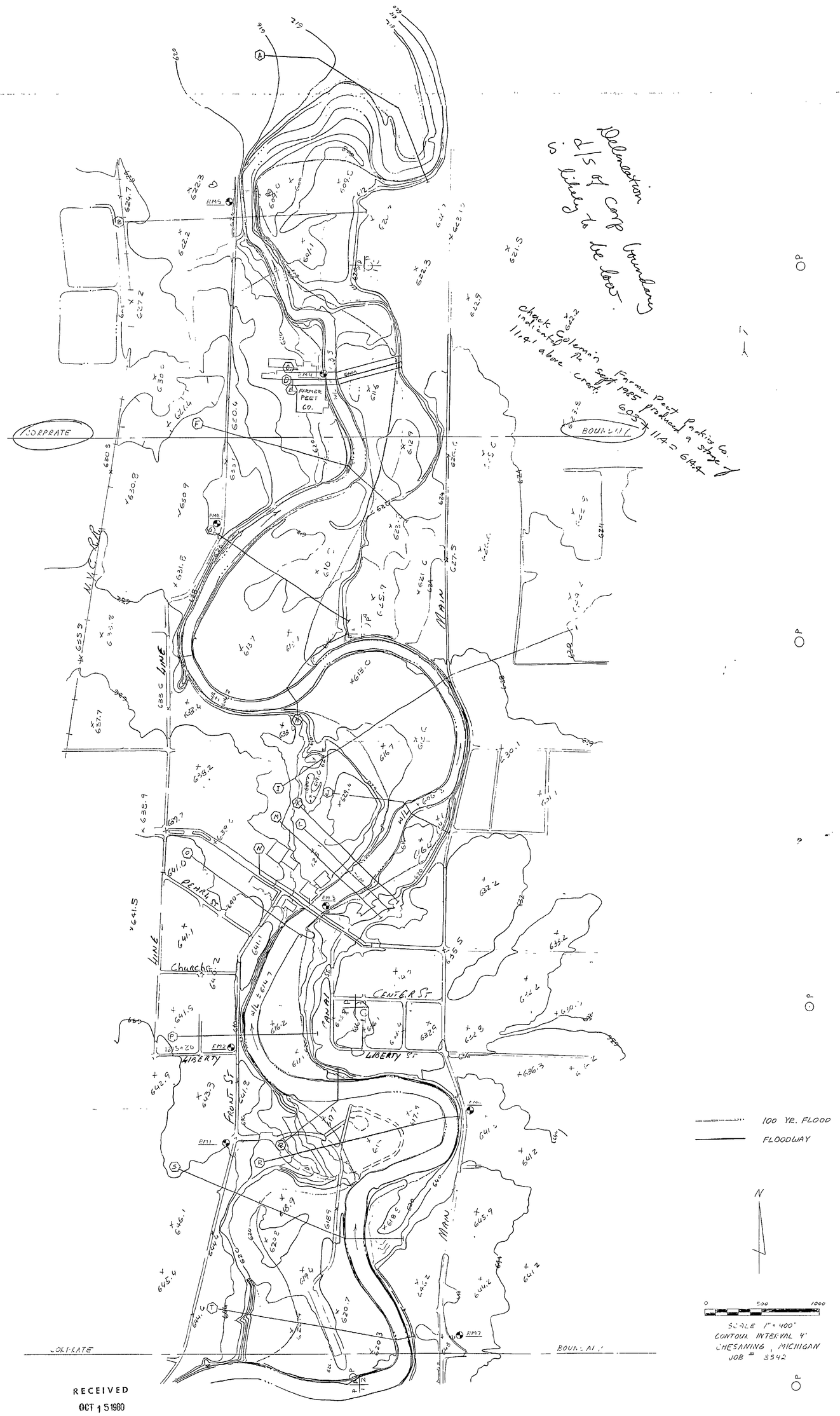
SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	107570.000	5710.00	607.00	0.0	0.0	-2.00	172.00	107570.00
	107570.000	7650.00	608.43	1.43	0.0	-0.57	185.41	107570.00
A	107570.000	8420.00	609.00	0.57	0.0	0.0	190.80	107570.00
	107570.000	10100.00	610.09	1.09	0.0	1.09	1265.43	107570.00
	109970.000	5710.00	610.48	0.0	3.48	0.0	103.52	2400.00
	109970.000	7650.00	612.07	1.58	3.64	0.0	114.24	2400.00
B	109970.000	8420.00	612.64	0.57	3.64	0.0	118.10	2400.00
	109970.000	10100.00	613.76	1.12	3.67	0.0	124.19	2400.00
	111920.000	5710.00	612.47	0.0	1.99	0.0	543.12	1700.00
	111920.000	7650.00	614.23	1.76	2.16	0.0	656.84	1700.00
C	111920.000	8420.00	614.85	0.63	2.22	0.0	659.37	1700.00
	111920.000	10100.00	616.10	1.25	2.34	0.0	664.41	1700.00
	111970.000	5710.00	612.33	0.0	-0.14	0.0	527.49	50.00
	111970.000	7650.00	614.13	1.80	-0.10	0.0	656.46	50.00
D	111970.000	8420.00	614.77	0.64	-0.08	0.0	659.03	50.00
	111970.000	10100.00	616.03	1.26	-0.07	0.0	664.14	50.00
	111971.000	5710.00	612.33	0.0	0.00	0.0	527.51	1.00
	111971.000	7650.00	614.13	1.80	0.00	0.0	656.46	1.00
	111971.000	8420.00	614.77	0.64	0.00	0.0	659.03	1.00
	111971.000	10100.00	616.03	1.26	0.00	0.0	664.14	1.00
	112020.000	5710.00	612.69	0.0	0.36	0.0	567.28	50.00
	112020.000	7650.00	614.40	1.71	0.27	0.0	657.54	50.00
E	112020.000	8420.00	615.01	0.61	0.24	0.0	659.99	50.00
	112020.000	10100.00	616.23	1.23	0.20	0.0	664.95	50.00
	112970.000	5710.00	613.23	0.0	0.54	0.0	547.70	800.00
	112970.000	7650.00	614.91	1.68	0.52	0.0	615.01	800.00
F	112970.000	8420.00	615.51	0.59	0.50	0.0	651.07	800.00
	112970.000	10100.00	616.71	1.20	0.47	0.0	694.87	800.00
	114370.000	5710.00	613.58	0.0	0.35	0.0	962.65	1200.00
	114370.000	7650.00	615.25	1.66	0.33	0.0	963.82	1200.00
G	114370.000	8420.00	615.83	0.58	0.32	0.0	964.23	1200.00
	114370.000	10100.00	617.01	1.18	0.31	0.0	965.06	1200.00
	116420.000	5710.00	614.21	0.0	0.62	0.0	496.89	2050.00
	116420.000	7650.00	615.63	1.43	0.39	0.0	527.16	2050.00
H	116420.000	8420.00	616.16	0.53	0.33	0.0	536.20	2050.00
	116420.000	10100.00	617.26	1.10	0.25	0.0	544.46	2050.00
	117870.000	5710.00	614.82	0.0	0.61	0.0	941.23	1400.00
	117870.000	7650.00	616.14	1.32	0.51	0.0	997.04	1400.00
I	117870.000	8420.00	616.63	0.50	0.47	0.0	1005.45	1400.00
	117870.000	10100.00	617.67	1.03	0.41	0.0	1023.01	1400.00
	119120.000	5710.00	615.57	0.0	0.75	0.0	503.17	1250.00
	119120.000	7650.00	616.62	1.05	0.48	0.0	560.72	1250.00
J	119120.000	8420.00	617.04	0.42	0.41	0.0	568.29	1250.00
	119120.000	10100.00	617.96	0.92	0.29	0.0	584.31	1250.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	119870.000	5710.00	615.79	0.0	0.22	0.0	271.93	650.00
	119870.000	7650.00	616.87	1.07	0.25	0.0	294.43	650.00
K	119870.000	8420.00	617.28	0.42	0.25	0.0	304.71	650.00
	119870.000	10100.00	618.19	0.91	0.23	0.0	317.70	650.00
	119970.000	5710.00	615.75	0.0	-0.05	0.0	235.18	100.00
	119970.000	7650.00	616.80	1.05	-0.07	0.0	263.99	100.00
L	119970.000	8420.00	617.21	0.41	-0.07	0.0	272.00	100.00
	119970.000	10100.00	618.11	0.89	-0.09	0.0	276.31	100.00
	119971.000	5710.00	618.37	0.0	2.63	0.0	279.15	3.00
	119971.000	7650.00	619.33	0.95	2.53	0.0	289.36	3.00
	119971.000	8420.00	619.67	0.34	2.46	0.0	290.00	3.00
	119971.000	10100.00	620.38	0.71	2.28	0.0	290.00	3.00
	120070.000	5710.00	618.43	0.0	0.05	0.0	288.18	100.00
M	120070.000	7650.00	619.41	0.98	0.08	0.0	290.00	100.00
	120070.000	8420.00	619.76	0.35	0.09	0.0	290.00	100.00
	120070.000	10100.00	620.49	0.73	0.11	0.0	290.00	100.00
	120420.000	5710.00	618.34	0.0	0.09	0.0	130.74	350.00
	120420.000	7650.00	619.27	0.93	-0.14	0.0	130.79	350.00
N	120420.000	8420.00	619.60	0.33	-0.16	0.0	130.80	350.00
	120420.000	10100.00	620.28	0.68	-0.21	0.0	130.84	350.00
	120421.000	5710.00	618.34	0.0	0.00	0.0	130.74	1.00
	120421.000	7650.00	619.27	0.93	0.00	0.0	130.79	1.00
	120421.000	8420.00	619.60	0.33	0.00	0.0	130.80	1.00
	120421.000	10100.00	620.28	0.68	0.00	0.0	130.84	1.00
	120422.000	5710.00	618.39	0.0	0.05	0.0	130.74	56.00
	120422.000	7650.00	619.34	0.95	0.07	0.0	130.79	56.00
	120422.000	8420.00	619.69	0.34	0.08	0.0	130.81	56.00
	120422.000	10100.00	620.39	0.70	0.10	0.0	130.84	56.00
	120423.000	5710.00	618.39	0.0	0.00	0.0	130.74	1.00
	120423.000	7650.00	619.35	0.95	0.00	0.0	130.79	1.00
	120423.000	8420.00	619.69	0.34	0.00	0.0	130.81	1.00
	120423.000	10100.00	620.39	0.70	0.00	0.0	130.84	1.00
	120620.000	5710.00	618.63	0.0	0.24	0.0	246.71	200.00
O	120620.000	7650.00	619.71	1.08	0.36	0.0	247.09	200.00
	120620.000	8420.00	620.10	0.39	0.42	0.0	247.23	200.00
	120620.000	10100.00	620.92	0.82	0.53	0.0	247.53	200.00
	121520.000	5710.00	618.97	0.0	0.34	0.0	520.87	900.00
P	121520.000	7650.00	620.14	1.17	0.43	0.0	533.44	900.00
	121520.000	8420.00	620.57	0.43	0.47	0.0	538.05	900.00
	121520.000	10100.00	621.47	0.89	0.54	0.0	547.64	900.00
	122420.000	5710.00	619.26	0.0	0.28	0.0	472.28	900.00
Q	122420.000	7650.00	620.45	1.20	0.31	0.0	540.91	900.00
	122420.000	8420.00	620.89	0.44	0.32	0.0	554.33	900.00
	122420.000	10100.00	621.79	0.90	0.32	0.0	582.10	900.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	124120.000	5710.00	619.40	0.0	0.14	0.0	1044.15	1000.00
R	124120.000	7650.00	620.63	1.23	0.18	0.0	1174.49	1000.00
	124120.000	8420.00	621.07	0.44	0.19	0.0	1182.95	1000.00
	124120.000	10100.00	621.98	0.91	0.19	0.0	1200.22	1000.00
	125520.000	5710.00	620.07	0.0	0.68	0.0	1146.60	1400.00
S	125520.000	7650.00	621.03	0.96	0.40	0.0	1166.90	1400.00
	125520.000	8420.00	621.41	0.38	0.34	0.0	1174.99	1400.00
	125520.000	10100.00	622.23	0.82	0.25	0.0	1192.39	1400.00
	126420.000	5710.00	620.48	0.0	0.41	0.0	759.88	950.00
T	126420.000	7650.00	621.40	0.92	0.37	0.0	926.23	950.00
	126420.000	8420.00	621.75	0.35	0.34	0.0	989.81	950.00
	126420.000	10100.00	622.50	0.75	0.27	0.0	1126.43	950.00

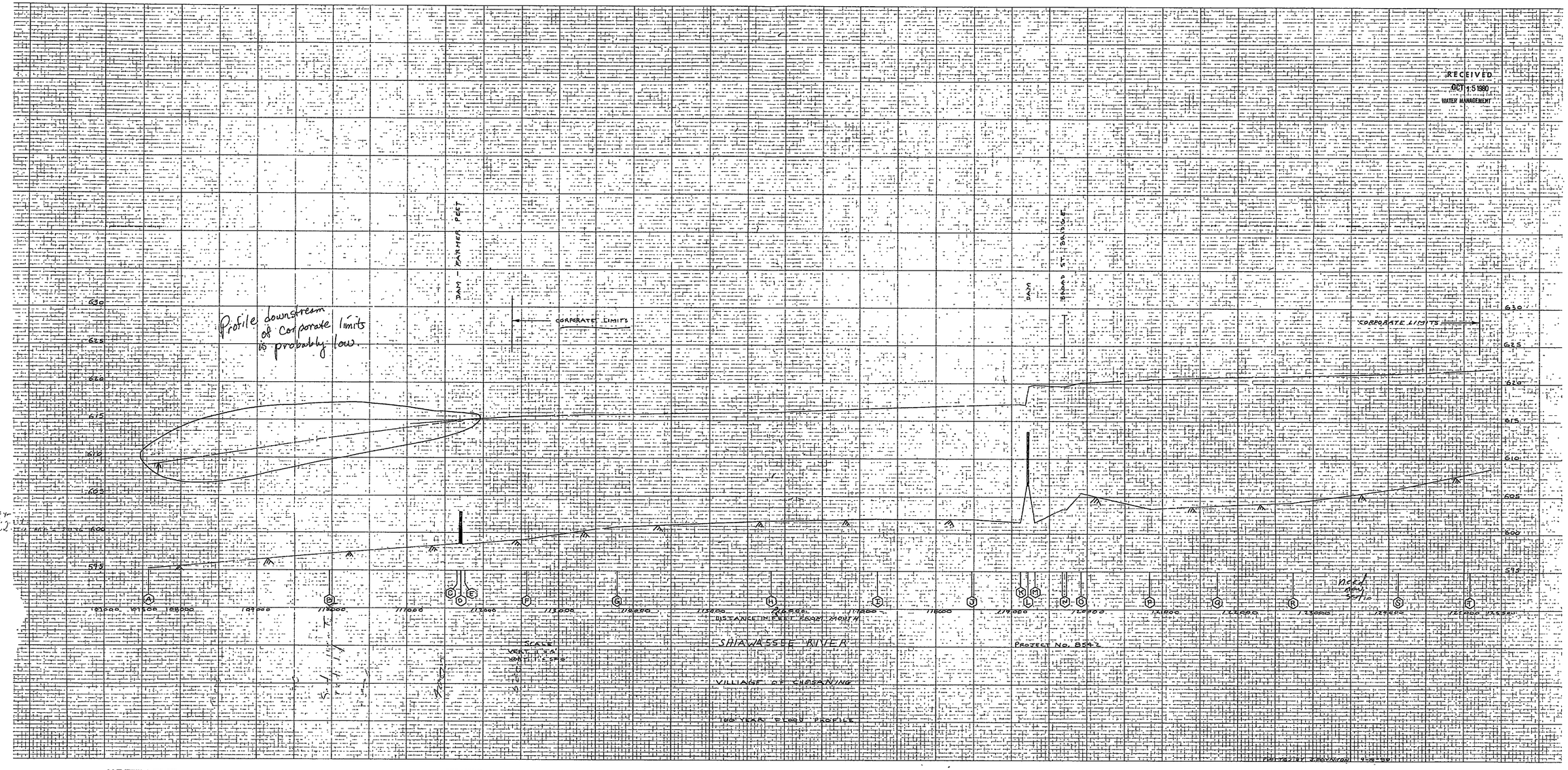
SUMMARY OF ERRORS



Gove Associates, Inc.
W O # 457.
Mapping Scale 1"=400'
Contour Interval: 4'
Date of Photograph: 4-29-79

RECEIVED
OCT 15 1980
WATER MANAGEMENT

RECEIVED
OCT 15 1980
WATER MANAGEMENT



K&E STANDARD ● CROSS SECTION
DRAWN TO THE INCH
KEUFFEL & ESSER CO.
MADE IN U.S.A.

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: FRANKENMUTH, CITY

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        6.        0.        0.   0.0          0.0       0.0       0.     607.650    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    15.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0
```

100 year Encroached

See suggested Revision in Packet

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*PROF 2

CCHV    0.100 CEHV    0.300
*SECNO 89500.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      410.0     1080.0  TYPE      1  TARGET     -410.000

       VALLEY SECTION A   STARTING STATION , DOWNSTREAM OF THE

                          U.S.G.S GAGE 1515

 89500.00     22.45    607.65      0.0    607.55    608.20      0.55      0.0       0.0    601.60
   21000.      3829.   17086.      85.     2741.     2601.      62.       0.        0.     600.20
     0.0       1.40      6.57     1.36     0.090     0.040     0.063     0.0     585.20     410.00
 0.000653    89500.    89500.   89500.         0         0         0    -0.02    614.77    1024.77

*SECNO 90030.000

3470 ENCROACHMENT STATIONS      540.0     1125.0  TYPE      1  TARGET     -540.000

       VALLEY SECTION B  MANUFACTURED

 90030.00     22.81    608.01      0.0    607.92    608.51      0.50      0.30      0.01    600.00
   21000.      1990.   18671.     339.     1607.     3123.     208.       59.        6.     600.00
     0.03      1.24      5.98     1.63     0.090     0.040     0.063     0.041     585.20     540.00
 0.000525     440.      530.     575.         2         0         0    -0.03    537.05    1077.05

CCHV    0.300 CEHV    0.500
*SECNO 90600.000

3470 ENCROACHMENT STATIONS      200.0      445.0  TYPE      1  TARGET      245.000

       VALLEY SECTION C

 90600.00     22.54    608.34      0.0    608.26    608.85      0.51      0.34      0.00    600.00
   21000.      128.   20752.     120.      101.     3618.      70.       125.       12.     600.00
     0.06      1.27      5.74     1.72     0.065     0.040     0.045     0.040     585.80     208.28
 0.000471     600.      680.     800.         2         0         0    -0.01    233.41     441.69

CCHV    0.100 CEHV    0.300
*SECNO 91120.000

3470 ENCROACHMENT STATIONS      553.0      812.0  TYPE      1  TARGET      259.000

       VALLEY SECTION D  MANUFACTURED

 91120.00     22.78    608.58      0.0    608.51    608.99      0.40      0.13      0.01    600.00
   21000.      164.   20707.     130.      111.     4043.      81.       153.       14.     600.00
     0.08      1.48      5.12     1.60     0.050     0.040     0.045     0.040     585.80     554.25
 0.000382     300.      300.     300.         2         0         0    -0.01    256.64     810.88

*SECNO 91550.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
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Revised 100-YR

~ 611.6

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   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST


3470 ENCROACHMENT STATIONS        41.0      314.0  TYPE      1  TARGET       273.000

        SECTION E  LOW DAM REGARDED AS STEP DAM

 91550.00    19.15   608.85     0.0    608.77   609.14     0.29     0.14     0.01   606.80
   21000.       0.   20759.     241.       0.    4787.     138.     197.      16.   598.20
     0.10      0.0     4.34     1.75    0.045    0.040    0.045    0.040   589.70    41.00
 0.000306     475.     415.     375.        2        0        0    -0.01   273.00   314.00

*SECNO 91551.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS        41.0      314.0  TYPE      1  TARGET       273.000
 91551.00    10.19   608.39     0.0    608.30   609.38     1.00     0.03     0.21   606.80
   21000.       0.   20414.     586.       0.    2522.     127.     201.      17.   598.20
     0.10      0.0     8.09     4.60    0.045    0.040    0.045    0.040   598.20    41.00
 0.002293      50.      50.      50.        2        0        0    -0.03   273.00   314.00

*SECNO 91552.000

3470 ENCROACHMENT STATIONS        41.0      314.0  TYPE      1  TARGET       273.000
 91552.00    10.21   608.41     0.0    608.32   609.40     1.00     0.02     0.00   606.80
   21000.       0.   20414.     586.       0.    2524.     128.     202.      17.   598.20
     0.10      0.0     8.09     4.60    0.045    0.040    0.045    0.040   598.20    41.00
 0.002288       8.       8.       8.        0        0        0    -0.03   273.00   314.00

*SECNO 91553.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS        41.0      314.0  TYPE      1  TARGET       273.000
 91553.00    19.53   609.23     0.0    609.16   609.51     0.28     0.03     0.07   606.80
   21000.       0.   20744.     256.       0.    4882.     147.     206.      17.   598.20
     0.11      0.0     4.25     1.75    0.045    0.040    0.045    0.040   589.70    41.00
 0.000287      50.      50.      50.        2        0        0    -0.00   273.00   314.00

*SECNO 91850.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       621.20 ELREA       612.20

        SECTION F   MAIN ST. BRIDGE, WIDTH 68 FT, LENGTH 240 FT

                    MAX LC 614.8 FT, MIN TRD 612.2 FT

 91850.00    21.10   609.10     0.0    609.03   609.72     0.62     0.11     0.10   613.90
   21000.       0.   21000.       0.       0.    3337.       0.     230.      18.   605.80
     0.12      0.0     6.29     0.0     0.045    0.040    0.045    0.040   588.00   115.98
 0.000797     330.     250.     170.        2        0        0    -0.01   222.02   338.00

*SECNO 91851.000
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3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20

 91851.00    21.08    609.08      0.0    609.01    609.74      0.66      0.01      0.01    619.30
   21000.       0.    21000.       0.        0.     3220.        0.      231.       18.    614.00
     0.12      0.0      6.52      0.0     0.045     0.040     0.045     0.040    588.00    116.23
 0.001472      10.       10.      10.         2         0         0     -0.00    214.27    338.00

*SECNO 91852.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20

 91852.00    21.18    609.18      0.0    609.11    609.83      0.65      0.09      0.00    619.30
   21000.       0.    21000.       0.        0.     3241.        0.      235.       19.    614.00
     0.12      0.0      6.48      0.0     0.045     0.040     0.045     0.040    588.00    115.93
 0.001446      62.       62.      62.         2         0         0     -0.00    214.57    338.00

*SECNO 91853.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      621.20 ELREA       612.20

 91853.00    21.25    609.25      0.0    609.18    609.85      0.60      0.01      0.00    613.90
   21000.       0.    21000.       0.        0.     3368.        0.      236.       19.    605.80
     0.12      0.0      6.24      0.0     0.045     0.040     0.045     0.040    588.00    115.57
 0.000774      10.       10.      10.         2         0         0     -0.01    222.43    338.00

*SECNO 91950.000

3470 ENCROACHMENT STATIONS      150.0      360.0  TYPE      1  TARGET     -150.000

        VALLEY SECTION G  MANUFACTURED

 91950.00    23.55    609.35      0.0       0.0    610.01      0.65      0.14      0.02    599.00
   21000.      13.    20749.     237.       15.     3181.       93.      252.       20.    599.00
     0.13     0.91      6.52     2.55     0.050     0.040     0.050     0.040    585.80    155.18
 0.000621     245.      205.     160.         2         0         0     -0.01    184.18    339.35

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      616.60 ELREA       626.10

        SECTION H   PROPOSED NEW BRIDGE-415'U/S OF U/S FACE OF MAIN ST. BRIDGE

                    WIDTH 39 FT, LENGTH 206.5 FT,MAX LC 622.8 FT,MIN TRD 616.6FT

 92010.00    23.54    609.64      0.0       0.0    610.12      0.49      0.10      0.02    604.80
   21000.       0.    21000.       0.        0.     3743.        0.      266.       20.    611.60
     0.14      0.0      5.61      0.0     0.050     0.040     0.050     0.040    586.10    160.00
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0.000496     235.     185.     135.       2        0        0    -0.01   203.30   363.30

*SECNO 92011.000

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD   8 MIN ELTRD   616.60 MAX ELLC   626.10

 92011.00    23.62    609.62      0.0       0.0    610.14      0.52      0.01      0.01    616.60
   21000.       0.    21000.       0.        0.     3630.       0.      267.       20.    626.10
     0.14      0.0      5.79      0.0     0.050     0.040     0.050     0.040    586.00    160.00
 0.000893      10.       10.      10.         2         0         0     -0.01    198.27    363.27

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD   8 MIN ELTRD   616.60 MAX ELLC   626.10

 92012.00    23.66    609.66      0.0       0.0    610.18      0.52      0.03      0.00    616.60
   21000.       0.    21000.       0.        0.     3635.       0.      271.       21.    626.10
     0.14      0.0      5.78      0.0     0.050     0.040     0.050     0.040    586.00    160.00
 0.000889      39.       39.      39.         0         0         0     -0.01    198.32    363.32

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      616.60 ELREA      626.10

 92013.00    23.60    609.70      0.0       0.0    610.18      0.49      0.01      0.00    604.80
   21000.       0.    21000.       0.        0.     3755.       0.      271.       21.    611.60
     0.14      0.D      5.59      0.0     0.050     0.040     0.050     0.040    586.10    160.00
 0.000491      10.       10.      10.         2         0         0     -0.01    203.40    363.40

*SECNO 92030.000

3470 ENCROACHMENT STATIONS      112.0     418.0  TYPE      1  TARGET     306.000

        VALLEY SECTION I

 92030.00    22.94    609.94      0.0    609.88    610.28      0.34      0.08      0.01    600.00
   21000.    1181.    19531.     288.      499.     4068.      158.      291.       22.    600.00
     0.16     2.36      4.80     1.82     0.045     0.040     0.042     0.040    587.00    112.00
 0.000333     210.      200.     205.         2         0         0     -0.01    305.81    417.81

CCHV    0.300 CEHV    0.500
*SECNO 92480.000

3470 ENCROACHMENT STATIONS       38.0     568.0  TYPE      1  TARGET     530.000

        VALLEY SECTION J  MANUFACTURED

 92480.00    21.26    610.26      0.0    610.20    610.44      0.18      0.12      0.05    598.00
   21000.    6937.    13405.     658.     2819.     3471.      320.      349.       26.    598.00
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     0.19      2.46      3.86      2.06     0.040     0.038     0.040     0.040    589.00     39.13
 0.000205      450.      450.      450.         2         0         0     -0.02    528.87    568.00

*SECNO 93300.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS   BANK ELEV
       Q      QLOB       QCH      QROB      ALOB       ACH      ARCB       VOL       TWA   LEFT/RIGHT
    TIME      VLOB       VCH      VROB       XNL      XNCH       XNR       WTM     ELMIN       SSTA
   SLOPE     XLOBL      XLCH     XLOBR     ITRIAL       IDC     ICCNT     CORAR    TOPWID      ENDST

3470 ENCROACHMENT STATIONS      240.0     710.0  TYPE      1  TARGET     470.000

        VALLEY SECTION K

 93300.00     21.32    610.32       0.0    610.26    610.54      0.22      0.08      0.02    600.40
    21000.     6086.     14756.      148.     2365.     3531.       88.      402.       30.    601.20
     0.22      2.57      4.18      1.67     0.040     0.038     0.040     0.040    589.00    240.00
 0.000254      360.      360.      360.         2         0         0     -0.02    470.00    710.00

CCHV    0.300 CEHV    0.500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS      600.0    1405.0  TYPE      1  TARGET    -600.000

        VALLEY SECTION L  MANUFACTURED

 94035.00     21.57    610.57       0.0    610.51    610.72      0.16      0.16      0.02    600.00
    21000.     6399.     14296.      305.     4193.     3857.      212.      515.       40.    600.00
     0.29      1.53      3.71      1.44     0.055     0.038     0.045     0.040    589.00    600.00
 0.000202      650.      735.      735.         2         0         0     -0.03    792.12   1392.12

1490 NH CARD USED
*SECNO 94900.000

3470 ENCROACHMENT STATIONS     1500.0    2224.0  TYPE      1  TARGET     724.000

        VALLEY SECTION M

 94900.00     23.32    610.62       0.0    610.56    611.22      0.60      0.27      0.22    600.00
    21000.      514.    20486.        0.      365.     3258.        0.      617.       51.  100000.00
     0.32      1.41      6.29       0.0     0.055     0.040     0.045     0.040    587.30   1500.00
 0.000624      490.      900.     1020.         2         0         0     -0.01    724.00   2224.00

1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS     1125.0    1700.0  TYPE      1  TARGET     575.000

        VALLEY SECTION N

 96100.00     20.10    611.60       0.0    611.53    611.82      0.22      0.48      0.11    600.00
    21000.     2417.     16465.     2118.     1535.     4008.      964.      750.       65.    602.80
     0.41      1.57      4.11      2.20     0.063     0.040     0.045     0.040    591.50   1125.00
 0.000285      715.     1220.     1375.         2         0         0     -0.02    575.00   1700.00

CCHV    0.100 CEHV    0.300
*SECNO 96500.000

3265 DIVIDED FLOW
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3470 ENCROACHMENT STATIONS 330.0 900.0 TYPE 1 TARGET 570.000

VALLEY SECTION O MAUNFACTURED

96500.00	24.42	611.72	0.0	611.66	611.91	0.19	0.09	0.00	600.00
21000.	0.	15780.	5220.	0.	4023.	2717.	810.	70.	600.00
0.45	0.00	3.92	1.92	0.055	0.038	0.045	0.039	587.30	260.00
0.000201	385.	400.	390.	2	0	0	-0.02	566.49	896.49

*SECNO 97300.000

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

3470 ENCROACHMENT STATIONS 0.0 800.0 TYPE 1 TARGET 799.999

VALLEY SECTION P

97300.00	23.16	611.96	0.0	611.90	612.11	0.16	0.19	0.00	611.60
21000.	0.	12941.	8059.	0.	3421.	4519.	958.	82.	598.90
0.53	0.00	3.78	1.78	0.050	0.040	0.055	0.040	588.80	99.50
0.000231	995.	950.	810.	1	0	0	-0.03	700.50	800.00

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 HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CASS RIVER

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
89500.000	607.55	0.0	608.11	614.55	3769.78	17147.00	83.24	-410.00	410.00	874.00	1008.00	1080.00
89500.000	607.65	0.10	608.20	614.77	3829.04	17085.73	85.24	-410.00	410.00	874.00	1008.00	1080.00
90030.000	607.92	0.0	608.43	536.65	1958.24	18708.17	333.60	-540.00	540.00	870.00	1032.00	1125.00
90030.000	608.01	0.09	608.51	537.05	1990.25	18670.63	339.13	-540.00	540.00	870.00	1032.00	1125.00
90600.000	608.26	0.0	608.77	232.84	124.63	20757.56	117.81	0.0	0.0	240.00	425.00	0.0
90600.000	608.34	0.08	608.85	233.41	127.90	20752.04	120.07	245.00	200.00	240.00	425.00	445.00
91120.000	608.51	0.0	608.91	256.23	160.89	20711.59	127.54	0.0	0.0	580.00	792.00	0.0
91120.000	608.58	0.08	608.99	256.64	163.71	20706.52	129.77	259.00	553.00	580.00	792.00	812.00
91550.000	608.77	0.0	609.07	285.94	6.12	20747.54	246.35	0.0	0.0	41.00	291.00	0.0
91550.000	608.85	0.08	609.14	273.00	0.0	20758.53	241.47	273.00	41.00	41.00	291.00	314.00
91551.000	608.30	0.0	609.31	283.33	8.19	20400.37	591.46	0.0	0.0	41.00	291.00	0.0
91551.000	608.39	0.08	609.38	273.00	0.0	20414.21	585.79	273.00	41.00	41.00	291.00	314.00
91552.000	608.32	0.0	609.33	283.41	8.36	20399.14	592.52	0.0	0.0	41.00	291.00	0.0
91552.000	608.41	0.08	609.40	273.00	0.0	20413.74	586.27	273.00	41.00	41.00	291.00	314.00
91553.000	609.16	0.0	609.44	288.07	9.52	20725.70	264.79	0.0	0.0	41.00	291.00	0.0
91553.000	609.23	0.07	609.51	273.00	0.0	20743.61	256.40	273.00	41.00	41.00	291.00	314.00
91850.000	609.03	0.0	609.65	221.81	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91850.000	609.10	0.07	609.72	222.02	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	609.01	0.0	609.68	214.06	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	609.08	0.07	609.74	214.27	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	609.11	0.0	609.77	214.36	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	609.18	0.07	609.83	214.57	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	609.18	0.0	609.78	222.23	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	609.25	0.07	609.85	222.43	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91950.000	609.28	0.0	609.94	184.09	13.15	20751.23	235.62	-150.00	150.00	158.00	325.00	360.00
91950.000	609.35	0.0	610.01	184.18	13.30	20749.23	237.47	-150.00	150.00	158.00	325.00	360.00

SECND	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
92010.000	609.57	0.0	610.06	203.19	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92010.000	609.64	0.0	610.12	203.30	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	609.56	0.0	610.08	198.17	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	609.62	0.0	610.14	198.27	0.0	21000.01	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	609.59	0.0	610.11	198.21	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	609.66	0.0	610.18	198.32	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	609.63	0.0	610.12	203.30	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	609.70	0.0	610.18	203.40	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92030.000	609.88	0.0	610.22	327.20	1292.13	19424.19	283.68	0.0	0.0	173.00	386.00	0.0
92030.000	609.94	0.06	610.28	305.81	1180.78	19531.04	288.20	306.00	112.00	173.00	386.00	418.00
92480.000	610.20	0.0	610.38	528.80	6916.27	13428.39	655.33	0.0	0.0	332.00	522.00	0.0
92480.000	610.26	0.06	610.44	528.87	6937.16	13404.84	658.00	530.00	38.00	332.00	522.00	568.00
93300.000	610.26	0.0	610.48	470.00	6063.07	14789.10	147.83	470.00	240.00	500.00	700.00	710.00
93300.000	610.32	0.06	610.54	470.00	6085.02	14765.86	148.13	470.00	240.00	500.00	700.00	710.00
L 94035.000	610.51	0.0	610.67	791.91	6371.04	14326.90	302.06	-600.00	600.00	1130.00	1352.00	1405.00
94035.000	610.57	0.06	610.72	792.12	6399.24	14295.70	305.05	-600.00	600.00	1130.00	1352.00	1405.00
M 94900.000	610.56	0.0	611.16	1437.18	486.85	20455.96	57.19	0.0	0.0	2050.00	2224.00	0.0
94900.000	610.62	0.06	611.22	724.00	514.49	20485.51	0.0	724.00	1500.00	2050.00	2224.00	2224.00
J 96100.000	611.53	0.0	611.75	575.00	2403.29	16491.11	2105.60	575.00	1125.00	1331.00	1568.00	1700.00
96100.000	611.60	0.06	611.82	575.00	2416.60	16465.36	2118.04	575.00	1125.00	1331.00	1568.00	1700.00
D 96500.000	611.66	0.0	611.85	565.71	0.00	15811.27	5188.72	570.00	330.00	330.00	525.00	900.00
96500.000	611.72	0.06	611.91	566.49	0.00	15780.23	5219.76	570.00	330.00	330.00	525.00	900.00
B 97300.000	611.90	0.0	612.05	700.41	0.00	12969.14	8030.86	800.00	0.00	100.00	286.00	800.00
97300.000	611.96	0.06	612.11	700.50	0.00	12941.38	8058.61	800.00	0.00	100.00	286.00	800.00

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
89500.000	89500.00	0.0	0.0	585.20	21000.00	607.55	0.0	608.11	6.69	6.63	5344.01	8117.71
89500.000	89500.00	0.0	0.0	585.20	21000.00	607.65	0.0	608.20	6.53	6.57	5405.38	8217.13
90030.000	530.00	0.0	0.0	585.20	21000.00	607.92	0.0	608.43	5.36	6.02	4890.05	9072.39
90030.000	530.00	0.0	0.0	585.20	21000.00	608.01	0.0	608.51	5.25	5.98	4937.77	9160.91
90600.000	680.00	0.0	0.0	585.80	21000.00	608.26	0.0	608.77	4.78	5.76	3769.31	9603.74
90600.000	680.00	0.0	0.0	585.80	21000.00	608.34	0.0	608.85	4.71	5.74	3788.37	9673.63
91120.000	300.00	0.0	0.0	585.80	21000.00	608.51	0.0	609.91	3.87	5.14	4214.26	10669.32
91120.000	300.00	0.0	0.0	585.80	21000.00	608.58	0.0	608.99	3.82	5.12	4234.42	10745.66
91550.000	415.00	0.0	0.0	589.70	21000.00	608.77	0.0	609.07	3.06	4.35	4918.03	11996.49
91550.000	415.00	0.0	0.0	589.70	21000.00	608.85	0.0	609.14	3.06	4.34	4925.47	12009.79
91551.000	50.00	0.0	0.0	598.20	21000.00	608.30	0.0	609.31	23.37	8.16	2634.22	4344.38
91551.000	50.00	0.0	0.0	598.20	21000.00	608.39	0.0	609.38	22.93	8.09	2649.73	4385.09
91552.000	8.00	0.0	0.0	598.20	21000.00	608.32	0.0	609.33	23.26	8.15	2637.89	4354.01
91552.000	8.00	0.0	0.0	598.20	21000.00	608.41	0.0	609.40	22.88	8.09	2651.77	4390.51
91553.000	50.00	0.0	0.0	589.70	21000.00	609.16	0.0	609.44	2.86	4.26	5028.66	12416.34
91553.000	50.00	0.0	0.0	589.70	21000.00	609.23	0.0	609.51	2.87	4.25	5028.89	12406.03
91850.000	250.00	0.0	0.0	588.00	21000.00	609.03	0.0	609.65	8.09	6.32	3320.69	7384.47
91850.000	250.00	0.0	0.0	588.00	21000.00	609.10	0.0	609.72	7.97	6.29	3336.57	7438.61
91851.000	10.00	612.20	621.20	588.00	21000.00	609.01	0.0	609.68	14.91	6.55	3204.16	5437.91
91851.000	10.00	612.20	621.20	588.00	21000.00	609.08	0.0	609.74	14.72	6.52	3219.53	5473.39
91852.000	62.00	612.20	621.20	588.00	21000.00	609.11	0.0	609.77	14.64	6.51	3225.83	5487.95
91852.000	62.00	612.20	621.20	588.00	21000.00	609.18	0.0	609.83	14.46	6.48	3241.09	5523.22
91853.000	10.00	0.0	0.0	588.00	21000.00	609.18	0.0	609.78	7.85	6.26	3352.49	7492.97
91853.000	10.00	0.0	0.0	588.00	21000.00	609.25	0.0	609.85	7.74	6.24	3368.01	7546.13
91950.000	205.00	0.0	0.0	585.80	21000.00	609.28	0.0	609.94	6.29	6.55	3276.36	8373.41
91950.000	205.00	0.0	0.0	585.80	21000.00	609.35	0.0	610.01	6.21	6.52	3288.81	8424.00
92010.000	185.00	0.0	0.0	586.10	21000.00	609.57	0.0	610.06	5.01	5.63	3729.38	9378.86
92010.000	185.00	0.0	0.0	586.10	21000.00	609.64	0.0	610.12	4.96	5.61	3742.58	9430.56
92011.000	10.00	616.60	626.10	586.00	21000.00	609.56	0.0	610.08	9.02	5.81	3617.01	6992.41
92011.000	10.00	616.60	626.10	586.00	21000.00	609.62	0.0	610.14	8.93	5.79	3629.82	7026.86
92012.000	39.00	616.60	626.10	586.00	21000.00	609.59	0.0	610.11	8.98	5.80	3622.48	7007.12
92012.000	39.00	616.60	626.10	586.00	21000.00	609.66	0.0	610.18	8.39	5.78	3635.26	7041.51
92013.000	10.00	0.0	0.0	586.10	21000.00	609.63	0.0	610.12	4.96	5.61	3742.37	9429.73
92013.000	10.00	0.0	0.0	586.10	21000.00	609.70	0.0	610.18	4.91	5.59	3755.47	9481.15
92030.000	200.00	0.0	0.0	587.00	21000.00	609.88	0.0	610.22	3.33	4.79	4771.48	11515.35
92030.000	200.00	0.0	0.0	587.00	21000.00	609.94	0.0	610.28	3.33	4.80	4725.39	11509.44

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
92480.000	450.00	0.0	0.0	589.00	21000.00	610.20	0.0	610.38	2.08	3.88	6577.14	14561.90
92480.000	450.00	0.0	0.0	589.00	21000.00	610.26	0.0	610.44	2.05	3.86	6610.03	14670.70
93300.000	360.00	0.0	0.0	589.00	21000.00	610.26	0.0	610.48	2.57	4.20	5955.98	13091.82
93300.000	360.00	0.0	0.0	589.00	21000.00	610.32	0.0	610.54	2.54	4.18	5984.78	13138.62
94035.000	735.00	0.0	0.0	589.00	21000.00	610.51	0.0	610.67	2.05	3.73	8215.50	14661.57
94035.000	735.00	0.0	0.0	589.00	21000.00	610.57	0.0	610.72	2.02	3.71	8261.70	14776.15
94900.000	900.00	0.0	0.0	587.30	21000.00	610.56	0.0	611.16	5.98	6.30	3659.56	8584.00
94900.000	900.00	0.0	0.0	587.30	21000.00	610.62	0.0	611.22	6.24	6.29	3623.12	8404.19
96100.000	1220.00	0.0	0.0	591.50	21000.00	611.53	0.0	611.75	2.89	4.13	6469.44	12350.55
96100.000	1220.00	0.0	0.0	591.50	21000.00	611.60	0.0	611.82	2.85	4.11	6506.80	12449.48
96500.000	400.00	0.0	0.0	587.30	21000.00	611.66	0.0	611.85	2.04	3.94	6704.71	14710.06
96500.000	400.00	0.0	0.0	587.30	21000.00	611.72	0.0	611.91	2.01	3.92	6740.21	14811.09
97300.000	950.00	0.0	0.0	588.80	21000.00	611.90	0.0	612.05	2.35	3.90	7898.16	13712.75
97300.000	950.00	0.0	0.0	588.80	21000.00	611.96	0.0	612.11	2.31	3.78	7940.14	13817.13

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
89500.000	21000.00	607.55	0.0	0.0	0.0	614.55	89500.00
89500.000	21000.00	607.65	0.10	0.0	0.10	614.77	89500.00
90030.000	21000.00	607.92	0.0	0.37	0.0	536.65	530.00
90030.000	21000.00	608.01	0.09	0.36	0.09	537.05	530.00
90600.000	21000.00	608.26	0.0	0.34	0.0	232.84	680.00
90600.000	21000.00	608.34	0.08	0.33	0.08	233.41	680.00
91120.000	21000.00	608.51	0.0	0.24	0.0	256.23	300.00
91120.000	21000.00	608.58	0.08	0.24	0.08	256.64	300.00
91550.000	21000.00	608.77	0.0	0.27	0.0	285.94	415.00
91550.000	21000.00	608.85	0.08	0.27	0.08	273.00	415.00
91551.000	21000.00	608.30	0.0	-0.47	0.0	283.33	50.00
91551.000	21000.00	608.39	0.08	-0.46	0.08	273.00	50.00
91552.000	21000.00	608.32	0.0	0.02	0.0	283.41	8.00
91552.000	21000.00	608.41	0.08	0.02	0.08	273.00	8.00
91553.000	21000.00	609.16	0.0	0.84	0.0	288.07	50.00
91553.000	21000.00	609.23	0.07	0.82	0.07	273.00	50.00
91850.000	21000.00	609.03	0.0	-0.13	0.0	221.81	250.00
91850.000	21000.00	609.10	0.07	-0.12	0.07	222.02	250.00
91851.000	21000.00	609.01	0.0	-0.02	0.0	214.06	10.00
91851.000	21000.00	609.08	0.07	-0.02	0.07	214.27	10.00
91852.000	21000.00	609.11	0.0	0.10	0.0	214.36	62.00
91852.000	21000.00	609.18	0.07	0.10	0.07	214.57	62.00
91853.000	21000.00	609.18	0.0	0.06	0.0	222.23	10.00
91853.000	21000.00	609.25	0.07	0.06	0.07	222.43	10.00
91950.000	21000.00	609.28	0.0	0.11	0.0	184.09	205.00
91950.000	21000.00	609.35	0.07	0.11	0.0	184.18	205.00
92010.000	21000.00	609.57	0.0	0.29	0.0	203.19	185.00
92010.000	21000.00	609.64	0.06	0.28	0.0	203.30	185.00
92011.000	21000.00	609.56	0.0	-0.02	0.0	198.17	10.00
92011.000	21000.00	609.62	0.06	-0.02	0.0	198.27	10.00
92012.000	21000.00	609.59	0.0	0.04	0.0	198.21	39.00
92012.000	21000.00	609.66	0.06	0.04	0.0	198.32	39.00
92013.000	21000.00	609.63	0.0	0.04	0.0	203.30	10.00
92013.000	21000.00	609.70	0.06	0.04	0.0	203.40	10.00
92030.000	21000.00	609.88	0.0	0.25	0.0	327.20	200.00
92030.000	21000.00	609.94	0.06	0.24	0.06	305.81	200.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
92480.000	21000.00	610.20	0.0	0.31	0.0	528.80	450.00
92480.000	21000.00	610.26	0.06	0.32	0.06	528.87	450.00
93300.000	21000.00	610.26	0.0	0.06	0.0	470.00	360.00
93300.000	21000.00	610.32	0.06	0.06	0.06	470.00	360.00
94035.000	21000.00	610.51	0.0	0.25	0.0	791.91	735.00
94035.000	21000.00	610.57	0.06	0.24	0.06	792.12	735.00
94900.000	21000.00	610.56	0.0	0.05	0.0	1437.18	900.00
94900.000	21000.00	610.62	0.06	0.05	0.06	724.00	900.00
96100.000	21000.00	611.53	0.0	0.98	0.0	575.00	1220.00
96100.000	21000.00	611.60	0.06	0.98	0.06	575.00	1220.00
96500.000	21000.00	611.66	0.0	0.12	0.0	565.71	400.00
96500.000	21000.00	611.72	0.06	0.12	0.06	566.49	400.00
97300.000	21000.00	611.90	0.0	0.24	0.0	700.41	950.00
97300.000	21000.00	611.96	0.06	0.24	0.06	700.50	950.00

SUMMARY OF ERRORS

FLOODWAY DATA, CASS RIVER
PROFILE NO. 2

	STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
A	89500.000	615.	5405.	3.9	607.7	607.6	0.1
B	90030.000	537.	4938.	4.3	608.0	607.9	0.1
C	90600.000	233.	3788.	5.5	608.4	608.3	0.1
D	91120.000	257.	4234.	5.0	608.6	608.5	0.1
E	91550.000	273.	4925.	4.3	608.9	608.8	0.1
	91551.000	273.	2650.	7.9	608.4	608.3	0.1
	91552.000	273.	2652.	7.9	608.4	608.3	0.1
	91553.000	273.	5029.	4.2	609.3	609.2	0.1
F	91850.000	222.	3337.	6.3	609.1	609.0	0.1
	91851.000	222.	3220.	6.5	609.1	609.0	0.1
	91852.000	222.	3241.	6.5	609.2	609.1	0.1
	91853.000	222.	3368.	6.2	609.3	609.2	0.1
G	91950.000	184.	3289.	6.4	609.4	609.3	0.1
H	92010.000	203.	3743.	5.6	609.7	609.6	0.1
	92011.000	203.	3630.	5.8	609.7	609.6	0.1
	92012.000	203.	3635.	5.8	609.7	609.6	0.1
	92013.000	203.	3755.	5.6	609.7	609.6	0.1
I	92030.000	306.	4725.	4.4	610.0	609.9	0.1
J	92480.000	529.	6610.	3.2	610.3	610.2	0.1
K	93300.000	470.	5985.	3.5	610.4	610.3	0.1
L	94035.000	792.	8262.	2.5	610.6	610.5	0.1
M	94900.000	724.	3623.	5.8	610.7	610.6	0.1
N	96100.000	575.	6507.	3.2	611.6	611.5	0.1
O	96500.000	636.	6740.	3.1	611.8	611.7	0.1
P	97300.000	700.	7940.	2.6	612.0	611.9	0.1

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: FRANKENMUTH, CITY

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: 100 YR NATURAL

00BREAK00

GOVEA	JGOVEDSS	1677	GO.FTC6F001	15.20.34	10 SEP 81	FRANKENMUTH	NMUTH
GOVEA	JGOVEDSS	1677	GO.FTC6F001	15.20.34	10 SEP 81	FRANKENMUTH	NMUTH
GOVEA	JGOVEDSS	1677	GO.FTO6F001	15.20.34	10 SEP 81	FRANKENMUTH	NMUTH

REVISED PRINTOUT 9/10/81

NOTE:
1986 flood exceeded
"100-yr" profile by ~ 4 feet
Revision suggested to FEMA
See Revision in Packet

RECEIVED
SEP 23 1981
WATER MANAGEMENT

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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C
T1      CITY OF FRANKENUTH, PROJECT NO. 9559
T2      CASS RIVER
T3      CASS RIVER
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10 YEAR

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	0.0	0.0	0.0	0.	605.700	0.0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	1.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
J3	VARIABLE CODES FOR SUMMARY PRINTOUT									
	110.000	150.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

NC	0.090	0.063	0.040	0.100	0.300	0.0	0.0	0.0	0.0	0.0
QT	9.000	13600.000	18900.000	21000.000	26000.000	21000.000	10000.000	12500.000	15000.000	17500.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	425.000	1008.000

VALLEY SECTION A STARTING STATION , DOWNSTREAM OF THE U.S.G.S GAGE 1515

X1	89500.000	18.000	874.000	1008.000	89500.000	89500.000	89500.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	410.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	608.500	250.000	606.800	375.000	602.000	450.000	600.000	640.000	600.000	670.000
GR	602.000	690.000	602.000	730.000	602.000	765.000	603.900	851.000	601.600	874.000
GR	590.900	885.000	586.000	910.000	585.200	940.000	585.500	970.000	590.900	993.000
GR	600.200	1008.000	615.300	1042.000	630.800	1080.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	580.000	1050.000

VALLEY SECTION B MANUFACTURED

X1	90030.000	17.000	870.000	1032.000	440.000	575.000	530.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	540.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	607.800	330.000	607.700	560.000	603.000	690.000	600.000	760.000	600.400	800.000
GR	602.000	820.000	600.000	870.000	590.000	900.000	588.000	910.000	586.000	925.000
GR	585.200	955.000	585.200	985.000	590.000	1020.000	600.000	1032.000	602.000	1050.000
GR	610.000	1086.000	616.000	1125.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.065	0.045	0.040	0.300	0.500	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	200.000	445.000

VALLEY SECTION C

X1	90600.000	14.000	240.000	425.000	600.000	800.000	680.000	0.0	0.0	0.0
GR	610.000	200.000	608.000	210.000	606.000	225.000	600.000	240.000	590.000	258.000
GR	588.000	265.000	587.200	295.000	585.800	325.000	585.800	350.000	588.000	375.000
GR	590.000	408.000	600.000	425.000	610.000	445.000	610.000	465.000	0.0	0.0
NC	0.050	0.045	0.040	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	553.000	812.000

VALLEY SECTION D MANUFACTURED

X1	91120.000	11.000	580.000	792.000	300.000	300.000	300.000	0.0	0.0	0.0
GR	612.000	540.000	610.000	550.000	600.000	580.000	591.200	616.000	587.200	652.000
GR	585.800	698.000	585.800	733.000	591.200	775.000	600.000	792.000	610.000	814.000
GR	612.000	826.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.045	0.045	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	41.000	314.000

SECTION E LOW DAM REGARDED AS STEP DAM

X1	91550.000	8.000	41.000	291.000	475.000	375.000	415.000	0.0	0.0	0.0
GR	614.200	0.0	606.800	41.000	589.700	41.000	589.700	291.000	598.200	291.000
GR	607.500	314.000	607.700	316.000	613.600	316.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	41.000	314.000

X1	91551.000	7.000	41.000	291.000	50.000	50.000	50.000	0.0	0.0	0.0
GR	614.200	0.0	606.800	41.000	598.400	41.000	598.200	291.000	607.500	314.000
GR	607.700	316.000	613.600	316.000	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	41.000	314.000

X1	91552.000	0.0	0.0	0.0	8.000	8.000	8.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	41.000	314.000

X1	91553.000	8.000	41.000	291.000	50.000	50.000	50.000	0.0	0.0	0.0
GR	614.200	0.0	606.800	41.000	589.700	41.000	589.700	291.000	598.200	291.000
GR	607.500	314.000	607.700	316.000	613.600	316.000	0.0	0.0	0.0	0.0

SECTION F MAIN ST. BRIDGE, WIDTH 68 FT, LENGTH 240 FT

MAX LC 614.8 FT, MIN TRD 612.2 FT

X1	91850.000	12.000	102.000	338.000	330.000	170.000	250.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	621.200	612.200	0.0
GR	621.000	0.0	622.600	22.000	613.900	102.000	594.000	160.000	588.500	190.000
GR	588.000	220.000	588.500	250.000	592.000	280.000	595.000	298.000	599.000	317.000
GR	605.800	338.000	612.200	418.000	0.0	0.0	0.0	0.0	0.0	0.0

X1	91851.000	23.000	102.000	338.000	10.000	10.000	10.000	0.0	0.0	0.0
BT	14.000	22.000	621.200	621.200	22.000	624.400	621.200	102.000	622.600	619.300
BT	102.000	622.600	614.800	158.700	621.300	613.500	161.200	621.300	613.500	218.700
BT	620.000	612.100	221.100	620.000	612.100	278.700	618.700	610.700	281.200	618.700
BT	610.700	338.000	617.300	609.400	338.000	617.300	614.000	418.000	615.500	612.200
BT	418.000	612.200	612.200	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	621.200	22.000	619.300	102.000	613.900	102.000	599.000	146.000	594.500	158.700
GR	613.500	158.700	613.500	161.200	593.500	161.200	588.500	190.000	588.500	218.700
GR	612.100	218.700	612.100	221.200	588.000	221.200	588.500	250.000	588.500	278.700
GR	610.700	278.700	610.700	281.200	594.500	281.200	595.000	298.000	599.000	317.000
GR	605.800	338.000	614.000	338.000	612.200	418.000	0.0	0.0	0.0	0.0

X1	91852.000	0.0	0.0	0.0	62.000	62.000	62.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0

X1	91853.000	12.000	102.000	338.000	10.000	10.000	10.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	621.200	612.200	0.0
GR	621.000	0.0	621.000	22.000	613.900	102.000	594.000	160.000	588.500	190.000

GR	588.000	220.000	588.500	250.000	592.000	280.000	595.000	298.000	599.000	317.000
GR	605.800	338.000	612.200	418.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.050	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	41.000	0.0	0.0	158.000	325.000

VALLEY SECTION G MANUFACTURED

X1	91950.000	11.000	153.000	325.000	245.000	160.000	205.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	616.000	142.000	610.000	155.000	599.000	158.000	588.800	192.000	585.800	214.000
GR	588.200	246.000	588.600	288.000	599.000	325.000	600.000	330.000	610.000	340.000
GR	610.000	360.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

SECTION H PROPOSED NEW BRIDGE-415'U/S OF U/S FACE OF MAIN ST. BRIDGE

WIDTH 39 FT, LENGTH 206.5 FT,MAX LC 622.8 FT,MIN TRD 616.6FT

X1	92010.000	12.000	160.000	366.500	235.000	135.000	185.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	616.600	626.100	0.0
GR	616.600	140.000	604.800	160.000	598.100	170.800	593.700	182.300	587.100	223.500
GR	586.100	238.900	586.100	266.800	586.300	309.800	591.100	319.500	598.100	344.500
GR	611.600	366.500	626.100	386.500	0.0	0.0	0.0	0.0	0.0	0.0

X1	92011.000	24.000	160.000	366.500	10.000	10.000	10.000	0.0	0.0	0.0
BT	8.000	143.000	616.600	616.600	143.000	643.600	616.600	160.000	644.200	616.600
BT	160.000	644.200	613.400	366.500	651.800	622.800	366.500	651.800	626.100	386.500
BT	652.200	626.100	386.500	626.100	626.100	0.0	0.0	0.0	0.0	0.0
GR	616.600	140.000	616.600	143.000	616.600	160.000	604.800	160.000	598.100	170.800
GR	593.700	182.800	587.100	223.500	586.500	228.000	616.500	228.000	616.500	230.500
GR	586.500	230.500	586.100	238.900	586.100	266.800	586.000	295.500	619.000	295.500
GR	619.000	298.000	586.000	298.000	586.300	309.800	591.100	319.500	598.100	344.500
GR	611.600	366.500	626.100	366.500	626.100	383.500	626.100	386.500	0.0	0.0

X1	92012.000	0.0	0.0	0.0	39.000	39.000	39.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0

X1	92013.000	12.000	160.000	366.500	10.000	10.000	10.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	0.0	0.0	0.0	616.600	626.100	0.0
GR	616.600	140.000	604.800	160.000	598.100	170.800	593.700	182.800	587.100	223.500
GR	586.100	238.900	586.100	266.800	586.300	309.800	591.100	319.500	598.100	344.500
GR	611.600	366.500	626.100	386.500	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.045	0.042	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	112.000	418.000

VALLEY SECTION I

X1	92030.000	17.000	173.000	386.000	210.000	205.000	200.000	0.0	0.0	0.0
GR	620.000	35.000	610.000	90.000	604.000	112.000	602.000	135.000	600.000	173.000
GR	590.000	202.000	588.000	224.000	587.000	250.000	587.000	275.000	588.000	310.000
GR	590.000	330.000	593.000	345.000	595.000	355.000	598.000	370.000	600.000	386.000
GR	610.000	418.000	614.000	436.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.040	0.038	0.300	0.500	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	38.000	568.000

VALLEY SECTION J MANUFACTURED

X1	92480.000	20.000	332.000	522.000	450.000	450.000	450.000	0.0	0.0	0.0
GR	616.000	20.000	610.000	40.000	602.000	65.000	600.000	100.000	599.200	102.000
GR	599.200	250.000	600.000	255.000	602.000	275.000	602.000	320.000	600.000	328.000

GR	598.000	332.000	593.800	369.000	589.000	403.000	590.300	442.000	589.000	482.000
GR	598.000	522.000	600.000	535.000	510.000	568.000	613.000	570.000	613.000	590.000

VALLEY SECTION K

X1	93300.000	17.000	500.000	700.000	360.000	360.000	360.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	240.000	0.0	710.000	0.0	0.0	0.0	0.0
GR	620.000	185.000	610.000	230.000	602.000	252.000	600.000	360.000	602.000	468.000
GR	602.000	486.000	600.400	500.000	598.800	511.000	593.800	548.000	589.000	582.000
GR	590.300	621.000	589.000	660.000	598.800	697.000	601.200	700.000	601.800	711.000
GR	612.400	748.000	613.000	759.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.055	0.045	0.038	0.300	0.500	0.0	0.0	0.0	0.0	0.0

VALLEY SECTION L MANUFACTURED

X1	94035.000	20.000	1130.000	1352.000	650.000	735.000	735.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	600.000	0.0	0.0	0.0	0.0	0.0	0.0
GR	612.000	235.000	610.000	265.000	608.000	280.000	607.000	500.000	605.000	590.000
GR	604.000	645.000	602.500	750.000	602.000	895.000	602.000	928.000	602.550	1030.000
GR	602.000	1128.000	600.000	1130.000	593.800	1167.000	589.000	1201.000	590.350	1240.000
GR	589.000	1279.000	598.000	1320.000	600.000	1352.000	610.000	1390.000	614.000	1405.000
NH	4.000	0.100	1230.000	0.055	2050.000	0.040	2224.000	0.050	2281.000	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1500.000	2224.000

VALLEY SECTION M

X1	94900.000	21.000	2050.000	2224.000	490.000	1020.000	900.000	0.0	0.0	0.0
GR	612.000	755.000	610.500	800.000	610.500	1170.000	610.500	1230.000	610.500	1300.000
GR	610.500	1380.000	610.500	1520.000	610.500	1615.000	610.500	1770.000	610.500	1880.000
GR	610.500	1915.000	608.000	2025.000	600.000	2050.000	593.100	2080.000	589.000	2115.000
GR	587.300	2150.000	589.600	2185.000	598.900	2217.000	603.800	2224.000	618.000	2248.000
GR	638.300	2281.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NH	4.000	0.100	1170.000	0.060	1331.000	0.040	1568.000	0.045	1725.000	0.0

VALLEY SECTION N

X1	96100.000	20.000	1331.000	1568.000	715.000	1375.000	1220.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1125.000	0.0	1700.000	0.0	0.0	0.0	0.0
GR	610.000	730.000	609.200	760.000	609.000	1000.000	608.000	1085.000	606.000	1170.000
GR	604.000	1255.000	602.000	1285.000	600.000	1331.000	598.900	1333.000	591.500	1380.000
GR	591.500	1425.000	592.400	1470.000	597.200	1510.000	598.900	1556.000	602.800	1568.000
GR	602.000	1600.000	604.000	1650.000	606.000	1670.000	610.000	1700.000	618.000	1725.000
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

VALLEY SECTION O MAUNFACTURED

X1	96500.000	23.000	330.000	525.000	385.000	390.000	400.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	330.000	0.0	900.000	0.0	0.0	0.0	0.0
X4	1.000	611.500	260.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	626.000	0.0	620.000	50.000	610.000	120.000	610.000	160.000	610.000	300.000
GR	600.000	330.000	589.900	337.000	593.100	373.000	589.000	410.000	587.300	447.000
GR	589.600	484.000	598.900	518.000	600.000	525.000	603.800	540.000	600.800	635.000
GR	602.000	700.000	604.000	730.000	606.000	760.000	606.000	790.000	608.000	850.000
GR	610.000	875.000	612.000	900.000	620.000	950.000	0.0	0.0	0.0	0.0
NC	0.050	0.055	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0

VALLEY SECTION P

X1	97300.000	19.000	100.000	286.000	995.000	810.000	950.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	0.0	800.000	0.0	0.0	0.0	0.0

GR	628.000	20.000	626.000	50.000	620.000	88.000	611.600	100.000	598.900	103.000
GR	594.200	145.000	588.800	180.000	590.200	215.000	594.000	250.000	598.900	286.000
GR	604.600	296.000	603.200	310.000	600.000	425.000	604.000	625.000	606.000	750.000
GR	608.000	810.000	610.000	850.000	612.000	1020.000	614.000	1070.000	0.0	0.0
EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 89500.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS      410.0    1080.0  TYPE      1  TARGET     -410.000

        VALLEY SECTION A   STARTING STATION , DOWNSTREAM OF THE

                           U.S.G.S GAGE 1515

 89500.00    20.50   605.70     0.0    605.70   606.05     0.35     0.0      0.0    601.60
   13600.     1666.  11902.     32.     1837.   2340.      34.      0.       0.    600.20
     0.0      0.91     5.09    0.93    0.090   0.040    0.063     0.0    585.20    410.00
 0.000451   89500.   89500.   89500.        0       0        0    -0.01    610.38   1020.38

*SECNO 90030.000

3470 ENCROACHMENT STATIONS      540.0    1125.0  TYPE      1  TARGET     -540.000

        VALLEY SECTION B  MANUFACTURED

 90030.00    20.77   605.97     0.0      0.0   606.26     0.29     0.21     0.01    600.00
   13600.     845.  12616.    139.     1009.   2792.     125.      47.      6.     600.00
     0.03     0.84     4.52    1.11    0.090   0.040    0.063    0.041    585.20    607.86
 0.000349     440.     530.    575.        2       0        0    -0.02    460.00   1067.86


CCHV    0.300 CEHV    0.500
*SECNO 90600.000

        VALLEY SECTION C

 90600.00    20.42   606.22     0.0      0.0   606.49     0.27     0.22     0.01    600.00
   13600.      39.  13518.     43.      48.   3225.      39.     102.      11.     600.00
     0.08     0.81     4.19    1.12    0.065   0.040    0.045    0.040    585.80    223.37
 0.000294     600.     680.    800.        2       0        0    -0.01    214.06    437.43


CCHV    0.100 CEHV    0.300
*SECNO 91120.000

        VALLEY SECTION D  MANUFACTURED

 91120.00    20.55   606.35     0.0      0.0   606.57     0.22     0.08     0.01    600.00
   13600.      59.  13495.     47.      61.   3570.      44.     126.      12.     600.00
     0.10     0.97     3.78    1.05    0.050   0.040    0.045    0.040    585.80    560.94
 0.000246     300.     300.    300.        2       0        0    -0.01    245.03    805.98


*SECNO 91550.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
```

SECTION E LOW DAM REGARDED AS STEP DAM

91550.00	16.81	606.51	0.0	0.0	606.67	0.16	0.09	0.01	606.80
13600.	0.	13503.	97.	0.	4203.	85.	164.	15.	598.20
0.14	0.0	3.21	1.14	0.045	0.040	0.045	0.040	589.70	41.00
0.000197	475.	415.	375.	2	0	0	-0.00	270.55	311.55

*SECNO 91551.000

3301 HV CHANGED MORE THAN HVINS

91551.00	7.95	606.15	0.0	0.0	606.86	0.70	0.02	0.16	606.80
13600.	0.	13309.	291.	0.	1964.	78.	168.	15.	598.20
0.14	0.0	6.78	3.71	0.045	0.040	0.045	0.040	598.20	41.00
0.002219	50.	50.	50.	2	0	0	-0.03	269.68	310.68

*SECNO 91552.000

91552.00	7.97	606.17	0.0	0.0	606.87	0.70	0.02	0.00	606.80
13600.	0.	13309.	291.	0.	1966.	78.	168.	15.	598.20
0.14	0.0	6.77	3.71	0.045	0.040	0.045	0.040	598.20	41.00
0.002211	8.	8.	8.	0	0	0	-0.03	269.70	310.70

*SECNO 91553.000

3301 HV CHANGED MORE THAN HVINS

91553.00	17.10	606.80	0.0	0.0	606.95	0.15	0.02	0.05	606.80
13600.	0.	13496.	104.	0.	4274.	91.	172.	16.	598.20
0.14	0.0	3.16	1.13	0.045	0.040	0.045	0.040	589.70	41.00
0.000187	50.	50.	50.	2	0	0	-0.00	271.26	312.26

*SECNO 91850.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 621.20 ELREA 612.20

SECTION F MAIN ST. BRIDGE, WIDTH 68 FT, LENGTH 240 FT

MAX LC 614.8 FT, MIN TRD 612.2 FT

91850.00	18.73	606.73	0.0	0.0	607.09	0.36	0.08	0.06	613.90
13600.	0.	13600.	0.	0.	2817.	0.	193.	17.	605.80
0.16	0.0	4.83	0.0	0.045	0.040	0.045	0.040	588.00	122.90
0.000562	330.	250.	170.	2	0	0	-0.01	215.10	338.00

*SECNO 91851.000

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD 14 MIN ELTRD 612.20 MAX ELLC 621.20

```
 91851.00    18.72   606.72     0.0      0.0    607.10     0.39     0.01     0.01   619.30
   13600.       0.   13600.      0.       0.     2722.       0.      193.      17.    614.00
     0.16      0.0     5.00     0.0    0.045    0.040    0.045    0.040   588.00   123.19
 0.000977      10.      10.      10.        1        0        0    -0.00   207.31   338.00

*SECNO 91852.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20

 91852.00    18.78   606.78     0.0      0.0    607.16     0.38     0.06     0.00   619.30
   13600.       0.   13600.      0.       0.     2732.       0.      197.      17.    614.00
     0.16      0.0     4.98     0.0    0.045    0.040    0.045    0.040   588.00   123.05
 0.000967      62.      62.      62.        1        0        0    -0.00   207.45   338.00

*SECNO 91853.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       621.20 ELREA       612.20

 91853.00    18.82   606.82     0.0      0.0    607.17     0.36     0.01     0.00   613.90
   13600.       0.   13600.      0.       0.     2836.       0.      198.      17.    605.80
     0.16      0.0     4.79     0.0    0.045    0.040    0.045    0.040   588.00   122.64
 0.000551      10.      10.      10.        2        0        0    -0.00   215.36   338.00

*SECNO 91950.000

3470 ENCROACHMENT STATIONS      150.0     360.0  TYPE      1  TARGET     -150.000

        VALLEY SECTION G  MANUFACTURED

 91950.00    21.11   606.91     0.0      0.0    607.27     0.36     0.10     0.00   599.00
   13600.       5.   13484.     110.       9.     2773.      61.      211.      18.    599.00
     0.17      0.62     4.86     1.81    0.050    0.040    0.050    0.040   585.80   155.84
 0.000415     245.     205.     160.        2        0        0    -0.01   181.07   336.91

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       616.60 ELREA       626.10

        SECTION H   PROPOSED NEW BRIDGE-415'U/S OF U/S FACE OF MAIN ST. BRIDGE

                    WIDTH 39 FT, LENGTH 206.5 FT,MAX LC 622.8 FT,MIN TRD 616.6FT

 92010.00    20.97   607.07     0.0      0.0    607.35     0.28     0.07     0.01   604.80
   13600.       0.   13600.      0.       0.     3227.       0.      224.      19.    611.60
     0.19      0.0     4.21     0.0    0.050    0.040    0.050    0.040   586.10   160.00
 0.000330     235.     185.     135.        2        0        0    -0.01   199.13   359.13

*SECNO 92011.000

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD 8 MIN ELTRD 616.60 MAX ELLC 626.10

92011.00	21.07	607.07	0.0	0.0	607.36	0.29	0.00	0.01	616.60
13600.	0.	13600.	0.	0.	3130.	0.	225.	19.	626.10
0.19	0.0	4.34	0.0	0.050	0.040	0.050	0.040	586.00	160.00
0.000567	10.	10.	10.	1	0	0	-0.01	194.12	359.12

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD 8 MIN ELTRD 616.60 MAX ELLC 626.10

92012.00	21.09	607.09	0.0	0.0	607.38	0.29	0.02	0.00	616.60
13600.	0.	13600.	0.	0.	3132.	0.	227.	19.	626.10
0.19	0.0	4.34	0.0	0.050	0.040	0.050	0.040	586.00	160.00
0.000566	39.	39.	39.	0	0	0	-0.01	194.14	359.14

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 616.60 ELREA 626.10

92013.00	21.01	607.11	0.0	0.0	607.39	0.27	0.00	0.00	604.80
13600.	0.	13600.	0.	0.	3233.	0.	228.	19.	611.60
0.19	0.0	4.21	0.0	0.050	0.040	0.050	0.040	586.10	160.00
0.000328	10.	10.	10.	1	0	0	-0.01	199.17	359.17

*SECNO 92030.000

VALLEY SECTION I

92030.00	20.25	607.25	0.0	0.0	607.45	0.20	0.06	0.01	600.00
13600.	558.	12936.	106.	354.	3494.	84.	245.	21.	600.00
0.21	1.58	3.70	1.26	0.045	0.040	0.042	0.040	587.00	100.10
0.000242	210.	200.	205.	2	0	0	-0.01	309.09	409.19

CCHV 0.300 CEHV 0.500
*SECNO 92480.000

VALLEY SECTION J MANUFACTURED

92480.00	18.44	607.44	0.0	0.0	607.57	0.13	0.09	0.02	598.00
13600.	3768.	9501.	331.	2004.	2935.	201.	292.	25.	598.00
0.25	1.88	3.24	1.65	0.040	0.038	0.040	0.040	589.00	48.01
0.000180	450.	450.	450.	2	0	0	-0.03	511.53	559.54

*SECNO 93300.000

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

3470 ENCROACHMENT STATIONS 240.0 710.0 TYPE 1 TARGET 470.000

VALLEY SECTION K

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93300.00     18.49    607.49      0.0       0.0    607.65      0.16      0.07      0.01    600.40
  13600.      3111.    10407.     82.     1632.     2967.       50.      332.       29.    601.20
    0.28      1.91      3.51     1.36     0.040     0.038     0.040     0.039    589.00    240.00
0.000225      360.      360.     360.         1         0         0    -0.02    470.00    710.00


CCHV    0.300 CEHV    0.500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS      600.0    1405.0  TYPE     1  TARGET     -600.000

       VALLEY SECTION L  MANUFACTURED

94035.00     18.68    607.68      0.0       0.0    607.81      0.13      0.15      0.01    600.00
  13600.      3008.    10467.    125.     2664.     3216.      112.      418.       39.    600.00
    0.35      1.13      3.25     1.12     0.055     0.038     0.045     0.039    589.00    600.00
0.000198      650.      735.     735.         2         0         0    -0.04    781.19   1381.19


1490 NH CARD USED
*SECNO 94900.000

       VALLEY SECTION M

94900.00     20.51    607.81      0.0       0.0    608.17      0.36      0.24      0.12    600.00
  13600.       130.    13458.     12.       95.     2769.       14.      497.       46.    603.80
    0.40      1.36      4.86     0.90     0.055     0.040     0.050     0.040    587.30   2025.60
0.000441      490.      900.    1020.         2         0         0    -0.01    205.17   2230.77


1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS     1125.0    1700.0  TYPE     1  TARGET     575.000

       VALLEY SECTION N

96100.00     16.97    608.47      0.0       0.0    608.65      0.17      0.42      0.06    600.00
  13600.      1068.    11604.    928.      891.     3267.      560.      598.       56.    602.80
    0.51      1.20      3.55     1.66     0.061     0.040     0.045     0.039    591.50   1125.00
0.000279      715.     1220.    1375.         2         0         0    -0.02    563.55   1688.55


CCHV    0.100 CEHV    0.300
*SECNO 96500.000

3470 ENCROACHMENT STATIONS      330.0     900.0  TYPE     1  TARGET     570.000

       VALLEY SECTION O  MAUNFACTURED

96500.00     21.29    608.59      0.0       0.0    608.73      0.15      0.09      0.00    600.00
  13600.        0.    11332.    2268.        0.     3412.     1615.      643.       61.    600.00
    0.54      0.0       3.32     1.40     0.055     0.038     0.045     0.039    587.30    330.00
0.000176      385.      400.     390.         2         0         0    -0.02    527.33    857.33


*SECNO 97300.000
  SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
  Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
  TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
  SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS        0.0     800.0  TYPE     1  TARGET     799.999
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VALLEY SECTION P

97300.00	19.99	608.79	0.0	0.0	608.92	0.13	0.18	0.00	611.60
13600.	0.	9600.	4000.	0.	2835.	2898.	753.	73.	598.90
0.63	0.0	3.39	1.38	0.050	0.040	0.055	0.039	588.80	100.66
0.000233	995.	950.	810.	0	0	0	-0.03	699.34	800.00

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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50 YEAR

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	0.0	0.0	0.0	0.	607.250	0.0
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 2

CCHV     0.100 CEHV     0.300
*SECNO 89500.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST

3470 ENCROACHMENT STATIONS       410.0     1080.0  TYPE       1  TARGET      -410.000

        VALLEY SECTION A   STARTING STATION , DOWNSTREAM OF THE

                           U.S.G.S GAGE 1515

 89500.00     22.05    607.25      0.0     607.25    607.73      0.48      0.0       0.0    601.60
   18900.     3229.    15601.      70.     2556.     2548.      56.        0.        0.    600.20
     0.0      1.26      6.12      1.24     0.090     0.040     0.063      0.0    585.20    410.00
 0.000584   89500.    89500.    89500.         0         0         0    -0.02    613.87   1023.87

*SECNO 90030.000

3470 ENCROACHMENT STATIONS       540.0     1125.0  TYPE       1  TARGET      -540.000

        VALLEY SECTION B  MANUFACTURED

 90030.00     22.38    607.58      0.0       0.0    608.01      0.43      0.27      0.01    600.00
   18900.     1654.    16965.     281.     1467.     3053.     188.       56.        6.    600.00
     0.03      1.13      5.56      1.49     0.090     0.040     0.063     0.041    585.20    563.38
 0.000468     440.      530.      575.         2         0         0    -0.01    511.72   1075.10

CCHV     0.300 CEHV     0.500
*SECNO 90600.000

        VALLEY SECTION C

 90600.00     22.08    607.88      0.0       0.0    608.31      0.43      0.30      0.00    600.00
   18900.       99.    18704.      97.      86.     3532.      62.       120.      12.     600.00
     0.06      1.15      5.30      1.56     0.065     0.040     0.045     0.040    585.80    210.92
 0.000415     600.      680.      800.         2         0         0    -0.01    229.83    440.75

CCHV     0.100 CEHV     0.300
*SECNO 91120.000

        VALLEY SECTION D  MANUFACTURED

 91120.00     22.28    608.08      0.0       0.0    608.43      0.35      0.11      0.01    600.00
   18900.     131.     18664.     104.      98.     3937.      72.       147.      13.     600.00
     0.08      1.34      4.74      1.45     0.050     0.040     0.045     0.040    585.80    555.75
 0.000339     300.      300.      300.         2         0         0    -0.01    254.04    809.79

*SECNO 91550.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN        SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID       ENDST
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SECTION E LOW DAM REGARDED AS STEP DAM

91550.00	18.62	608.32	0.0	0.0	608.56	0.25	0.13	0.01	606.80
18900.	3.	18695.	202.	6.	4654.	127.	190.	16.	598.20
0.11	0.45	4.02	1.59	0.045	0.040	0.045	0.040	589.70	32.60
0.000270	475.	415.	375.	2	0	0	-0.01	283.40	316.00

*SECNO 91551.000

3301 HV CHANGED MORE THAN HVINS

91551.00	9.69	607.89	0.0	0.0	608.79	0.90	0.03	0.19	606.80
18900.	3.	18396.	501.	3.	2398.	117.	194.	16.	598.20
0.11	1.02	7.67	4.30	0.045	0.040	0.045	0.040	598.20	34.94
0.002185	50.	50.	50.	2	0	0	-0.03	281.06	316.00

*SECNO 91552.000

91552.00	9.71	607.91	0.0	0.0	608.81	0.90	0.02	0.00	606.80
18900.	3.	18395.	502.	3.	2400.	117.	194.	16.	598.20
0.11	1.02	7.66	4.30	0.045	0.040	0.045	0.040	598.20	34.90
0.002179	8.	8.	8.	0	0	0	-0.03	281.10	316.00

*SECNO 91553.000

3301 HV CHANGED MORE THAN HVINS

91553.00	18.96	608.66	0.0	0.0	608.90	0.24	0.03	0.07	606.80
18900.	5.	18678.	217.	10.	4740.	136.	198.	17.	598.20
0.12	0.50	3.94	1.60	0.045	0.040	0.045	0.040	589.70	30.69
0.000253	50.	50.	50.	2	0	0	-0.01	285.31	316.00

*SECNO 91850.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA 621.20 ELREA 612.20

SECTION F MAIN ST. BRIDGE, WIDTH 68 FT, LENGTH 240 FT

MAX LC 614.8 FT, MIN TRD 612.2 FT

91850.00	20.55	608.55	0.0	0.0	609.09	0.54	0.10	0.09	613.90
18900.	0.	18900.	0.	0.	3214.	0.	222.	18.	605.80
0.13	0.0	5.88	0.0	0.045	0.040	0.045	0.040	588.00	117.59
0.000724	330.	250.	170.	2	0	0	-0.01	220.41	338.00

*SECNO 91851.000

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD 14 MIN ELTRD 612.20 MAX ELLC 621.20

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 91851.00    20.53   608.53     0.0      0.0    609.11     0.58     0.01     0.01   619.30
   18900.       0.   18900.      0.       0.     3102.       0.     222.      18.    614.00
     0.13      0.0     6.09     0.0    0.045     0.040    0.045    0.040   588.00   117.85
 0.001319      10.      10.      10.        2         0        0    -0.00   212.65   338.00

*SECNO 91852.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20

 91852.00    20.62   608.62     0.0      0.0    609.19     0.57     0.08     0.00   619.30
   18900.       0.   18900.      0.       0.     3121.       0.     227.      18.    614.00
     0.13      0.0     6.06     0.0    0.045     0.040    0.045    0.040   588.00   117.59
 0.001297      62.      62.      62.        2         0        0    -0.00   212.91   338.00

*SECNO 91853.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       621.20 ELREA       612.20

 91853.00    20.68   608.68     0.0      0.0    609.21     0.53     0.01     0.00   613.90
   18900.       0.   18900.      0.       0.     3242.       0.     227.      18.    605.80
     0.13      0.0     5.83     0.0    0.045     0.040    0.045    0.040   588.00   117.22
 0.000705      10.      10.      10.        2         0        0    -0.01   220.78   338.00

*SECNO 91950.000

3470 ENCROACHMENT STATIONS      150.0     360.0  TYPE      1  TARGET     -150.000

        VALLEY SECTION G  MANUFACTURED

 91950.00    22.98   608.78     0.0      0.0    609.34     0.56     0.13     0.01   599.00
   18900.      11.   18690.     200.      13.     3086.      85.     243.      19.    599.00
     0.14      0.83     6.06     2.35    0.050     0.040    0.050    0.040   585.80   155.33
 0.000558     245.     205.     160.        2         0        0    -0.01   183.45   338.78

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       616.60 ELREA       626.10

        SECTION H   PROPOSED NEW BRIDGE-415'U/S OF U/S FACE OF MAIN ST. BRIDGE

                    WIDTH 39 FT, LENGTH 206.5 FT,MAX LC 622.8 FT,MIN TRD 616.6FT

 92010.00    22.93   609.03     0.0      0.0    609.45     0.42     0.09     0.01   604.80
   18900.       0.   18900.      0.       0.     3619.       0.     257.      20.    611.60
     0.15      0.0     5.22     0.0    0.050     0.040    0.050    0.040   586.10   160.00
 0.000446     235.     185.     135.        2         0        0    -0.01   202.31   362.31

*SECNO 92011.000

3265 DIVIDED FLOW

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST
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3370 NORMAL BRIDGE,NRD    8 MIN ELTRD    616.60 MAX ELLC    626.10

 92011.00    23.01    609.01     0.0      0.0    609.46     0.45     0.01     0.01   616.60
   18900.       0.    18900.      0.       0.     3512.      0.      258.      20.    626.10
     0.15      0.0      5.38     0.0    0.050     0.040    0.050    0.040   586.00   160.00
 0.000793      10.      10.      10.        1         0        0    -0.01   197.30   362.30

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD    8 MIN ELTRD    616.60 MAX ELLC    626.10

 92012.00    23.04    609.04     0.0      0.0    609.49     0.45     0.03     0.00   616.60
   18900.       0.    18900.      0.       0.     3515.      0.      261.      20.    626.10
     0.15      0.0      5.38     0.0    0.050     0.040    0.050    0.040   586.03   160.00
 0.000791      39.      39.      39.        0         0        0    -0.01   197.32   362.32

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       616.60 ELREA       626.10

 92013.00    22.98    609.08     0.0      0.0    609.50     0.42     0.01     0.00   604.80
   18900.       0.    18900.      0.       0.     3630.      0.      262.      20.    611.60
     0.15      0.0      5.21     0.0    0.050     0.040    0.050    0.040   586.10   160.00
 0.000442      10.      10.      10.        2         0        0    -0.01   202.40   362.40

*SECNO 92030.000

        VALLEY SECTION I

 92030.00    22.29    609.29     0.0      0.0    609.59     0.29     0.07     0.01   600.00
   18900.    1080.    17591.     230.     511.     3930.     138.     281.      22.    600.00
     0.17      2.11      4.48    1.66    0.045     0.040    0.042    0.040   587.00    92.59
 0.000303     210.     200.     205.        2         0        0    -0.00   323.15   415.74

CCHV    0.300 CEHV    0.500
*SECNO 92480.000

        VALLEY SECTION J  MANUFACTURED

 92480.00    20.57    609.57     0.0      0.0    609.73     0.17     0.11     0.04   598.00
   18900.    6030.    12311.     559.    2617.     3340.     288.     337.      26.    598.00
     0.21      2.30      3.69    1.94    0.040     0.038    0.040    0.040   589.00    41.35
 0.000197     450.     450.     450.        2         0        0    -0.02   525.23   566.58

*SECNO 93300.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      240.0      710.0  TYPE      1  TARGET      470.000

        VALLEY SECTION K
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 93300.00    20.53   609.63     0.0      0.0    609.83     0.20     0.08     0.02   600.40
   18900.    5233.   13537.     130.    2185.    3392.      82.     386.      30.   601.20
     0.23     2.40     3.99     1.59    0.040    0.038    0.040    0.040   589.00   240.00
 0.000244     360.     360.     360.        2        0        0    -0.02   470.00   710.00

CCHV    0.300 CEHV    0.500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS      600.0    1405.0  TYPE      1  TARGET      -600.000

        VALLEY SECTION L  MANUFACTURED

 94035.00    20.86   609.86     0.0      0.0    610.00     0.15     0.16     0.02   600.00
   18900.    5433.   13223.     243.    3816.    3699.     185.     493.      40.   600.00
     0.30     1.42     3.58     1.32    0.055    0.038    0.045    0.039   589.00   600.00
 0.000199     650.     735.     735.        2        0        0    -0.04   789.45  1389.45

1490 NH CARD USED
*SECNO 94900.000

        VALLEY SECTION M

 94900.00    22.62   609.92     0.0      0.0    610.45     0.53     0.26     0.19   600.00
   18900.     348.   18510.      42.     230.    3137.      32.     588.      48.   603.80
     0.34     1.51     5.90     1.33    0.055    0.040    0.050    0.040   587.30  1940.33
 0.000550     490.     900.    1020.        2        0        0    -0.02   294.02  2234.35

1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS     1125.0    1700.0  TYPE      1  TARGET      575.000

        VALLEY SECTION N

 96100.00    19.31   610.81     0.0      0.0    611.01     0.20     0.46     0.10   600.00
   18900.    2022.   15114.    1764.    1371.    3820.     859.     713.      59.   602.80
     0.44     1.47     3.96     2.05    0.062    0.040    0.045    0.040   591.50  1125.00
 0.000281     715.    1220.    1375.        2        0        0    -0.02   575.00  1700.00

CCHV    0.100 CEHV    0.300
*SECNO 96500.000

3470 ENCROACHMENT STATIONS      330.0     900.0  TYPE      1  TARGET      570.000

        VALLEY SECTION O  MAUNFACTURED

 96500.00    23.62   610.92     0.0      0.0    611.10     0.18     0.09     0.00   600.00
   18900.       0.   14566.    4334.       0.    3868.    2425.     769.      64.   600.00
     0.47     0.0      3.77     1.79    0.055    0.038    0.045    0.039   587.30   330.00
 0.000194     385.     400.     390.        2        0        0    -0.02   556.53   886.53

*SECNO 97300.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

3470 ENCROACHMENT STATIONS        0.0     800.0  TYPE      1  TARGET      799.999
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VALLEY SECTION P

97300.00	22.35	611.15	0.0	0.0	611.30	0.15	0.19	0.00	611.60
18900.	0.	12009.	6891.	0.	3271.	4104.	908.	76.	598.90
0.56	0.0	3.67	1.68	0.050	0.040	0.055	0.040	588.80	100.11
0.000230	995.	950.	810.	0	0	0	-0.03	699.89	800.00

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HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
ERROR CORR -  01,02,03
MODIFICATION -  50,51,52,53
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100 YEAR

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	0.0	0.0	0.0	0.	607.550	0.0

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	3.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 3

CCHV    0.100 CEHV    0.300
*SECNO 89500.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      410.0    1080.0  TYPE      1  TARGET     -410.000

      VALLEY SECTION A   STARTING STATION , DOWNSTREAM OF THE

                         U.S.G.S GAGE 1515

 89500.00    22.35   607.55     0.0    607.55   608.11     0.56     0.0      0.0    601.60
   21000.    3770.   17147.     83.     2695.    2588.     61.      0.       0.     600.20
     0.0     1.40     6.63     1.37    0.090    0.040    0.063     0.0    585.20    410.00
 0.000669  89500.   89500.   89500.        0        0        0    -0.01   614.55   1024.55

*SECNO 90030.000

3470 ENCROACHMENT STATIONS      540.0    1125.0  TYPE      1  TARGET     -540.000

      VALLEY SECTION B  MANUFACTURED

 90030.00    22.72   607.92     0.0      0.0   608.43     0.50     0.31     0.01   600.00
   21000.    1958.   18708.    334.     1578.    3109.    204.      58.      6.     600.00
     0.03    1.24     6.02     1.64    0.090    0.040    0.063    0.041   585.20    540.00
 0.000536    440.     530.     575.        2        0        0    -0.03   536.65   1076.65

CCHV    0.300 CEHV    0.500
*SECNO 90600.000

      VALLEY SECTION C

 90600.00    22.46   608.26     0.0      0.0   608.77     0.51     0.34     0.00   600.00
   21000.    125.    20758.    118.      98.    3603.    68.      124.     12.     600.00
     0.06    1.27     5.76     1.73    0.065    0.040    0.045    0.040   585.80    208.69
 0.000478    600.     680.     800.        2        0        0    -0.01   232.84    441.52

CCHV    0.100 CEHV    0.300
*SECNO 91120.000

      VALLEY SECTION D  MANUFACTURED

 91120.00    22.71   608.51     0.0      0.0   608.91     0.41     0.13     0.01   600.00
   21000.    161.    20712.    128.     109.    4026.    30.      152.     14.     600.00
     0.08    1.48     5.14     1.60    0.050    0.040    0.045    0.040   585.80    554.48
 0.000387    300.     300.     300.        2        0        0    -0.01   256.23    810.71

*SECNO 91550.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLCSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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        SECTION E  LOW DAM REGARDED AS STEP DAM

 91550.00    19.07   608.77     0.0      0.0    609.07     0.29     0.14     0.01   606.80
   21000.       6.   20748.     246.      11.     4769.     139.     195.      16.    598.20
     0.10     0.57     4.35     1.78    0.045    0.040    0.045    0.040   589.70    30.06
 0.000306     475.     415.     375.        2        0        0    -0.01   285.94   316.00

*SECNO 91551.000

3301 HV CHANGED MORE THAN HVINS

 91551.00    10.10   608.30     0.0      0.0    609.31     1.01     0.03     0.22   606.80
   21000.       8.   20400.     591.       6.     2501.     127.     200.      17.    598.20
     0.10     1.31     8.16     4.66    0.045    0.040    0.045    0.040   598.20    32.67
 0.002337      50.      50.      50.        2        0        0    -0.03   283.33   316.00

*SECNO 91552.000
 91552.00    10.12   608.32     0.0      0.0    609.33     1.01     0.02     0.00   606.80
   21000.       8.   20399.     593.       6.     2504.     127.     200.      17.    598.20
     0.10     1.31     8.15     4.66    0.045    0.040    0.045    0.040   598.20    32.59
 0.002326       8.       8.       8.        1        0        0    -0.03   283.41   316.00

*SECNO 91553.000

3301 HV CHANGED MORE THAN HVINS

 91553.00    19.46   609.16     0.0      0.0    609.44     0.28     0.03     0.07   606.80
   21000.      10.   20726.     265.      15.     4865.     148.     205.      17.    598.20
     0.11     0.62     4.26     1.79    0.045    0.040    0.045    0.040   589.70    27.92
 0.000286      50.      50.      50.        2        0        0    -0.00   288.07   316.00

*SECNO 91850.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       621.20 ELREA       612.20

        SECTION F   MAIN ST. BRIDGE, WIDTH 68 FT, LENGTH 240 FT

                    MAX LC 614.8 FT, MIN TRD 612.2 FT

 91850.00    21.03   609.03     0.0      0.0    609.65     0.62     0.11     0.10   613.90
   21000.       0.   21000.      0.       0.     3321.      0.     228.      18.    605.80
     0.12     0.0      6.32     0.0     0.045    0.040    0.045    0.040   588.00   116.19
 0.000809     330.     250.     170.        2        0        0    -0.01   221.81   338.00

*SECNO 91851.000

3265 DIVIDED FLOW

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

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20
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 91851.00    21.01   609.01     0.0      0.0    609.68     0.67     0.01     0.01   619.30
   21000.       0.   21000.      0.       0.     3204.       0.     229.      18.    614.00
     0.12      0.0     6.55     0.0    0.045     0.040    0.045    0.040   588.00   116.44
 0.001491      10.      10.      10.        2         0        0    -0.00   214.06   338.00

*SECNO 91852.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  14 MIN ELTRD   612.20 MAX ELLC   621.20

 91852.00    21.11   609.11     0.0      0.0    609.77     0.66     0.09     0.00   619.30
   21000.       0.   21000.      0.       0.     3226.       0.     234.      19.    614.00
     0.12      0.0     6.51     0.0    0.045     0.040    0.045    0.040   588.00   116.14
 0.001464      62.      62.      62.        2         0        0    -0.00   214.36   338.00

*SECNO 91853.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       621.20 ELREA      612.20

 91853.00    21.18   609.18     0.0      0.0    609.78     0.61     0.01     0.00   613.90
   21000.       0.   21000.      0.       0.     3352.       0.     235.      19.    605.80
     0.12      0.0     6.26     0.0    0.045     0.040    0.045    0.040   588.00   115.77
 0.000785      10.      10.      10.        2         0        0    -0.01   222.23   338.00

*SECNO 91950.000

3470 ENCROACHMENT STATIONS      150.0     360.0  TYPE      1  TARGET     -150.000

        VALLEY SECTION G  MANUFACTURED

 91950.00    23.48   609.28     0.0      0.0    609.94     0.66     0.14     0.01   599.00
   21000.      13.   20751.     236.      14.     3170.      92.     250.      20.    599.00
     0.13      0.91     6.55     2.56    0.050     0.040    0.050    0.040   585.80   155.20
 0.000629     245.     205.     160.        2         0        0    -0.01   184.09   339.28

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       616.60 ELREA       626.10

        SECTION H   PROPOSED NEW BRIDGE-415'U/S OF U/S FACE OF MAIN ST. BRIDGE

                    WIDTH 39 FT, LENGTH 206.5 FT,MAX LC 622.8 FT,MIN TRD 616.6FT

 92010.00    23.47   609.57     0.0      0.0    610.06     0.49     0.10     0.02   604.80
   21000.       0.   21000.      0.       0.     3729.       0.     265.      21.    611.60
     0.14      0.0     5.63     0.0    0.050     0.040    0.050    0.040   586.10   160.00
 0.000501     235.     185.     135.        2         0        0    -0.01   203.19   363.19

*SECNO 92011.000

3265 DIVIDED FLOW

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST
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3370 NORMAL BRIDGE,NRD   8 MIN ELTRD   616.60 MAX ELLC   626.10

 92011.00    23.56   609.56     0.0      0.0   610.08     0.52     0.01     0.01   616.60
   21000.       0.   21000.      0.       0.    3617.       0.     266.      21.   626.10
     0.14      0.0     5.81     0.0    0.050    0.040    0.050    0.040   586.00   160.00
 0.000902      10.      10.      10.        2        0        0    -0.01   198.17   363.17

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD   8 MIN ELTRD   616.60 MAX ELLC   626.10

 92012.00    23.59   609.59     0.0      0.0   610.11     0.52     0.04     0.00   616.60
   21000.       0.   21000.      0.       0.    3622.       0.     269.      21.   626.10
     0.14      0.0     5.80     0.0    0.050    0.040    0.050    0.040   586.00   160.00
 0.000898      39.      39.      39.        0        0        0    -0.01   198.21   363.21

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA      616.60 ELREA      626.10

 92013.00    23.53   609.63     0.0      0.0   610.12     0.49     0.01     0.00   604.80
   21000.       0.   21000.      0.       0.    3742.       0.     270.      21.   611.60
     0.14      0.0     5.61     0.0    0.050    0.040    0.050    0.040   586.10   160.00
 0.000496      10.      10.      10.        2        0        0    -0.01   203.30   363.30

*SECNO 92030.000

        VALLEY SECTION I

 92030.00    22.88   609.88     0.0      0.0   610.22     0.34     0.08     0.02   600.00
   21000.     1292.   19424.    284.     559.    4056.     156.     289.      22.   600.00
     0.15      2.31     4.79    1.81    0.045    0.040    0.042    0.040   587.00    90.43
 0.000333     210.     200.     205.        2        0        0    -0.00   327.20   417.63

CCHV    0.300 CEHV    0.500
*SECNO 92480.000

        VALLEY SECTION J  MANUFACTURED

 92480.00    21.20   610.20     0.0      0.0   610.38     0.18     0.12     0.05   598.00
   21000.     6916.   13428.    655.    2800.    3460.     317.     348.      26.   598.00
     0.19      2.47     3.88    2.07    0.040    0.038    0.040    0.040   589.00    39.34
 0.000208     450.     450.     450.        2        0        0    -0.02   528.80   568.13

*SECNO 93300.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      240.0      710.0  TYPE      1  TARGET      470.000

        VALLEY SECTION K
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 93300.00    21.26   610.26     0.0      0.0    610.48     0.22     0.08     0.02   600.40
   21000.    6063.   14789.    148.    2349.    3519.      88.     400.      31.   601.20
     0.22     2.58     4.20    1.68    0.040    0.038    0.040    0.040   589.00   240.00
 0.000257     360.     360.    360.        2        0        0    -0.02   470.00   710.00

CCHV    0.300 CEHV    0.500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS      600.0    1405.0  TYPE      1  TARGET     -600.000

        VALLEY SECTION L  MANUFACTURED

 94035.00    21.51   610.51     0.0      0.0    610.67     0.16     0.16     0.02   600.00
   21000.    6371.   14327.    302.    4162.    3844.     210.     513.      40.   600.00
     0.28     1.53     3.73    1.44    0.055    0.038    0.045    0.039   589.00   600.00
 0.000205     650.     735.    735.        2        0        0    -0.04   791.91  1391.91

1490 NH CARD USED
*SECNO 94900.000

        VALLEY SECTION M

 94900.00    23.26   610.56     0.0      0.0    611.16     0.60     0.27     0.22   600.00
   21000.     487.   20456.     57.     373.    3248.      39.     615.      55.   603.80
     0.32     1.30     6.30    1.48    0.055    0.040    0.050    0.040   587.30   798.24
 0.000598     490.     900.   1020.        2        0        0    -0.01  1437.18  2235.42

1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS     1125.0    1700.0  TYPE      1  TARGET      575.000

        VALLEY SECTION N

 96100.00    20.03   611.53     0.0      0.0    611.75     0.22     0.48     0.11   600.00
   21000.    2403.   16491.   2106.    1521.    3993.     956.     747.      75.   602.80
     0.41     1.58     4.13    2.20    0.063    0.040    0.045    0.040   591.50  1125.00
 0.000289     715.    1220.   1375.        2        0        0    -0.02   575.00  1700.00

CCHV    0.100 CEHV    0.300
*SECNO 96500.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS      330.0     900.0  TYPE      1  TARGET      570.000

        VALLEY SECTION O  MAUNFACTURED

 96500.00    24.36   611.66     0.0      0.0    611.85     0.20     0.10     0.00   600.00
   21000.       0.   15811.   5189.       0.    4011.    2694.     807.      80.   600.00
     0.44     0.00     3.94    1.93    0.055    0.038    0.045    0.039   587.30   260.00
 0.000204     385.     400.    390.        2        0        0    -0.02   565.71   895.71

*SECNO 97300.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       HTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
```

3248
373
39
3660

3470 ENCROACHMENT STATIONS 0.0 800.0 TYPE 1 TARGET 799.999

VALLEY SECTION P

97300.00	23.10	611.90	0.0	0.0	612.05	0.16	0.20	0.00	611.60
21000.	0.	12969.	8031.	0.	3410.	4488.	955.	93.	598.90
0.53	0.00	3.80	1.79	0.050	0.040	0.055	0.040	588.80	99.59
0.000235	995.	950.	810.	1	0	0	-0.03	700.41	800.00

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: FRANKENMUTH, CITY

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

CASS RIVER, FRANKENMUTH, MICHIGAN

HYDRAULIC ANALYSIS

1. INTRODUCTION

The stream being studied is the Cass River in the City of Frankenmuth, Michigan with 848 square miles drainage area. The City boundaries where the river passes through are taken as the study limits. The flows used in this study were obtained by analyzing the data from USGS gaging station 1515, located at Frankenmuth. These flows have been approved by the Michigan Department of Natural Resources and shown as follows:

	Peak Flows (cfs)				
	10-year 1942		50-year	100-year	500-year
At gaging station 1515 (D/S limit)	13600	17700	18900	21000	26000

2. METHOD OF ANALYSIS

Water surface profiles were computed through the HEC-2 backwater computer model, developed by the U.S. Army Corps of Engineers (Ref. 1).

2.1 Cross Sections

Valley and bridge sections in the City of Frankenmuth were surveyed in April of 1979. The locations of cross sections are shown in Table 1. There are two (2) bridges within the study limits. The bridge opening of Main Street Bridge could not be modeled by a trapezoid and was coded by Normal Bridge Routine. The other bridge within the limits is the pre-constructed covered bridge located 415 feet upstream from

Main Street Bridge. The bridge opening also could not be modeled by trapezoid and was coded by Normal Bridge Routine.

2.2. Roughness Coefficients

The roughness coefficients were determined from field notes and pictures taken by surveyors and also from the field observations of the project engineer in May, 1979. Through comparison with the materials and photographs shown in page 101 to 123 in Chow's Open Channel Hydraulics (Ref. 2), the roughness coefficients for channel and flood plain were obtained. The roughness coefficients are in the range of 0.09 to 0.04 for flood plain and in the range of 0.04 to 0.038 for channel.

could be low u/s d/s = 0.06

appear high upstream d/s about 0.03 fin file No 770359

2.3 Starting Point and Starting Elevation

The starting point in this study is the point at downstream limit. The USGS gaging station is located about two hundred feet upstream from the study limit. A rating curve was established at the gaging station as shown in Figure 1. For discharges between 5000 cfs and 17600 cfs, the starting elevations could be easily obtained from the rating curve. For discharges larger than 17600 cfs, the starting elevations were decided from slope area method by employing the established energy slopes as shown in Figure 1.

how was it established

1948

places to much importance on channel "n"

3. HIGH WATER MARKS

An investigation has been made in order to verify the high water marks for Cass River in Frankenmuth which were furnished by local residents and Corps of Engineers.

High water marks for 1968 flood existed at locations of Section D and Section K. Since the backwater for 1968 flood in Frankenmuth

was caused by jammed ice (Ref. 3), the data was disregarded. A 1948 high water mark was recorded at Fischer Hotel, now Tiffany Biergarten. Because this high water mark was lower than the water elevation at the downstream gaging station for the same flood, this data was not used. Corps of Engineers at Detroit District established a rating curve at upstream side of Main Street Bridge based on 1952 conditions. Comparing with the data from USGS gaging station, this rating curve was also disregarded. A summary of the high water marks was shown in Table 2.

This does not appear reasonable and proven Rating curve used to start study is questionable

17600 cfs, March 20, 1948

Record shows affected by ice Nov 30 thr Feb 27
No record March 1 to 19

"0" 584.00
stage 20.83
elev at gage 604.83
slope adj. = 2.5 based upon 1942 flood F of E
5 4000 ft 606.33

4000 ft d/s of new gage site

Elev of 1942 flood at gage is approx 607.5

Suggest stage at gage

TABLE 2

HIGH WATER MARKS*

LOCATION	Q(cfs)	Elev. at Gage (ft.)	High Water (ft.)	Comments
4360' U/S from gage (Tiffany Biergarten)	17600 (3/20/48)	608.29 606.3 max	607.80*	607.80 < 608.29 rejected 606.3 > 607.8

* 1942 ≈ 608 look good to me.

*High water data of 1968, which was caused by jammed ice, was not included.

*A rating curve at U/S face of Main Street Bridge, developed by COE, which didn't match the rating curve at gaging station, was disregarded.

1976 Flood 13,700 why not try to calibrate it starting off of the old rating curve d/s at at Dehmel Rd.

References

1. HEC-2 Water Surface Profiles, Users Manual, Hydrologic Engineering Center, U.S. Army, Corps of Engineers, August 1979.

2. Open Channel Hydraulics, V. T. Chow, McGraw-Hill, 1959.

3. Water Resources Data for Michigan, Water Year 1977, USGS Water-Data Report MI-77-1.

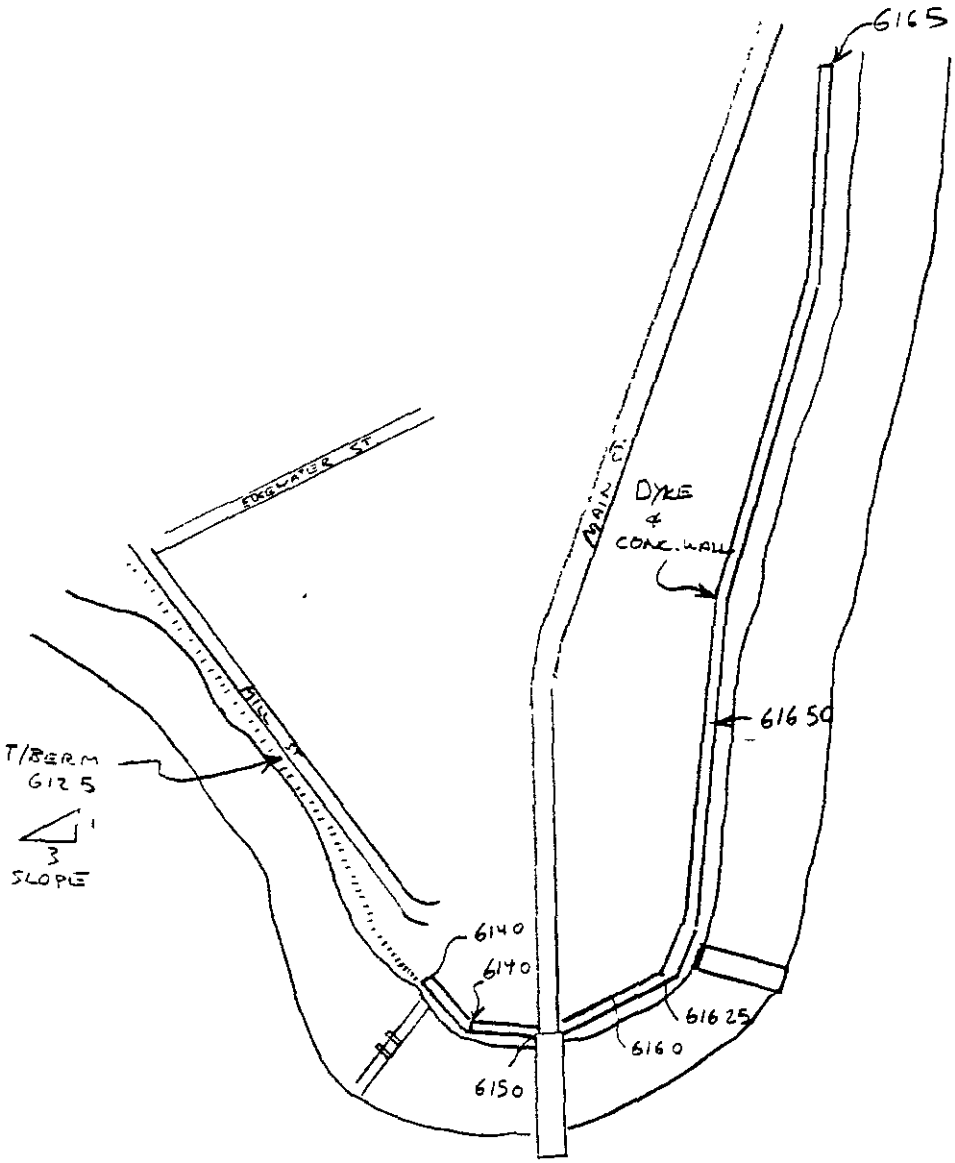
TABLE 1

LOCATIONS OF CROSS SECTIONS

SECTION	SECNO	LOCATIONS AND DESCRIPTION
A	89500	D/S of U.S.G.S. gage station 1515
B	90030	530' U/S from Section A Manufactured
C	90600	1210' U/S from Section A
D	91120	1510' U/S from Section A Manufactured
E	91550 91551 91552 91553	Low dam, regarded as step dam
F	91850 91851 91852 91853	Main St. Bridge, Width = 68', Length = 240' Bridge opening cannot be modeled by a trapezoid Normal Bridge Routine
G	91950	215' U/S from U/S face of Main St. Bridge Manufactured
H	92010 92011 92012 92013	Proposed covered bridge, Width = 39', Length = 206.5' Bridge opening cannot be modeled by a trapezoid Normal Bridge Routine
I	92030	210' U/S from U/S face of covered bridge
J	92480	660' U/S from U/S face of covered bridge Manufactured
K	93300	1035' U/S from U/S face of covered bridge
L	94035	1770' U/S from U/S face of covered bridge Manufactured
M	94900	2760' U/S from U/S face of covered bridge
N	96100	3890' U/S from U/S face of covered bridge
O	96500	4290' U/S from U/S face of covered bridge
P	97300	5240' U/S from U/S face of covered bridge

CITY OF FRANKENMUTH

Flood Dike Location and Elevation



1"=400'

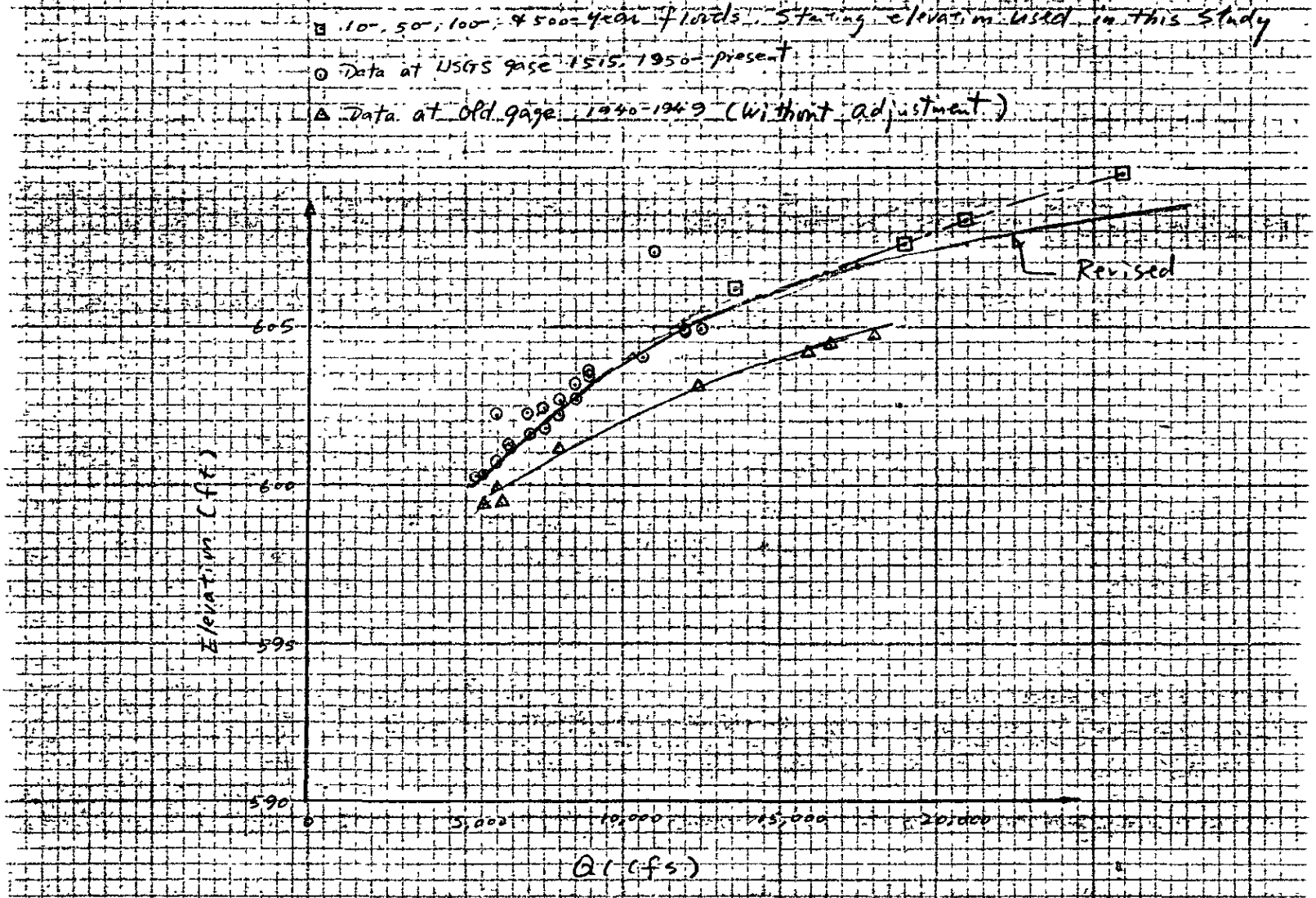


Figure 1. Starting elevations for Cosa River at Frankenmuth

old site Cass River - Frankenmuth

1942 17700 cfs
"0" 584.00
20.88
604.88

022080

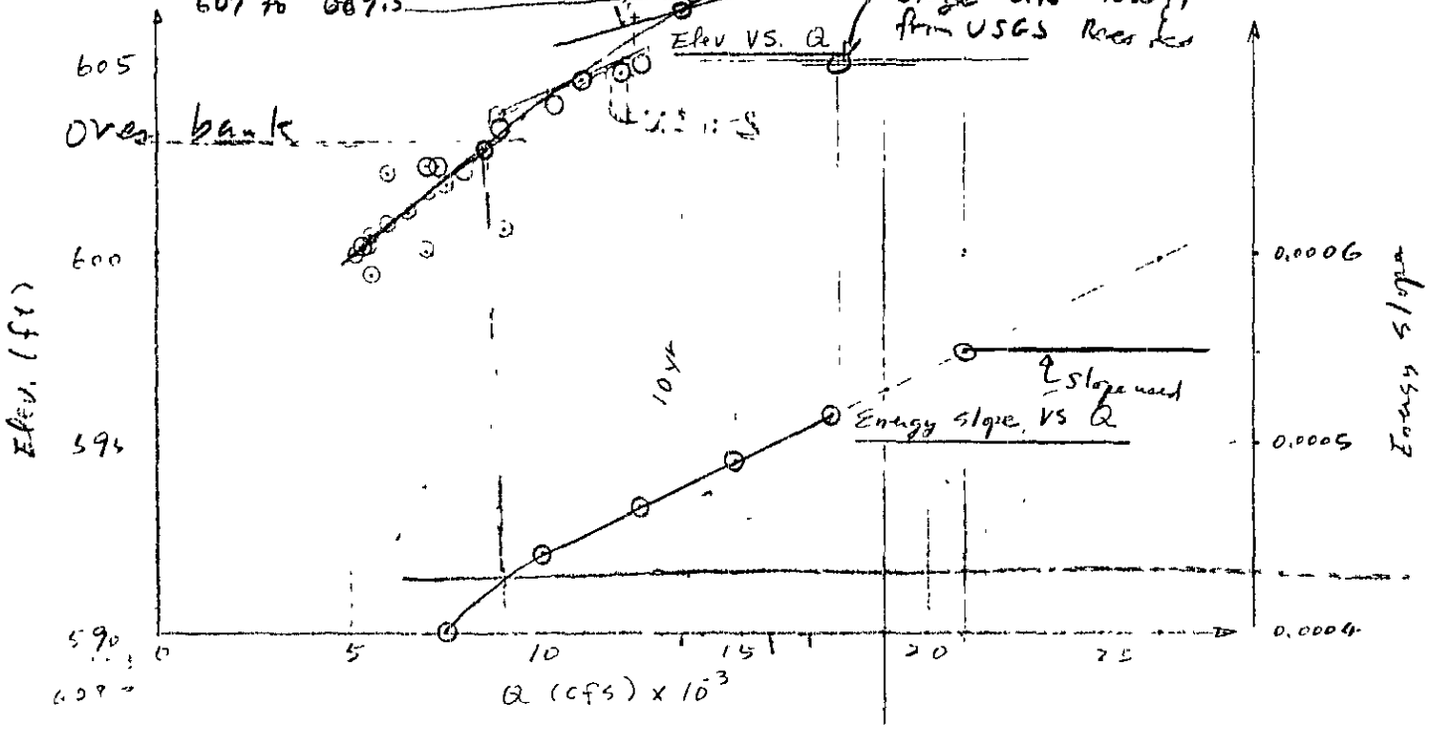
100yr stage used in the report

plotting error? based on what? Their 100 yr as almost the high 18ft

Approx Rating curve used as starting elevations ~~used~~ based at Secno 89500

C of E 1942 stage 607 to 607.5

1 ft to 1.0 high stage d/s 4000 ft from USGS Recorded



why should the slope increase with Q? we would expect it to be normal depth 1 ft/mile = 0.000189

Fig. 1. Rating Curve at U.S.G.S. gaging station 1515

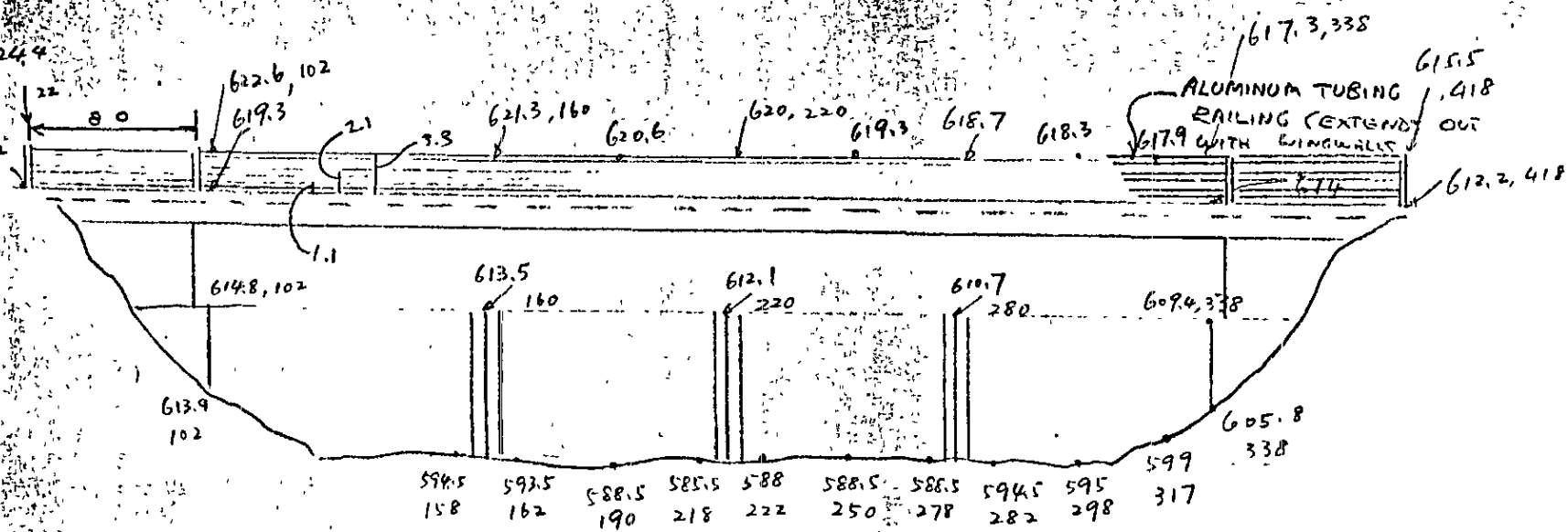
D new gage 583.96

present "0" 583.96

S_f = ND D/S of Frankenmuth Corp of Engr Cass River comments indicate that d/s of Frankenmuth the avg profile River slope is 1 ft/mile = 0.000189

BRIDGE DATA

Community: FRANKENMUTH	Structure: MAIN ST. BRIDGE	Type: CONC. & I-BEAM	Station: 919+00



PROFILE SKETCH
(Looking Downstream)

Length: 240.0	Width: 68.0	Skew: —	Water Elevation: 599.0
No. of Piers: 3	Width of Piers: ~~5.0~~ 2.5	Shape of Piers:	

Notes:

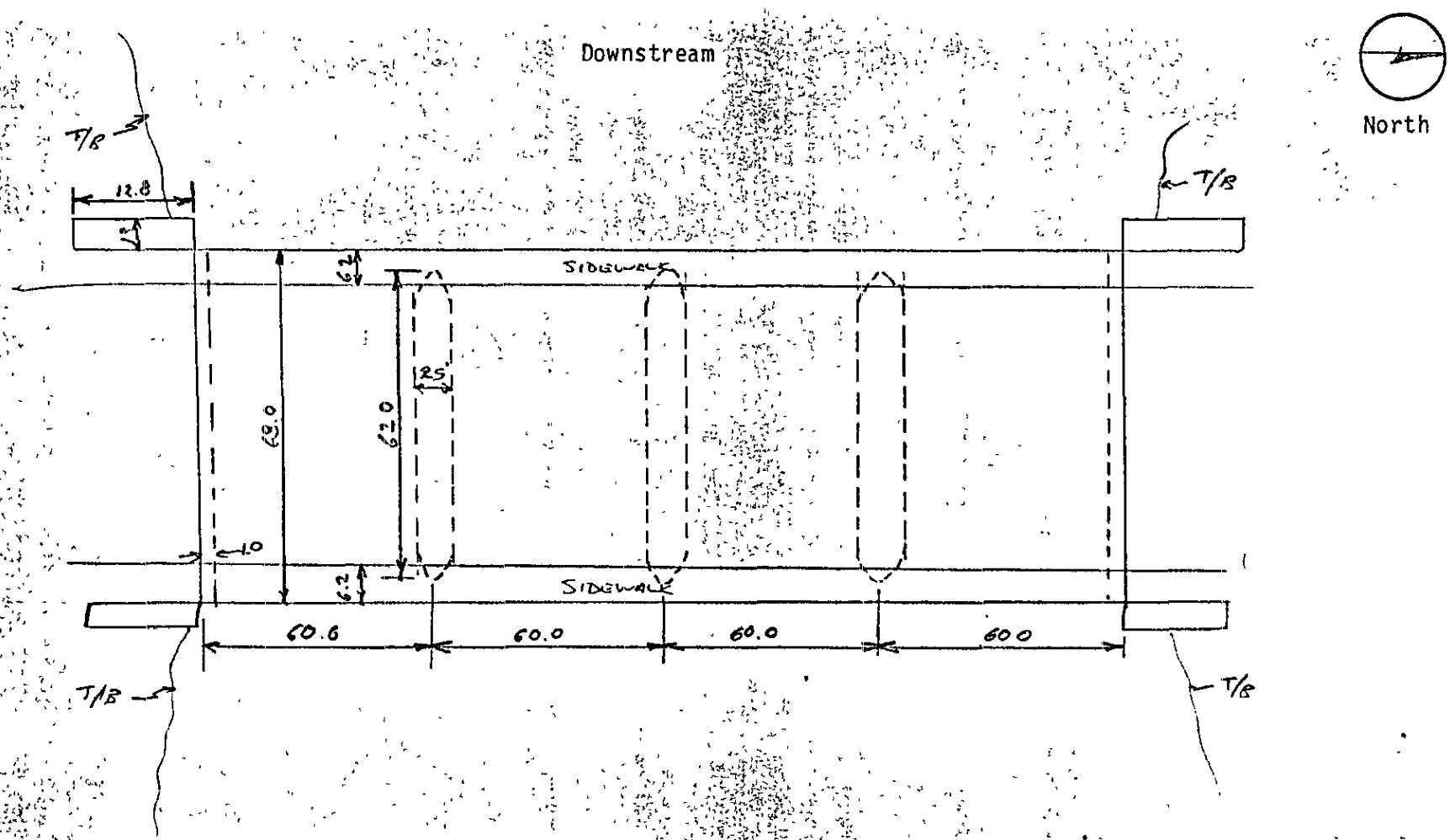
Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: J.S.C.

Date: 4/25/79

Community: FRANKENMUTH	Structure: MAIN ST. BRIDGE	Type: CONC. & I-BEAM	Station: 919+00



Upstream

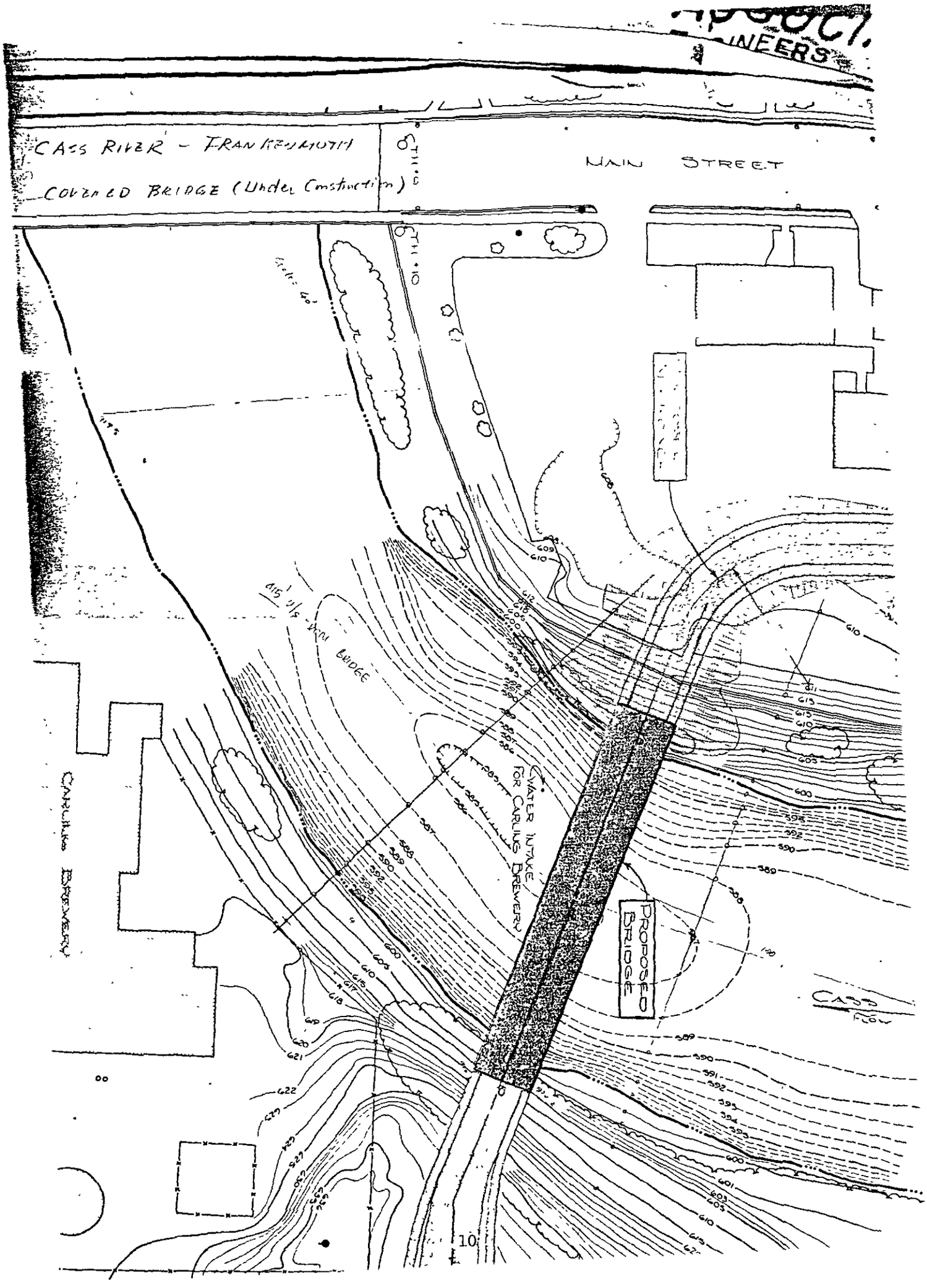
PLAN VIEW SKETCH

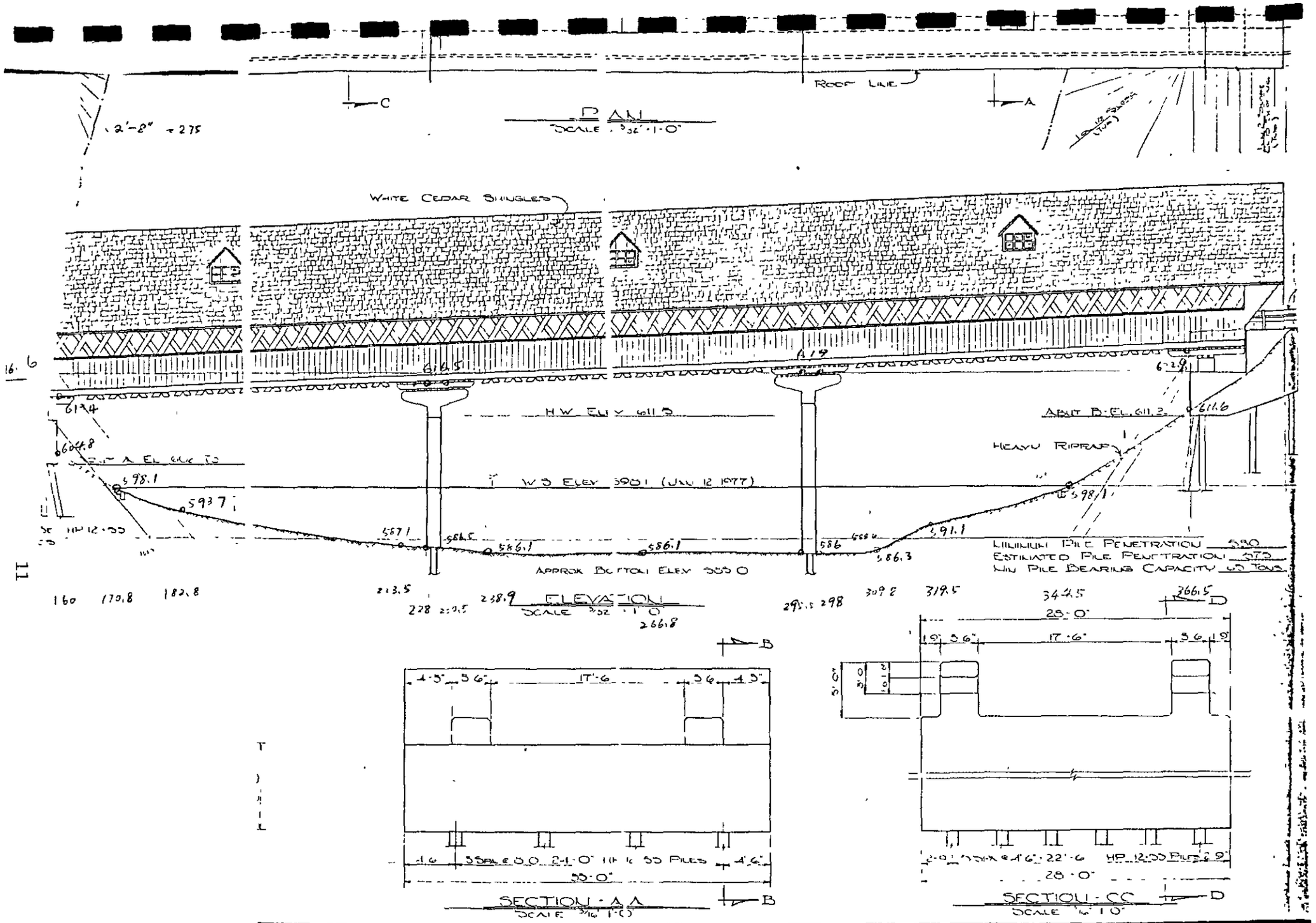
Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: J.S.C.

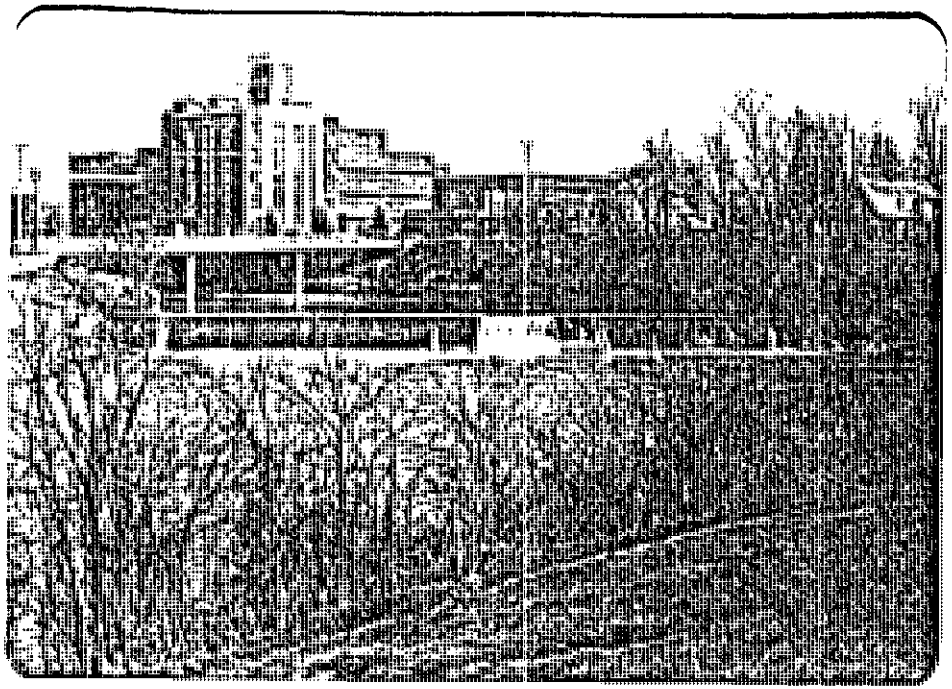
Date: 4/25/79

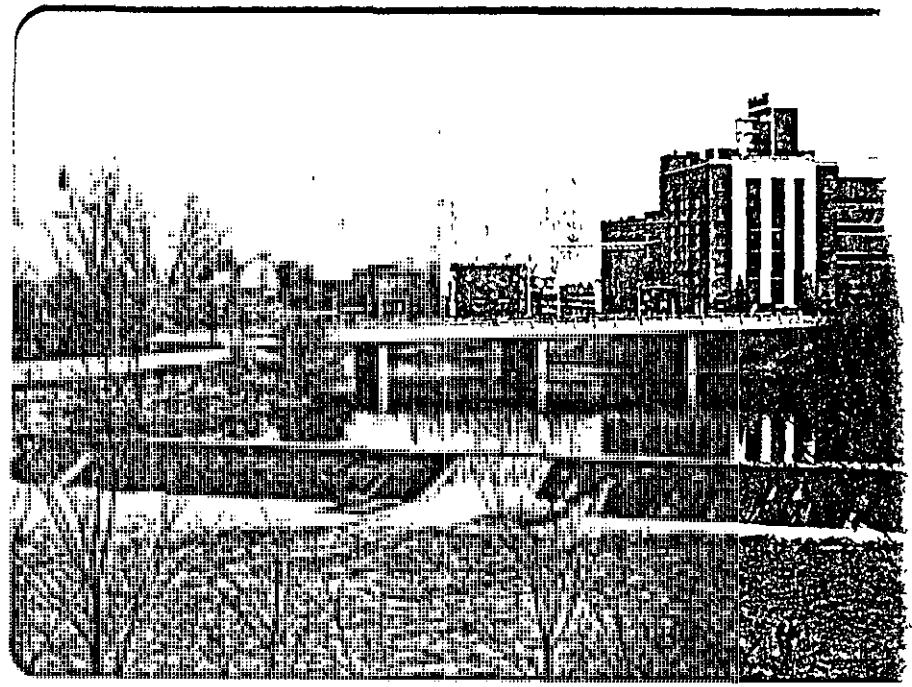
Sheet 2 of 2

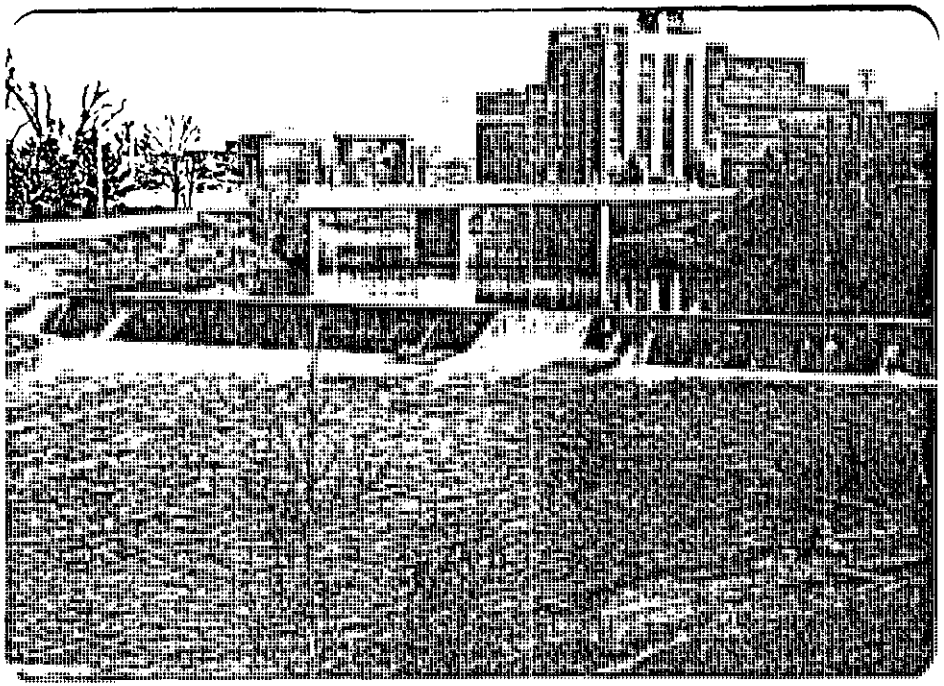

CASS RIVER - FRANKENMUTH
COVERED BRIDGE (Under Construction)
MAIN STREET
415' U/S VCM BRIDGE
WATER INTAKE FOR CARLING BREWERY
PROPOSED BRIDGE
CARLING BREWERY
CASS FLOW



ROOF LINE
PLAN
SCALE 3/32" = 1'-0"
WHITE CEDAR SHINGLES
H.W. ELEV 611.5
W.S. ELEV 590.1 (JAN 12 1977)
ABUT B-EL. 611.2
HEAVY RIPRAP
APPROX BOTTOM ELEV 585.0
MINIMUM PILE PENETRATION 580
ESTIMATED PILE PENETRATION 575
MIN PILE BEARING CAPACITY 65 TONS
ELEVATION
SCALE 3/32" = 1'-0"
SECTION - AA
SCALE 3/16" = 1'-0"
SECTION - CC
SCALE 3/16" = 1'-0"







Main St. Bridge
&
D/S Low Dam

MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY

INTEROFFICE COMMUNICATION

November 21, 1995

TO: Mark Szakiel
Dewberry & Davis
Management Engineering & Technical Services Division

FROM: Bruce Menerey
Land & Water Management Division
517-335-3181

SUBJECT: City of Frankenmuth, Saginaw County FIS, Michigan

In follow-up to our telephone conversation I have revised the encroachments in the floodway run for the City of Frankenmuth, Saginaw County, Michigan.

The floodway changes apply to FIS cross sections, L, M, N, and O. Enclosed is the revised input for these cross sections, along with the output, the summary, the floodway data table, and the delineation.

If you have any questions, please feel free to contact me.

City Frankenmuth
Saginaw County
Michigan
Input Data for XSEC's
L, M, N, O, & P

```
  GR   590     202     588     224     587     250     587     275     588     310
  GR   590     330     593     345     595     355     598     370     600     386
  GR   610     418     614     436
  NC   .04     .04    .038
  ET                                   9.1                                     38     568
  X192480.      20     332     522     450     450     450
  GR   616      20     610      40     602      65     600     100   599.2     102
  GR 599.2     250     600     255     602     275     602     320     600     328
  GR   598     332   593.8     396     589     403   590.3     442     589     482
  GR   598     522     600     535     610     568     613     570     613     590
  X193300.      17     500     700     360     360     360
  X3                           240             710
  GR620.       185     610     230     602     252     600     360     602     468
  GR   602     486   600.4     500   598.8     511   593.8     548     589     582
  GR 590.3     621     589     660   598.8     697   601.2     700   601.8     711
  GR612.4      748     613     759
  NC  .055    .045    .038      .3      .5                 natural        Floodway
o ET                  7.1                9.1                460    1405     500    1405
  X194035.      20    1130    1352     650     735     735
  GR612.       235     610     265     608     280     607     500     606     590
  GR   604     645   602.5     750     602     895     602     928  602.55    1030
  GR   602    1128     600    1130   593.8    1167     589    1201  590.35    1240
  GR   589    1279     598    1320     600    1352     610    1390     614    1405
  NH    4.      .1    1230    .055    2050     .04    2224     .05    2281
o ET                  7.1                9.1                1050    2248    1300    2235
  X1 94900      21    2050    2224     490    1020     900
  GR   612     755   610.5     800   610.5    1170   610.5    1230   610.5    1300
  GR 610.5    1380   610.5    1520   610.5    1615   610.5    1770   610.5    1880
  GR 610.5    1915     608    2025     600    2050   593.1    2080     589    2115
  GR587.3     2150   589.6    2185   598.9    2217   603.8    2224     618    2248
  GR 638.3    2281
  NH    4      .1    1170     .06    1331     .04    1568    .045    1725
o ET                  7.1                9.1                930    1725     960    1720
  X196100.      20    1331    1568     715    1375    1220
  GR   610     730   609.2     760     609    1000     608    1085     606    1170
  GR   604    1255     602    1285     600    1331   598.9    1333  591.5    1380
  GR 591.5    1425   592.4    1470   597.2    1510   598.9    1556  602.8    1568
  GR   602    1600     604    1650     606    1670     610    1700     618    1725
  NC                            .1      .3
o ET                  7.1                9.1                150     950     190     940
  X196500.      23     330     525     385     390     400
  X41.       611.5     260
  GR626.               620      50     610     120     610     160     610     300
  GR600.       330   589.9     337   593.1     373     589     410   587.3     447
  GR589.6      484   598.9     518     600     525   603.8     540   600.8     635
  GR   602     700     604     730     606     760     606     790     608     850
  GR   610     875     612     900     620     950
  NC   .05    .055     .04
o ET                  9.1                9.1                                      0     980
  X1 97300      19     100     286     995     810     950
  GR628.        20     626      50     620      88   611.6     100   598.9     103
  GR 594.2     145   588.8     180   590.2     215     594     250   598.9     286
  GR 604.6     296   603.2     310     600     425     604     625     606     750
  GR608.       810     610     850     612    1020     614    1070
  EJ
  T1
  T2
  T3
  J1            5                                            22700  611.77
  J2    2            -1
```

Floodway

Floodway

Floodway

Floodway

L

M

N

O

P

← Encroachments on ET card

← Encroachments on ET Card

← Encroachments on ET Card

← Encroachments on ET Card

CITY OF FRANKENMUTH FIS
"FLOODWAY RUN"

```
*SECNO 93300.000
3280 CROSS SECTION  93300.00 EXTENDED       .45 FEET


3470 ENCROACHMENT STATIONS=      240.0     710.0  TYPE=      1  TARGET=      470.000
 93300.000     24.45    613.45       .00    613.36    613.62       .16       .05       .01    600.40
   22700.0    7623.9   14905.9     170.1    3179.1    4157.5     119.8     511.5      31.4    601.20
       .25      2.40      3.59      1.42      .040      .038      .040      .000    589.00    240.00
   .000150      360.      360.      360.         2         0         0       .00    470.00    710.00


CCHV=     .300 CEHV=     .500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS=      500.0    1405.0  TYPE=      1  TARGET=      905.000
 94035.000     24.63    613.63       .00    613.54    613.72       .09       .09       .02    600.00
   22700.0    8695.1   13535.3     469.6    6536.4    4536.8     352.6     661.3      42.1    600.00
       .34      1.33      2.98      1.33      .055      .038      .045      .000    589.00    500.00
   .000105      650.      735.      735.         2         0         0       .00    903.61   1403.61


1490 NH CARD USED
*SECNO 94900.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .57


3470 ENCROACHMENT STATIONS=     1300.0    2235.0  TYPE=      1  TARGET=      935.000
 94900.000     26.34    613.64       .00    613.55    613.99       .35       .14       .13    600.00
   22700.0    3150.4   19443.9     105.7    2651.9    3782.9      72.4     803.9      54.7    603.80
       .39      1.19      5.14      1.46      .055      .040      .050      .000    587.30   1300.00
   .000325      490.      900.     1020.         2         0         0       .00    935.00   2235.00


1490 NH CARD USED
*SECNO 96100.000
1
   21NOV95      10:22:50                                                                          PAGE   19


    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


3470 ENCROACHMENT STATIONS=      960.0    1720.0  TYPE=      1  TARGET=      760.000
 96100.000     22.67    614.17       .00    614.06    614.32       .15       .27       .06    600.00
   22700.0    3632.7   16357.2    2710.1    3017.4    4616.9    1330.6     990.2      72.2    602.80
       .49      1.20      3.54      2.04      .069      .040      .045      .000    591.50    960.00
   .000175      715.     1220.     1375.         2         0         0       .00    753.03   1713.03
```

L

M

N

CCHV= .100 CEHV= .300

*SECNO 96500.000

3470 ENCROACHMENT STATIONS= 190.0 940.0 TYPE= 1 TARGET= 750.000

96500.000	26.94	614.24	.00	614.13	614.38	.14	.06	.00	600.00
22700.0	597.9	15620.9	6481.2	645.0	4513.9	3676.6	1070.7	78.8	600.00
.53	.93	3.46	1.76	.055	.038	.045	.000	587.30	190.00
.000124	385.	400.	390.	2	0	0	.00	723.98	913.98

*SECNO 97300.000

97300.000	25.59	614.39	.00	614.28	614.50	.11	.12	.00	611.60
22700.0	2.2	12772.2	9925.7	5.5	3873.7	6050.9	1260.1	93.4	598.90
.63	.40	3.30	1.64	.050	.040	.055	.000	588.80	96.02
.000149	995.	950.	810.	1	0	0	.00	753.98	850.01

Q WSEL EG

93300.000	360.00	.00	.00	589.00	22700.00	613.36	.00	613.52	1.53	3.61	7412.09	18366.22
93300.000	360.00	.00	.00	589.00	22700.00	613.45	.00	613.62	1.50	3.59	7456.44	18538.68
94035.000	735.00	.00	.00	589.00	22700.00	613.54	.00	613.63	1.05	2.97	11603.58	22139.72
94035.000	735.00	.00	.00	589.00	22700.00	613.63	.00	613.72	1.05	2.98	11425.92	22114.19
* 94900.000	900.00	.00	.00	587.30	22700.00	613.55	.00	613.89	3.17	5.06	7201.30	12754.99
* 94900.000	900.00	.00	.00	587.30	22700.00	613.64	.00	613.99	3.25	5.14	6507.18	12589.22
96100.000	1220.00	.00	.00	591.50	22700.00	614.06	.00	614.21	1.78	3.56	9033.03	17006.95
96100.000	1220.00	.00	.00	591.50	22700.00	614.17	.00	614.32	1.75	3.54	8964.83	17147.54
96500.000	400.00	.00	.00	587.30	22700.00	614.13	.00	614.27	1.26	3.47	8915.96	20223.71
96500.000	400.00	.00	.00	587.30	22700.00	614.24	.00	614.38	1.24	3.46	8835.44	20345.67
97300.000	950.00	.00	.00	588.80	22700.00	614.28	.00	614.40	1.52	3.32	9849.85	18397.85
97300.000	950.00	.00	.00	588.80	22700.00	614.39	.00	614.50	1.49	3.30	9930.05	18616.34

STATION	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
89500.000	624.	7957.	2.9	611.8	611.7	.1
90030.000	558.	7076.	3.2	611.9	611.8	.1
90600.000	245.	4690.	4.8	612.1	612.0	.1
91120.000	259.	5179.	4.4	612.2	612.1	.1
91550.000	273.	5899.	3.8	612.4	612.3	.1
91551.000	273.	3684.	6.2	612.2	612.1	.1
91552.000	273.	3685.	6.2	612.2	612.1	.1
91553.000	273.	5953.	3.8	612.6	612.5	.1
91850.000	312.	4399.	5.2	612.5	612.4	.1
91851.000	312.	3752.	6.1	612.5	612.4	.1
91852.000	312.	3762.	6.0	612.6	612.5	.1
91853.000	313.	4457.	5.1	612.7	612.6	.1
91950.000	210.	3978.	5.7	612.7	612.6	.1
92010.000	207.	4424.	5.1	613.0	612.9	.1
92011.000	207.	4297.	5.3	612.9	612.8	.1
92012.000	207.	4299.	5.3	613.0	612.9	.1
92013.000	207.	4433.	5.1	613.0	612.9	.1
92030.000	306.	5723.	4.0	613.2	613.1	.1
92480.000	530.	8165.	2.8	613.4	613.3	.1
93300.000	470.	7456.	3.0	613.5	613.4	.1
94035.000	904.	11426.	2.0	613.6	613.5	.1
94900.000	935.	6507.	3.5	613.7	613.6	.1
96100.000	753.	8965.	2.5	614.2	614.1	.1
96500.000	724.	8835.	2.6	614.2	614.1	.1
97300.000	754.	9930.	2.3	614.4	614.3	.1

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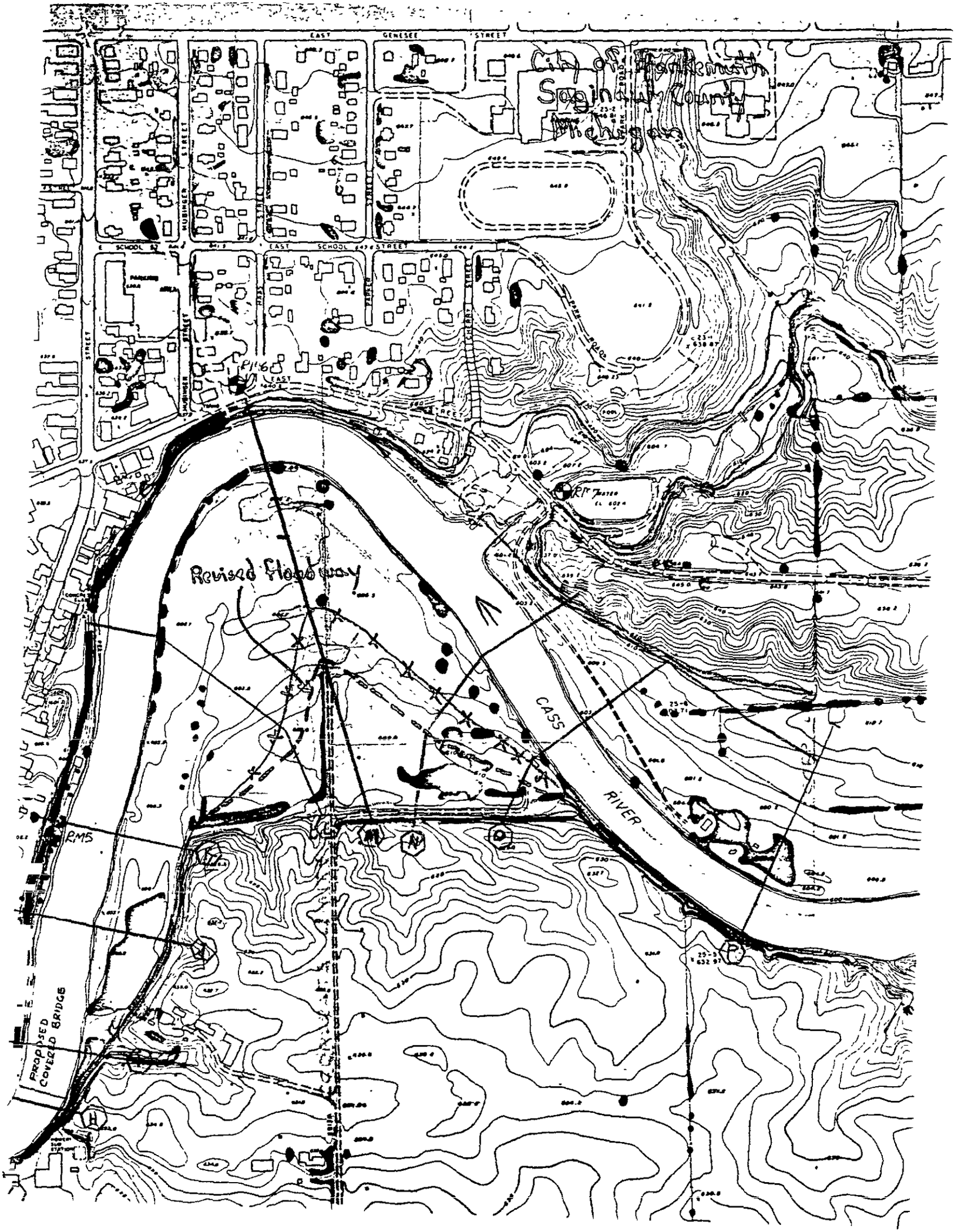
EAST GENESEE STREET
City of Frankenmuth
Saginaw County
Michigan
EAST SCHOOL STREET
Revised Floodway
CASS
RIVER
RM5
PROPOSED COVERED BRIDGE

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1*******************************************                    ***************************************
 *  HEC-2 WATER SURFACE PROFILES           *                    *  U.S. ARMY CORPS OF ENGINEERS       *
 *                                         *                    *  HYDROLOGIC ENGINEERING CENTER      *
 *  Version   4.6.2;  May 1991             *                    *  609 SECOND STREET, SUITE D         *
 *                                         *                    *  DAVIS, CALIFORNIA 95616-4687       *
 *  RUN DATE    21NOV95    TIME   10:22:50 *                    *          (916) 756-1104             *
 *******************************************                    ***************************************


                                  X    X  XXXXXXX   XXXXX            XXXXX
                                  X    X  X        X    X          X    X
                                  X    X  X        X                    X
                                  XXXXXXX  XXXX     X        XXXXX   XXXXX
                                  X    X  X        X               X
                                  X    X  X        X    X          X
                                  X    X  XXXXXXX   XXXXX          XXXXXXX
1
   21NOV95      10:22:50                                                                    PAGE    1


                                                                  THIS RUN EXECUTED 21NOV95    10:22:50
 ************************************
  HEC-2 WATER SURFACE PROFILES

  Version   4.6.2;  May 1991
 ************************************


 T1       CITY OF FRANKENMUTH FIS
 T2      NATURAL RUN
 T3      CASS RIVER            CASSFIS2.DAT

 J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL      FQ

                3                      .000316                      22700    611.48

 J2  NPROF     IPLOT    PRFVS    XSECV    XSECH     FN       ALLDC     IBW      CHNIM     ITRACE

                        -1


 J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

 NC      .09       .063       .04        .1         .3
 ET                                                9.1                                      425       1008
            VALLEY SEC A  D/S OF USGS GAGE 1515   1986 HWM 611.48
 X1    89500        18        874       1008       1100       1100       1100
 X3                                     410
 GR   608.5        250      606.8        375        602        450        600        640        600        670
 GR   602.         690        602        730        602        765      603.9        851      601.6        874
 GR   590.9        885        586        910      585.2        940      585.5        970      590.9        998
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GR   600.2      1008     615.3      1042     630.8      1080

ET                                   9.1                                  580      1050
X1   90030.       17      870      1032      440       575       530
X3                                540
GR   607.8       330     607.7       560      603       690       600       760     600.4       800
GR   602.        820      600       870      590       900       588       910       586       925
GR   585.2       955     585.2       985      590      1020       600      1032       602      1050
GR     610      1086      616      1125

NC    .065      .045      .04        .3       .5
ET                                   9.1                                  200       445
X1   90600.       14      240       425      600       800       680
GR     610       200      608       210      606       225       600       240       590       258
GR     588       265     587.2       295     585.8       325     585.8       350      588.       375
GR   590.        408      600       425      610       445       610       465
1
   21NOV95     10:22:50                                                                    PAGE    2


NC     .05      .045      .04        .1       .3
ET                                   9.1                                  553       812
X1   91120        11      580       792      300       300       300
GR     612       540      610       550      600       580     591.2       616     587.2       652
GR   585.8      698.     585.8       733     591.2       775       600       792       610      814.
GR     612       826

NC    .045      .045      .04
ET                                   9.1                                   41       314
X1   91550.        8       41       291      475       375       415
GR   614.2              606.8        41     589.7        41     589.7       291     598.2       291
GR   607.5       314     607.7       316     613.6       316

ET                                   9.1                                   41       314
X1   91551.        7       41       291       50        50        50
GR   614.2              606.8        41     598.4        41     598.2       291     607.5       314
GR   607.7       316     613.6      316.

ET                                   9.1                                   41       314
X1   91552.                              8         8         8

ET                                   9.1                                   41       314
X1   91553         8       41       291       50        50        50
GR   614.2              606.8        41     589.7        41     589.7       291     598.2       291
GR   607.5       314     607.7       316     613.6       316

X1   91850.        12      102       338      330       170       250
X3   10.                                                          621.2     612.2
GR   621.               622.6        22     613.9       102       594       160     588.5       190
GR   588.        220     588.5       250      592.       280       595       298       599       317
GR   605.8       338     612.2       418

X1   91851        23      102       338       10        10        10
BT      14        22     621.2     621.2       22     624.4     621.2       102     622.6     619.3
BT   102.      622.6     614.8     158.7     621.3     613.5     161.2     621.3     613.5     218.7
BT     620     612.1     221.1       620     612.1     278.7     618.7     610.7     281.2     618.7
BT   610.7       338     617.3     609.4       338     617.3       614       418     615.5     612.2
BT   418.      612.2     612.2
GR   621.2        22     619.3       102     613.9       102       599       146     594.5     158.7
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GR   613.5     158.7     613.5     161.2     593.5     161.2     588.5      190     588.5     218.7
GR   612.1     218.7     612.1     221.2      588     221.2     588.5      250     588.5      278
GR   610.7     278.7     610.7     281.2     594.5     281.2      595      298      599      317
GR   605.8      338       614      338     612.2      418

X1   91852.                                  62        62        62
X2                                                             1

X1   91853.      12       102      338       10        10        10
X3      10                                                           621.2     612.2
GR     621              621       22     613.9       102       594      160     588.5      190
GR     588      220     588.5      250      592       280       595      298      599      317
GR    605.8      338     612.2      418
1
   21NOV95     10:22:50                                                                  PAGE   3


NC   .05        .05       .04
ET                                         9.1                                   158      325
X1    91950      11       158      325      245       160       205
X3                                 150
GR     616      142       610      155      599       158     588.8      192     585.8      214
GR   588.2      246     588.6      288      599       325       600      330      610      340
GR     610      360

X1   92010.      12       160     366.5      235       135       185
X3   10                                                           616.6     626.1
GR   616.6      140     604.8      160     598.1     170.8     593.7     182.8     587.1     223.5
GR   586.1     238.9     586.1     266.8     586.3     309.8     591.1     319.5     598.1     344.5
GR   611.6     366.5     626.1     386.5

X1   92011.      24       160     366.5       10        10        10
BT   8.         143     616.6     616.6      143     643.6     616.6      160     644.2     616.6
BT     160     644.2     613.4     366.5     651.8     622.8     366.5     651.8     626.1     386.5
BT   652.2     626.1     386.5     626.1     626.1
GR   616.6      140     616.6      143     616.6       160     604.8      160     598.1     170.8
GR   593.7     182.8     587.1     223.5     586.5       228     616.5      228     616.5     230.5
GR   586.5     230.5     586.1     238.9     586.1     266.8       586     295.5      619.     295.5
GR   619.       298       586      298     586.3     309.8     591.1     319.5     598.1     344.5
GR   611.6     366.5     626.1     366.5     626.1     383.5     626.1     386.5

X1   92012.                                  39        39        39
X2                                                             1

X1   92013.      12       160     366.5       10        10        10
X3   10.                                                           616.6     626.1
GR   616.6      140     604.8      160     598.1     170.8     593.7     182.8     587.1     223.5
GR   586.1     238.9     586.1     266.8     586.3     309.8     591.1     319.5     598.1     344.5
GR   611.6     366.5     626.1     386.5

NC    .045     .042       .04
ET                                         9.1                                   112      418
X1   92030.      17       173      386      210       205       200
GR     620       35       610       90      604       112       602      135      600      173
GR     590      202       588      224      587       250       587      275      588      310
GR     590      330       593      345      595       355       598      370      600      386
GR     610      418       614      436

NC     .04       .04      .038
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ET					9.1				38	568
X1	92480.	20	332	522	450	450	450			
GR	616	20	610	40	602	65	600	100	599.2	102
GR	599.2	250	600	255	602	275	602	320	600	328
GR	598	332	593.8	396	589	403	590.3	442	589	482
GR	598	522	600	535	610	568	613	570	613	590

1

X1	93300.	17	500	700	360	360	360			
X3				240		710				
GR	620.	185	610	230	602	252	600	360	602	468
GR	602	486	600.4	500	598.8	511	593.8	548	589	582
GR	590.3	621	589	660	598.8	697	601.2	700	601.8	711
GR	612.4	748	613	759						
NC	.055	.045	.038	.3	.5					
ET			7.1		9.1		460	1405	500	1405
X1	94035.	20	1130	1352	650	735	735			
GR	612.	235	610	265	608	280	607	500	606	590
GR	604	645	602.5	750	602	895	602	928	602.55	1030
GR	602	1128	600	1130	593.8	1167	589	1201	590.35	1240
GR	589	1279	598	1320	600	1352	610	1390	614	1405
NH	4.	.1	1230	.055	2050	.04	2224	.05	2281	
ET			7.1		9.1		1050	2248	1300	2235
X1	94900	21	2050	2224	490	1020	900			
GR	612	755	610.5	800	610.5	1170	610.5	1230	610.5	1300
GR	610.5	1380	610.5	1520	610.5	1615	610.5	1770	610.5	1880
GR	610.5	1915	608	2025	600	2050	593.1	2080	589	2115
GR	587.3	2150	589.6	2185	598.9	2217	603.8	2224	618	2248
GR	638.3	2281								
NH	4	.1	1170	.06	1331	.04	1568	.045	1725	
ET			7.1		9.1		930	1725	960	1720
X1	96100.	20	1331	1568	715	1375	1220			
GR	610	730	609.2	760	609	1000	608	1085	606	1170
GR	604	1255	602	1285	600	1331	598.9	1333	591.5	1380
GR	591.5	1425	592.4	1470	597.2	1510	598.9	1556	602.8	1568
GR	602	1600	604	1650	606	1670	610	1700	618	1725
NC				.1	.3					
ET			7.1		9.1		150	950	190	940
X1	96500.	23	330	525	385	390	400			
X4	1.	611.5	260							
GR	626.		620	50	610	120	610	160	610	300
GR	600.	330	589.9	337	593.1	373	589	410	587.3	447
GR	589.6	484	598.9	518	600	525	603.8	540	600.8	635
GR	602	700	604	730	606	760	606	790	608	850
GR	610	875	612	900	620	950				
NC	.05	.055	.04							
ET			9.1		9.1				0	980
X1	97300	19	100	286	995	810	950			
GR	628.	20	626	50	620	88	611.6	100	598.9	103
GR	594.2	145	588.8	180	590.2	215	594	250	598.9	286
GR	604.6	296	603.2	310	600	425	604	625	606	750
GR	608.	810	610	850	612	1020	614	1070		

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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 89500.000

3470 ENCROACHMENT STATIONS=     410.0    1080.0  TYPE=     1  TARGET=    -410.000
            VALLEY SEC A  D/S OF USGS GAGE 1515   1986 HWM 611.48
 89500.000    26.47   611.67      .00   611.48   611.97      .31      .00      .00   601.60
   22700.0   6239.1  16273.4    187.5   4605.7   3139.9    148.1       .0       .0   600.20
       .00     1.35     5.18     1.27     .090     .040     .063     .000   585.20   410.00
   .000317    1100.    1100.    1100.        0        0        3      .00   623.82  1033.82


*SECNO 90030.000

3470 ENCROACHMENT STATIONS=     540.0    1125.0  TYPE=     1  TARGET=    -540.000
 90030.000    26.61   611.81      .00      .00   612.13      .32      .15      .00   600.00
   22700.0   3504.4  18548.6    647.0   2864.9   3740.3    415.2     83.3      6.4   600.00
       .03     1.22     4.96     1.56     .090     .040     .063     .000   585.20   540.00
   .000284     440.     530.     575.        1        0        0      .00   557.85  1097.85


CCHV=     .300 CEHV=     .500
*SECNO 90600.000
3280 CROSS SECTION  90600.00 EXTENDED     1.97 FEET

 90600.000    26.17   611.97      .00      .00   612.37      .40      .20      .04   600.00
   22700.0    327.0  22068.5    304.5    238.8   4289.0    178.8    172.8     12.6   600.00
       .07     1.37     5.15     1.70     .065     .040     .045     .000   585.80   200.00
   .000302     600.     680.     800.        2        0        0      .00   265.00   465.00


CCHV=     .100 CEHV=     .300
*SECNO 91120.000
3280 CROSS SECTION  91120.00 EXTENDED      .14 FEET

 91120.000    26.34   612.14      .00      .00   612.46      .32      .08      .01   600.00
   22700.0    362.4  22047.3    290.4    225.6   4796.8    170.8    206.9     14.5   600.00
       .09     1.61     4.60     1.70     .050     .040     .045     .000   585.80   540.00
   .000245     300.     300.     300.        2        0        0      .00   286.00   826.00
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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
```

*SECNO 91550.000

91550.000	22.63	612.33	.00	.00	612.56	.23	.09	.01	606.80
22700.0	76.6	22186.3	437.1	84.6	5656.4	227.4	260.1	17.4	598.20
.12	.91	3.92	1.92	.045	.040	.045	.000	589.70	10.39
.000198	475.	415.	375.	2	0	0	.00	305.61	316.00

*SECNO 91551.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .47

91551.000	13.89	612.09	.00	.00	612.69	.60	.02	.11	606.80
22700.0	145.7	21659.7	894.6	77.6	3448.0	221.5	265.7	17.7	598.20
.12	1.88	6.28	4.04	.045	.040	.045	.000	598.20	11.68
.000903	50.	50.	50.	2	0	0	.00	304.32	316.00

*SECNO 91552.000

91552.000	13.90	612.10	.00	.00	612.69	.59	.01	.00	606.80
22700.0	146.0	21659.2	894.8	77.7	3449.0	221.7	266.4	17.8	598.20
.12	1.88	6.28	4.04	.045	.040	.045	.000	598.20	11.66
.000902	8.	8.	8.	0	0	0	.00	304.34	316.00

*SECNO 91553.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.16

91553.000	22.82	612.52	.00	.00	612.75	.23	.02	.04	606.80
22700.0	82.7	22171.8	445.5	90.6	5704.6	232.2	272.0	18.1	598.20
.12	.91	3.89	1.92	.045	.040	.045	.000	589.70	9.32
.000193	50.	50.	50.	2	0	0	.00	306.68	316.00

*SECNO 91850.000
3280 CROSS SECTION 91850.00 EXTENDED .24 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .63

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 621.20 ELREA= 612.20

1

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

91850.000	24.44	612.44	.00	.00	612.89	.45	.07	.07	613.90
22700.0	.0	22248.8	451.2	.0	4092.5	274.9	301.4	19.8	605.80
.14	.00	5.44	1.64	.000	.040	.045	.000	588.00	106.27
.000480	330.	250.	170.	2	0	0	.00	311.73	418.00

*SECNO 91851.000

3265 DIVIDED FLOW

3280 CROSS SECTION 91851.00 EXTENDED .16 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .53

3370 NORMAL BRIDGE, NRD= 14 MIN ELTRD= 612.20 MAX ELLC= 619.30

91851.000	24.36	612.36	.00	.00	612.93	.57	.01	.04	619.30
22700.0	.0	22700.0	.0	.0	3742.0	.0	302.3	19.9	614.00
.14	.00	6.07	.00	.000	.040	.000	.000	588.00	106.55
.001723	10.	10.	10.	2	0	0	-193.15	236.03	418.00

*SECNO 91852.000

3265 DIVIDED FLOW

3280 CROSS SECTION 91852.00 EXTENDED .27 FEET

3370 NORMAL BRIDGE, NRD= 14 MIN ELTRD= 612.20 MAX ELLC= 619.30

91852.000	24.47	612.47	.00	.00	613.04	.57	.11	.00	619.30
22700.0	.0	22700.0	.0	.0	3752.8	.0	307.7	20.2	614.00
.14	.00	6.05	.00	.000	.040	.000	.000	588.00	106.22
.001731	62.	62.	62.	2	0	0	-208.84	241.28	418.00

*SECNO 91853.000
3280 CROSS SECTION 91853.00 EXTENDED .42 FEET

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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 = 1.93

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 621.20 ELREA= 612.20

91853.000	24.62	612.62	.00	.00	613.06	.44	.01	.01	613.90
22700.0	.0	22217.0	483.0	.0	4135.1	289.6	308.6	20.3	605.80
.14	.00	5.37	1.67	.000	.040	.045	.000	588.00	105.73
.000464	10.	10.	10.	2	0	0	.00	312.27	418.00

*SECNO 91950.000

3280 CROSS SECTION 91950.00 EXTENDED 2.64 FEET

3470 ENCROACHMENT STATIONS= 150.0 360.0 TYPE= 1 TARGET= -150.000

91950.000	26.84	612.64	.00	.00	613.18	.54	.09	.03	599.00
22700.0	30.0	22250.2	419.8	31.8	3729.8	194.8	328.1	21.5	599.00
.15	.94	5.97	2.15	.050	.040	.050	.000	585.80	150.00
.000420	245.	205.	160.	2	0	0	.00	210.00	360.00

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 616.60 ELREA= 626.10

92010.000	26.75	612.85	.00	.00	613.26	.41	.07	.01	604.80
22700.0	.0	22700.0	.0	.0	4403.4	.0	345.8	22.4	611.60
.16	.00	5.16	.00	.000	.040	.000	.000	586.10	160.00
.000345	235.	185.	135.	2	0	0	.00	206.50	366.50

*SECNO 92011.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

92011.000	26.84	612.84	.00	.00	613.28	.44	.00	.01	616.60
22700.0	.0	22700.0	.0	.0	4276.8	.0	346.8	22.4	626.10
.16	.00	5.31	.00	.000	.040	.000	.000	586.00	160.00
.000661	10.	10.	10.	1	0	0	.00	201.50	366.50

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 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

92012.000	26.86	612.86	.00	.00	613.30	.44	.03	.00	616.60
22700.0	.0	22700.0	.0	.0	4279.1	.0	350.6	22.6	626.10
.16	.00	5.30	.00	.000	.040	.000	.000	586.00	160.00
.000660	39.	39.	39.	0	0	0	.00	201.50	366.50

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 616.60 ELREA= 626.10

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 92013.000     26.80    612.90       .00       .00    613.31       .41       .00       .00    604.80
   22700.0        .0   22700.0        .0        .0    4413.1        .0     351.6      22.6    611.60
       .16       .00      5.14       .00      .000      .040      .000      .000    586.10    160.00
   .000342       10.       10.       10.         2         0         0       .00    206.50    366.50


*SECNO 92030.000
 92030.000     26.12    613.12       .00       .00    613.38       .26       .05       .02    600.00
   22700.0    1926.2   20232.5     541.3     854.5    4744.5     281.6     375.3      23.9    600.00
       .18      2.25      4.26      1.92      .045      .040      .042      .000    587.00     72.85
   .000214      210.      200.      205.         2         0         0       .00    359.18    432.03


*SECNO 92480.000
3280 CROSS SECTION  92480.00 EXTENDED       .33 FEET

 92480.000     24.33    613.33       .00       .00    613.46       .13       .07       .01    598.00
   22700.0    8671.8   13098.7     929.5    3733.0    3932.9     471.4     447.7      28.7    598.00
       .22      2.32      3.33      1.97      .040      .038      .040      .000    589.00     28.90
   .000130      450.      450.      450.         2         0         0       .00    561.10    590.00


*SECNO 93300.000
3280 CROSS SECTION  93300.00 EXTENDED       .36 FEET

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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


3470 ENCROACHMENT STATIONS=     240.0    710.0  TYPE=     1  TARGET=     470.000
 93300.000     24.36    613.36       .00       .00    613.52       .16       .05       .01    600.40
   22700.0    7597.8   14932.2     170.0    3154.6    4138.7     118.9     512.0      33.0    601.20
       .25      2.41      3.61      1.43      .040      .038      .040      .000    589.00    240.00
   .000153      360.      360.      360.         2         0         0       .00    470.00    710.00


CCHV=     .300 CEHV=     .500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS=     460.0   1405.0  TYPE=     1  TARGET=     945.000
 94035.000     24.54    613.54       .00       .00    613.63       .09       .09       .02    600.00
   22700.0    8817.8   13421.8     460.4    6738.4    4517.1     348.1     662.8      44.0    600.00
       .34      1.31      2.97      1.32      .055      .038      .045      .000    589.00    460.00
   .000105      650.      735.      735.         2         0         0       .00    943.28   1403.28


1490 NH CARD USED
*SECNO 94900.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .58


3470 ENCROACHMENT STATIONS=    1050.0   2248.0  TYPE=     1  TARGET=    1198.000
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 94900.000     26.25    613.55       .00       .00    613.89       .34       .13       .12    600.00
   22700.0    3520.6   19068.8     110.6    3352.5    3768.4      80.4     810.1      58.2    603.80
       .39      1.05      5.06      1.38      .059      .040      .050      .000    587.30   1050.00
   .000317      490.      900.     1020.         2         0         0       .00   1190.48   2240.48


1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS=     930.0   1725.0  TYPE=     1  TARGET=     795.000
 96100.000     22.56    614.06       .00       .00    614.21       .15       .27       .06    600.00
   22700.0    3678.3   16338.7    2683.0    3127.2    4591.0    1314.8    1002.4      78.0    602.80
       .49      1.18      3.56      2.04      .070      .040      .045      .000    591.50    930.00
   .000178      715.     1220.     1375.         2         0         0       .00    782.68   1712.68


CCHV=     .100 CEHV=     .300
1
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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 96500.000

3470 ENCROACHMENT STATIONS=     150.0    950.0  TYPE=     1  TARGET=     800.000
 96500.000     26.83    614.13       .00       .00    614.27       .14       .06       .00    600.00
   22700.0     699.0   15593.5    6407.5     788.3    4492.9    3634.7    1083.6      85.0    600.00
       .53       .89      3.47      1.76      .055      .038      .045      .000    587.30    150.00
   .000126      385.      400.      390.         2         0         0       .00    763.31    913.31


*SECNO 97300.000
 97300.000     25.48    614.28       .00       .00    614.40       .12       .12       .00    611.60
   22700.0       2.0   12814.0    9884.0       5.1    3853.9    5990.9    1273.1     100.1    598.90
       .63       .39      3.32      1.65      .050      .040      .055      .000    588.80     96.18
   .000152      995.      950.      810.         1         0         0       .00    753.83    850.01


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T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

              5                                                           22700     611.77

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2                  -1
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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
0

CCHV=     .100 CEHV=     .300
*SECNO 89500.000

3470 ENCROACHMENT STATIONS=     410.0    1080.0  TYPE=     1  TARGET=    -410.000
            VALLEY SEC A  D/S OF USGS GAGE 1515   1986 HWM 611.48
 89500.000     26.57    611.77       .00    611.67    612.07       .30       .00       .00    601.60
   22700.0    6281.8   16228.2     190.0    4653.1    3153.6     150.7        .0        .0    600.20
       .00      1.35      5.15      1.26      .090      .040      .063      .000    585.20    410.00
   .000310     1100.     1100.     1100.         0         0         0       .00    624.05   1034.05


*SECNO 90030.000

3470 ENCROACHMENT STATIONS=     540.0    1125.0  TYPE=     1  TARGET=    -540.000
 90030.000     26.71    611.91       .00    611.81    612.23       .31       .15       .00    600.00
   22700.0    3534.9   18510.1     654.9    2897.5    3756.3     421.8      83.9       6.4    600.00
       .03      1.22      4.93      1.55      .090      .040      .063      .000    585.20    540.00
   .000279      440.      530.      575.         1         0         0       .00    558.49   1098.49


CCHV=     .300 CEHV=     .500
*SECNO 90600.000
3280 CROSS SECTION  90600.00 EXTENDED     2.06 FEET


3470 ENCROACHMENT STATIONS=     200.0     445.0  TYPE=     1  TARGET=     245.000
 90600.000     26.26    612.06       .00    611.97    612.46       .40       .20       .04    600.00
   22700.0     332.9   22107.0     260.1     242.6    4306.5     141.3     173.7      12.5    600.00
       .07      1.37      5.13      1.84      .065      .040      .045      .000    585.80    200.00
   .000299      600.      680.      800.         2         0         0       .00    245.00    445.00


CCHV=     .100 CEHV=     .300
*SECNO 91120.000
3280 CROSS SECTION  91120.00 EXTENDED      .23 FEET


3470 ENCROACHMENT STATIONS=     553.0     812.0  TYPE=     1  TARGET=     259.000
 91120.000     26.43    612.23       .00    612.14    612.55       .32       .08       .01    600.00
   22700.0     339.7   22095.6     264.7     208.8    4816.5     153.8     207.7      14.2    600.00
       .09      1.63      4.59      1.72      .050      .040      .045      .000    585.80    553.00
   .000243      300.      300.      300.         2         0         0       .00    259.00    812.00
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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


*SECNO 91550.000

3470 ENCROACHMENT STATIONS=      41.0     314.0  TYPE=     1  TARGET=     273.000
 91550.000    22.72    612.42      .00    612.33    612.65      .24      .09      .01    606.80
   22700.0       .0   22306.6    393.4       .0    5679.2    220.0    260.4     16.7    598.20
       .12      .00      3.93     1.79      .000      .040     .045     .000   589.70     41.00
   .000203     475.      415.     375.         2         0        0      .00   273.00    314.00


*SECNO 91551.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .47


3470 ENCROACHMENT STATIONS=      41.0     314.0  TYPE=     1  TARGET=     273.000
 91551.000    13.98    612.18      .00    612.09    612.78      .60      .02      .11    606.80
   22700.0       .0   21889.3    810.7       .0    3469.6    214.5    265.9     17.1    598.20
       .12      .00      6.31     3.78      .000      .040     .045     .000   598.20     41.00
   .000929      50.       50.      50.         2         0        0      .00   273.00    314.00


*SECNO 91552.000

3470 ENCROACHMENT STATIONS=      41.0     314.0  TYPE=     1  TARGET=     273.000
 91552.000    13.99    612.19      .00    612.10    612.79      .60      .01      .00    606.80
   22700.0       .0   21889.1    810.9       .0    3470.7    214.6    266.6     17.1    598.20
       .12      .00      6.31     3.78      .000      .040     .045     .000   598.20     41.00
   .000928       8.        8.       8.         0         0        0      .00   273.00    314.00


*SECNO 91553.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.17


3470 ENCROACHMENT STATIONS=      41.0     314.0  TYPE=     1  TARGET=     273.000
 91553.000    22.91    612.61      .00    612.52    612.85      .23      .02      .04    606.80
   22700.0       .0   22300.5    399.5       .0    5728.4    224.5    272.1     17.4    598.20
       .12      .00      3.89     1.78      .000      .040     .045     .000   589.70     41.00
   .000198      50.       50.      50.         2         0        0      .00   273.00    314.00


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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
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*SECNO 91850.000
3280 CROSS SECTION  91850.00 EXTENDED       .34 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .65


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      621.20 ELREA=      612.20

 91850.000     24.54    612.54       .00    612.44    612.98       .44       .07       .06    613.90
   22700.0        .0   22231.3     468.7        .0    4115.9     283.0     301.4      19.0    605.80
       .14       .00      5.40      1.66      .000      .040      .045      .000    588.00    105.97
   .000471      330.      250.      170.         2         0         0       .00    312.03    418.00


*SECNO 91851.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91851.00 EXTENDED       .26 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .52


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91851.000     24.46    612.46       .00    612.36    613.03       .57       .01       .04    619.30
   22700.0        .0   22700.0        .0        .0    3751.6        .0     302.3      19.1    614.00
       .14       .00      6.05       .00      .000      .040      .000      .000    588.00    106.26
   .001730       10.       10.       10.         2         0         0   -207.12    240.72    418.00


*SECNO 91852.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91852.00 EXTENDED       .37 FEET


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91852.000     24.57    612.57       .00    612.47    613.13       .57       .11       .00    619.30
   22700.0        .0   22700.0        .0        .0    3762.0        .0     307.6      19.4    614.00
       .14       .00      6.03       .00      .000      .040      .000      .000    588.00    105.93
   .001738       62.       62.       62.         2         0         0   -223.81    245.98    418.00


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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


*SECNO 91853.000
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3280 CROSS SECTION 91853.00 EXTENDED .52 FEET

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.95

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 621.20 ELREA= 612.20

91853.000	24.72	612.72	.00	612.62	613.16	.43	.01	.01	613.90
22700.0	.0	22199.1	500.9	.0	4159.0	297.8	308.6	19.5	605.80
.14	.00	5.34	1.68	.000	.040	.045	.000	588.00	105.43
.000456	10.	10.	10.	2	0	0	.00	312.57	418.00

*SECNO 91950.000
3280 CROSS SECTION 91950.00 EXTENDED 2.74 FEET

3470 ENCROACHMENT STATIONS= 150.0 360.0 TYPE= 1 TARGET= -150.000

91950.000	26.94	612.74	.00	612.64	613.28	.54	.09	.03	599.00
22700.0	30.8	22243.3	425.9	32.6	3746.6	198.3	328.2	20.6	599.00
.15	.94	5.94	2.15	.050	.040	.050	.000	585.80	150.00
.000414	245.	205.	160.	2	0	0	.00	210.00	360.00

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 616.60 ELREA= 626.10

92010.000	26.85	612.95	.00	612.85	613.36	.41	.07	.01	604.80
22700.0	.0	22700.0	.0	.0	4423.6	.0	345.9	21.5	611.60
.16	.00	5.13	.00	.000	.040	.000	.000	586.10	160.00
.000340	235.	185.	135.	2	0	0	.00	206.50	366.50

*SECNO 92011.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

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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

92011.000	26.94	612.94	.00	612.84	613.37	.43	.00	.01	616.60
22700.0	.0	22700.0	.0	.0	4296.5	.0	346.9	21.6	626.10
.16	.00	5.28	.00	.000	.040	.000	.000	586.00	160.00
.000652	10.	10.	10.	1	0	0	.00	201.50	366.50

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

92012.000	26.96	612.96	.00	612.86	613.39	.43	.03	.00	616.60
22700.0	.0	22700.0	.0	.0	4298.8	.0	350.8	21.7	626.10
.16	.00	5.28	.00	.000	.040	.000	.000	586.00	160.00
.000651	39.	39.	39.	0	0	0	.00	201.50	366.50

*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 616.60 ELREA= 626.10

92013.000	26.89	612.99	.00	612.90	613.40	.41	.00	.00	604.80
22700.0	.0	22700.0	.0	.0	4433.2	.0	351.8	21.8	611.60
.16	.00	5.12	.00	.000	.040	.000	.000	586.10	160.00
.000337	10.	10.	10.	2	0	0	.00	206.50	366.50

*SECNO 92030.000

3470 ENCROACHMENT STATIONS= 112.0 418.0 TYPE= 1 TARGET= 306.000

92030.000	26.20	613.20	.00	613.12	613.47	.27	.05	.01	600.00
22700.0	1627.0	20564.2	508.8	698.2	4762.1	262.4	375.2	23.0	600.00
.18	2.33	4.32	1.94	.045	.040	.042	.000	587.00	112.00
.000218	210.	200.	205.	2	0	0	.00	306.00	418.00

*SECNO 92480.000
3280 CROSS SECTION 92480.00 EXTENDED .42 FEET

3470 ENCROACHMENT STATIONS= 38.0 568.0 TYPE= 1 TARGET= 530.000
1
21NOV95 10:22:50 PAGE 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
92480.000	24.42	613.42	.00	613.33	613.56	.13	.07	.01	598.00
22700.0	8700.8	13094.8	904.4	3748.3	3950.9	465.5	446.9	27.3	598.00
.22	2.32	3.31	1.94	.040	.038	.040	.000	589.00	38.00
.000128	450.	450.	450.	2	0	0	.00	530.00	568.00

*SECNO 93300.000
3280 CROSS SECTION 93300.00 EXTENDED .45 FEET

3470 ENCROACHMENT STATIONS= 240.0 710.0 TYPE= 1 TARGET= 470.000

93300.000	24.45	613.45	.00	613.36	613.62	.16	.05	.01	600.40
22700.0	7623.9	14905.9	170.1	3179.1	4157.5	119.8	511.5	31.4	601.20
.25	2.40	3.59	1.42	.040	.038	.040	.000	589.00	240.00
.000150	360.	360.	360.	2	0	0	.00	470.00	710.00

```
CCHV=     .300 CEHV=     .500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS=     500.0    1405.0  TYPE=     1  TARGET=     905.000
 94035.000     24.63    613.63       .00    613.54    613.72       .09       .09       .02    600.00
   22700.0    8695.1   13535.3     469.6    6536.4    4536.8     352.6     661.3      42.1    600.00
       .34      1.33      2.98      1.33      .055      .038      .045      .000    589.00    500.00
   .000105      650.      735.      735.         2         0         0       .00    903.61   1403.61


1490 NH CARD USED
*SECNO 94900.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .57


3470 ENCROACHMENT STATIONS=    1300.0    2235.0  TYPE=     1  TARGET=     935.000
 94900.000     26.34    613.64       .00    613.55    613.99       .35       .14       .13    600.00
   22700.0    3150.4   19443.9     105.7    2651.9    3782.9      72.4     803.9      54.7    603.80
       .39      1.19      5.14      1.46      .055      .040      .050      .000    587.30   1300.00
   .000325      490.      900.     1020.         2         0         0       .00    935.00   2235.00


1490 NH CARD USED
*SECNO 96100.000
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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


3470 ENCROACHMENT STATIONS=     960.0    1720.0  TYPE=     1  TARGET=     760.000
 96100.000     22.67    614.17       .00    614.06    614.32       .15       .27       .06    600.00
   22700.0    3632.7   16357.2    2710.1    3017.4    4616.9    1330.6     990.2      72.2    602.80
       .49      1.20      3.54      2.04      .069      .040      .045      .000    591.50    960.00
   .000175      715.     1220.     1375.         2         0         0       .00    753.03   1713.03


CCHV=     .100 CEHV=     .300
*SECNO 96500.000

3470 ENCROACHMENT STATIONS=     190.0     940.0  TYPE=     1  TARGET=     750.000
 96500.000     26.94    614.24       .00    614.13    614.38       .14       .06       .00    600.00
   22700.0     597.9   15620.9    6481.2     645.0    4513.9    3676.6    1070.7      78.8    600.00
       .53       .93      3.46      1.76      .055      .038      .045      .000    587.30    190.00
   .000124      385.      400.      390.         2         0         0       .00    723.98    913.98


*SECNO 97300.000
 97300.000     25.59    614.39       .00    614.28    614.50       .11       .12       .00    611.60
   22700.0       2.2   12772.2    9925.7       5.5    3873.7    6050.9    1260.1      93.4    598.90
       .63       .40      3.30      1.64      .050      .040      .055      .000    588.80     96.02
   .000149      995.      950.      810.         1         0         0       .00    753.98    850.01
```

THIS RUN EXECUTED 21NOV95 10:22:52

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HEC-2 WATER SURFACE PROFILES

Version 4.6.2; May 1991
****

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

CASS RIVER CA

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
89500.000	.00	.00	.00	585.20	22700.00	611.67	.00	611.97	3.17	5.18	7893.64	12759.60
89500.000	.00	.00	.00	585.20	22700.00	611.77	.00	612.07	3.10	5.15	7957.43	12888.36
90030.000	530.00	.00	.00	585.20	22700.00	611.81	.00	612.13	2.84	4.96	7020.36	13463.81
90030.000	530.00	.00	.00	585.20	22700.00	611.91	.00	612.23	2.79	4.93	7075.62	13588.32
90600.000	680.00	.00	.00	585.80	22700.00	611.97	.00	612.37	3.02	5.15	4706.66	13056.01
90600.000	680.00	.00	.00	585.80	22700.00	612.06	.00	612.46	2.99	5.13	4690.34	13121.75
91120.000	300.00	.00	.00	585.80	22700.00	612.14	.00	612.46	2.45	4.60	5193.24	14506.91
91120.000	300.00	.00	.00	585.80	22700.00	612.23	.00	612.55	2.43	4.59	5179.11	14574.52
91550.000	415.00	.00	.00	589.70	22700.00	612.33	.00	612.56	1.98	3.92	5968.38	16118.52
91550.000	415.00	.00	.00	589.70	22700.00	612.42	.00	612.65	2.03	3.93	5899.26	15923.92
* 91551.000	50.00	.00	.00	598.20	22700.00	612.09	.00	612.69	9.03	6.28	3747.12	7552.98
* 91551.000	50.00	.00	.00	598.20	22700.00	612.18	.00	612.78	9.29	6.31	3684.19	7449.13
91552.000	8.00	.00	.00	598.20	22700.00	612.10	.00	612.69	9.02	6.28	3748.40	7556.98
91552.000	8.00	.00	.00	598.20	22700.00	612.19	.00	612.79	9.28	6.31	3685.37	7452.97
* 91553.000	50.00	.00	.00	589.70	22700.00	612.52	.00	612.75	1.93	3.89	6027.37	16358.63
* 91553.000	50.00	.00	.00	589.70	22700.00	612.61	.00	612.85	1.98	3.89	5952.91	16151.08
* 91850.000	250.00	.00	.00	588.00	22700.00	612.44	.00	612.89	4.80	5.44	4367.35	10356.60
* 91850.000	250.00	.00	.00	588.00	22700.00	612.54	.00	612.98	4.71	5.40	4398.90	10454.79
* 91851.000	10.00	612.20	619.30	588.00	22700.00	612.36	.00	612.93	17.23	6.07	3742.04	5469.31
* 91851.000	10.00	612.20	619.30	588.00	22700.00	612.46	.00	613.03	17.30	6.05	3751.65	5458.10
91852.000	62.00	612.20	619.30	588.00	22700.00	612.47	.00	613.04	17.31	6.05	3752.76	5456.74
91852.000	62.00	612.20	619.30	588.00	22700.00	612.57	.00	613.13	17.38	6.03	3761.98	5444.80

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	91853.000	10.00	.00	.00	588.00	22700.00	612.62	.00	613.06	4.64	5.37	4424.67	10535.35
*	91853.000	10.00	.00	.00	588.00	22700.00	612.72	.00	613.16	4.56	5.34	4456.76	10636.04
	91950.000	205.00	.00	.00	585.80	22700.00	612.64	.00	613.18	4.20	5.97	3956.46	11070.27
	91950.000	205.00	.00	.00	585.80	22700.00	612.74	.00	613.28	4.14	5.94	3977.59	11157.01
	92010.000	185.00	.00	.00	586.10	22700.00	612.85	.00	613.26	3.45	5.16	4403.44	12222.34
	92010.000	185.00	.00	.00	586.10	22700.00	612.95	.00	613.36	3.40	5.13	4423.62	12315.84
	92011.000	10.00	616.60	626.10	586.00	22700.00	612.84	.00	613.28	6.61	5.31	4276.81	8832.31
	92011.000	10.00	616.60	626.10	586.00	22700.00	612.94	.00	613.37	6.52	5.28	4296.54	8889.65
	92012.000	39.00	616.60	626.10	586.00	22700.00	612.86	.00	613.30	6.60	5.30	4279.08	8838.88
	92012.000	39.00	616.60	626.10	586.00	22700.00	612.96	.00	613.39	6.51	5.28	4298.77	8896.12
	92013.000	10.00	.00	.00	586.10	22700.00	612.90	.00	613.31	3.42	5.14	4413.13	12267.22
	92013.000	10.00	.00	.00	586.10	22700.00	612.99	.00	613.40	3.37	5.12	4433.18	12360.26
	92030.000	200.00	.00	.00	587.00	22700.00	613.12	.00	613.38	2.14	4.26	5880.65	15520.80
	92030.000	200.00	.00	.00	587.00	22700.00	613.20	.00	613.47	2.18	4.32	5722.62	15364.51
	92480.000	450.00	.00	.00	589.00	22700.00	613.33	.00	613.46	1.30	3.33	8137.37	19909.62
	92480.000	450.00	.00	.00	589.00	22700.00	613.42	.00	613.56	1.28	3.31	8164.70	20067.14
	93300.000	360.00	.00	.00	589.00	22700.00	613.36	.00	613.52	1.53	3.61	7412.09	18366.22
	93300.000	360.00	.00	.00	589.00	22700.00	613.45	.00	613.62	1.50	3.59	7456.44	18538.68
	94035.000	735.00	.00	.00	589.00	22700.00	613.54	.00	613.63	1.05	2.97	11603.58	22139.72
	94035.000	735.00	.00	.00	589.00	22700.00	613.63	.00	613.72	1.05	2.98	11425.92	22114.19
*	94900.000	900.00	.00	.00	587.30	22700.00	613.55	.00	613.89	3.17	5.06	7201.30	12754.99
*	94900.000	900.00	.00	.00	587.30	22700.00	613.64	.00	613.99	3.25	5.14	6507.18	12589.22
	96100.000	1220.00	.00	.00	591.50	22700.00	614.06	.00	614.21	1.78	3.56	9033.03	17006.95
	96100.000	1220.00	.00	.00	591.50	22700.00	614.17	.00	614.32	1.75	3.54	8964.83	17147.54
	96500.000	400.00	.00	.00	587.30	22700.00	614.13	.00	614.27	1.26	3.47	8915.96	20223.71
	96500.000	400.00	.00	.00	587.30	22700.00	614.24	.00	614.38	1.24	3.46	8835.44	20345.67
	97300.000	950.00	.00	.00	588.80	22700.00	614.28	.00	614.40	1.52	3.32	9849.85	18397.85
	97300.000	950.00	.00	.00	588.80	22700.00	614.39	.00	614.50	1.49	3.30	9930.05	18616.34

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CASS RIVER CA

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
89500.000	22700.00	611.67	.00	.00	.19	623.82	.00
89500.000	22700.00	611.77	.10	.00	.10	624.05	.00

	90030.000	22700.00	611.81	.00	.15	.00	557.85	530.00
	90030.000	22700.00	611.91	.10	.14	.10	558.49	530.00
	90600.000	22700.00	611.97	.00	.16	.00	265.00	680.00
	90600.000	22700.00	612.06	.09	.15	.09	245.00	680.00
	91120.000	22700.00	612.14	.00	.17	.00	286.00	300.00
	91120.000	22700.00	612.23	.09	.17	.09	259.00	300.00
	91550.000	22700.00	612.33	.00	.18	.00	305.61	415.00
	91550.000	22700.00	612.42	.09	.18	.09	273.00	415.00
*	91551.000	22700.00	612.09	.00	-.23	.00	304.32	50.00
*	91551.000	22700.00	612.18	.09	-.24	.09	273.00	50.00
	91552.000	22700.00	612.10	.00	.01	.00	304.34	8.00
	91552.000	22700.00	612.19	.09	.01	.09	273.00	8.00
*	91553.000	22700.00	612.52	.00	.42	.00	306.68	50.00
*	91553.000	22700.00	612.61	.10	.43	.10	273.00	50.00
*	91850.000	22700.00	612.44	.00	-.08	.00	311.73	250.00
*	91850.000	22700.00	612.54	.10	-.08	.10	312.03	250.00
*	91851.000	22700.00	612.36	.00	-.08	.00	236.03	10.00
*	91851.000	22700.00	612.46	.10	-.08	.10	240.72	10.00
	91852.000	22700.00	612.47	.00	.11	.00	241.28	62.00
	91852.000	22700.00	612.57	.10	.11	.10	245.98	62.00
*	91853.000	22700.00	612.62	.00	.15	.00	312.27	10.00
*	91853.000	22700.00	612.72	.10	.15	.10	312.57	10.00
	91950.000	22700.00	612.64	.00	.02	.00	210.00	205.00
	91950.000	22700.00	612.74	.10	.02	.10	210.00	205.00
	92010.000	22700.00	612.85	.00	.21	.00	206.50	185.00
	92010.000	22700.00	612.95	.10	.21	.10	206.50	185.00
	92011.000	22700.00	612.84	.00	-.01	.00	201.50	10.00
	92011.000	22700.00	612.94	.10	-.01	.10	201.50	10.00
	92012.000	22700.00	612.86	.00	.03	.00	201.50	39.00
	92012.000	22700.00	612.96	.10	.03	.10	201.50	39.00

1

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	92013.000	22700.00	612.90	.00	.03	.00	206.50	10.00
	92013.000	22700.00	612.99	.10	.03	.10	206.50	10.00
	92030.000	22700.00	613.12	.00	.22	.00	359.18	200.00
	92030.000	22700.00	613.20	.08	.20	.08	306.00	200.00
	92480.000	22700.00	613.33	.00	.21	.00	561.10	450.00
	92480.000	22700.00	613.42	.09	.22	.09	530.00	450.00

	93300.000	22700.00	613.36	.00	.03	.00	470.00	360.00
	93300.000	22700.00	613.45	.09	.03	.09	470.00	360.00
	94035.000	22700.00	613.54	.00	.18	.00	943.28	735.00
	94035.000	22700.00	613.63	.09	.18	.09	903.61	735.00
*	94900.000	22700.00	613.55	.00	.01	.00	1190.48	900.00
*	94900.000	22700.00	613.64	.08	.01	.08	935.00	900.00
	96100.000	22700.00	614.06	.00	.51	.00	782.68	1220.00
	96100.000	22700.00	614.17	.11	.53	.11	753.03	1220.00
	96500.000	22700.00	614.13	.00	.07	.00	763.31	400.00
	96500.000	22700.00	614.24	.11	.07	.11	723.98	400.00
	97300.000	22700.00	614.28	.00	.15	.00	753.83	950.00
	97300.000	22700.00	614.39	.11	.15	.11	753.98	950.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 91551.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91551.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91553.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91553.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91850.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91850.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91851.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91851.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91853.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91853.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 94900.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 94900.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

1

FLOODWAY DATA, CASS RIVER CA
PROFILE NO. 2

	------- FLOODWAY -------			WATER SURFACE ELEVATION		
STATION	WIDTH	SECTION AREA	MEAN VELOCITY	WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE

89500.000	624.	7957.	2.9	611.8	611.7	.1
90030.000	558.	7076.	3.2	611.9	611.8	.1
90600.000	245.	4690.	4.8	612.1	612.0	.1
91120.000	259.	5179.	4.4	612.2	612.1	.1
91550.000	273.	5899.	3.8	612.4	612.3	.1
91551.000	273.	3684.	6.2	612.2	612.1	.1
91552.000	273.	3685.	6.2	612.2	612.1	.1
91553.000	273.	5953.	3.8	612.6	612.5	.1
91850.000	312.	4399.	5.2	612.5	612.4	.1
91851.000	312.	3752.	6.1	612.5	612.4	.1
91852.000	312.	3762.	6.0	612.6	612.5	.1
91853.000	313.	4457.	5.1	612.7	612.6	.1
91950.000	210.	3978.	5.7	612.7	612.6	.1
92010.000	207.	4424.	5.1	613.0	612.9	.1
92011.000	207.	4297.	5.3	612.9	612.8	.1
92012.000	207.	4299.	5.3	613.0	612.9	.1
92013.000	207.	4433.	5.1	613.0	612.9	.1
92030.000	306.	5723.	4.0	613.2	613.1	.1
92480.000	530.	8165.	2.8	613.4	613.3	.1
93300.000	470.	7456.	3.0	613.5	613.4	.1
94035.000	904.	11426.	2.0	613.6	613.5	.1
94900.000	935.	6507.	3.5	613.7	613.6	.1
96100.000	753.	8965.	2.5	614.2	614.1	.1
96500.000	724.	8835.	2.6	614.2	614.1	.1
97300.000	754.	9930.	2.3	614.4	614.3	.1

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*  HEC-2 WATER SURFACE PROFILES         *
*                                       *
*  Version   4.6.2:  May 1991           *
*                                       *
*  RUN DATE    31AUG93    TIME   08:30:01 *
*****************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS         *
*  HYDROLOGIC ENGINEERING CENTER        *
*  609 SECOND STREET, SUITE D           *
*  DAVIS, CALIFORNIA 95616-4687         *
*          (916) 756-1104               *
*****************************************
```

Floodway "revised" at XSEC's L, M, N, O, P

11/95

```
X     X  XXXXXXX   XXXXX            XXXXX
X     X  X        X     X          X     X
X     X  X        X                      X
XXXXXXX  XXXX     X         XXXXX   XXXXX
X     X  X        X                X
X     X  X        X     X          X
X     X  XXXXXXX   XXXXX           XXXXXXX
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1

31AUG93 08:30:01 PAGE 1

THIS RUN EXECUTED 31AUG93 08:30:01

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

 Version   4.6.2;  May 1991
*****************************************
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$Q_{100} = 22700$

Revised Starting WSEL & Q

```
T1       CITY OF FRANKENMUTH FIS
T2      NATURAL RUN
T3      CASS RIVER            CASSFIS2.DAT

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

                                       .000316                     22700   611.48

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

                        -1


J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150       200

NC      .09       .063       .04        .1         .3
ET                                                9.1                                   425       1008
            VALLEY SEC A  D/S OF USGS GAGE 1515   1986 HWM 611.48
X1    89500        18       874       1008       1100       1100       1100
X3                                     410
GR   608.5        250     606.8        375        602        450        600        640        600        670
GR   602.         690       602        730        602        765      603.9        851      601.6        874
GR   590.9        885       586        910      585.2        940      585.5        970      590.9        998
GR   600.2       1008     615.3       1042      630.8       1080

ET                                                9.1                                   580       1050
X1   90030         17       870       1032       440        575        530
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X3                                540
GR   607.8      330     607.7     560      603      690      600      760     600.4     800
GR   602.       820      600      870      590      900      588      910      586      925
GR   585.2      955     585.2     985      590     1020      600     1032      602     1050
GR     610     1086      616     1125

NC    .065      .045      .04       .3       .5
ET                                                 9.1                                  200      445
        X1   90600.       14      240      425      600      800      680
        GR     610      200      608      210      606      225      600      240      590      258
        GR     588      265    587.2      295    585.8      325    585.8      350     588.      375
        GR   590.       408      600      425      610      445      610      465
        1
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        NC     .05     .045      .04       .1       .3
        ET                                         9.1                                  353      812
        X1   91120       11      580      792      300      300      300
        GR     612      540      610      550      600      580     591.2     616     587.2      652
        GR   585.8     698.     585.8      733     591.2      775      600      792      610     814.
        GR     612      826

        NC    .045     .045      .04
        ET                                         9.1                                   41      314
        X1   91550.       8       41      291      475      375      415
        GR   614.2             606.8       41     589.7       41     589.7      291     598.2      291
        GR   607.5      314     607.7      316     613.6      316

        ET                                         9.1                                   41      314
        X1   91551.       7       41      291       50       50       50
        GR   614.2             606.8       41     598.4       41     598.2      291     607.5      314
        GR   607.7      316     613.6     316.

        ET                                         9.1                                   41      314
        X1   91552.                                 8        8        8

        ET                                         9.1                                   41      314
        X1   91553        8       41      291       50       50       50
        GR   614.2             606.8       41     589.7       41     589.7      291     598.2      291
        GR   607.5      314     607.7      316     613.6      316

        X1   91850.       12      102      338      330      170      250
        X3   10.                                                          621.2    612.2
        GR   621.             622.6       22     613.9      102      594      160     588.5      190
        GR   588.       220     588.5      250      592.      280      595      298      599      317
        GR   605.8      338     612.2      418

        X1   91851        23      102      338       10       10       10
        BT     14        22     621.2     621.2       22    624.4     621.2      102     622.6     619.3
        BT   102.     622.6     614.8     158.7    621.3     613.5     161.2    621.3     613.5     218.7
        BT     620    612.1     221.1      620    612.1     278.7     618.7    610.7     281.2     618.7
        BT   610.7      338     617.3     609.4      338     617.3      614      418     615.5     612.2
        BT   418.     612.2     612.2
        GR   621.2       22     619.3      102     613.9      102      599      146     594.5     158.7
        GR   613.5    158.7     613.5     161.2     593.5     161.2     588.5     190     588.5     218.7
        GR   612.1    218.7     612.1     221.2      588     221.2     588.5     250     588.5      278
        GR   610.7    278.7     610.7     281.2     594.5     281.2      595      298      599      317
        GR   605.8      338      614      338      612.2      418

        X1   91852.                                  62       62       62
        X2                                                       1

        X1   91853.       12      102      338       10       10       10
        X3                                                                   621.2    612.2
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GR     621                621        22      613.9       102       594       160      588.5       190
GR     588        220     588.5       250       592       280       595       298       599       317
GR   605.8        338     612.2       418
1
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NC   .05          .05       .04
ET                                              9.1                                      158       325
X1   91950         11       158       325       245       160       205
X3                                    150
GR     616        142       610       155       599       158     588.8       192      585.8       214
GR   589.2        246     588.6       288       599       325       600       330       610       340
GR     610        360

X1   92010.        12       160     366.5       235       135       185
X3   10                                                                    616.6      626.1
GR   616.6        140     604.8       160     598.1     170.8     593.7     182.8      587.1     223.5
GR   586.1      238.9     586.1     266.8     586.3     309.8     591.1     319.5      598.1     344.5
GR   611.6      366.5     626.1     386.5

X1   92011.        24       160     366.5        10        10        10
BT   8.           143     616.6     616.6       143     643.6     616.6       160      644.2     616.6
BT     160      644.2     613.4     366.5     651.8     622.8     366.5     651.8      626.1     386.5
BT   652.2      626.1     386.5     626.1     626.1
GR   616.6        140     616.6       143     616.6       160     604.8       160      598.1     170.8
GR   593.7      182.8     587.1     223.5     586.5       228     616.5       228      616.5     230.5
GR   586.5      230.5     586.1     238.9     586.1     266.8       586     295.5       619.     295.5
GR   619.         298       586       298     586.3     309.8     591.1     319.5      598.1     344.5
GR   611.6      366.5     626.1     366.5     626.1     383.5     626.1     386.5

X1   92012.                                     39        39        39
X2                                                                  1

X1   92013.        12       160     366.5        10        10        10
X3   10.                                                                    616.6      626.1
GR   616.6        140     604.8       160     598.1     170.8     593.7     182.8      587.1     223.5
GR   586.1      238.9     586.1     266.8     586.3     309.8     591.1     319.5      598.1     344.5
GR   611.6      366.5     626.1     386.5

NC     .045      .042       .04
ET                                              9.1                                      112       418
X1   92030.        17       173       386       210       205       200
GR     620         35       610        90       604       112       602       135       600       173
GR     590        202       586       224       587       250       587       275       588       310
GR     590        330       593       345       595       355       598       370       600       386
GR     610        418       614       436

NC      .04       .04      .038
ET                                              9.1                                       38       568
X1   92480.        20       332       522       450       450       450
GR     616         20       610        40       602        65       600       100      599.2       102
GR   599.2        250       600       255       602       275       602       320       600       328
GR     598        332     593.8       396       589       403     590.3       442       589       482
GR     598        522       600       535       610       568       613       570       613       590
1
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X1   93300.        17       500       700       360       360       360
X3                                    240                 710
GR   620.         185       610       230       602       252       600       360       602       468
GR     602        486     600.4       500     598.8       511     593.8       548       589       552
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GR   612.4        748        613        759

NC     .055       .045       .038         .3         .5
X1   94035.         20       1130       1352        650        735        735
X3                                      600
GR   612.         235        610        265        608        280        607        500        606        590
GR     604        645      602.5        750        602        895        602        928     602.55       1030
GR     602       1128        600       1130      593.8       1167        589       1201     590.35       1240
GR     589       1279        598       1320        600       1352        610       1390        614       1405

NH      4.         .1       1230       .055       2050        .04       2224        .05       2281
ET                                                9.1                                      1500       2224
X1   94900         21       2050       2224        490       1020        900
GR     612        755      610.5        800      610.5       1170      610.5       1230      610.5       1300
GR   610.5       1380      610.5       1520      610.5       1615      610.5       1770      610.5       1880
GR   610.5       1915        608       2025        600       2050      593.1       2080        589       2115
GR   587.3       2150      589.6       2185      598.9       2217      603.8       2224        618       2248
GR   638.3       2281

NH       4         .1       1170        .06       1331        .04       1568       .045       1725
X1   96100.         20       1331       1568        715       1375       1220
X3                                      1125                  1700
GR     610        730      609.2        760        609       1000        608       1085        606       1170
GR     604       1255        602       1285        600       1331      598.9       1333      591.5       1380
GR   591.5       1425      592.4       1470      597.2       1510      598.9       1556      602.8       1568
GR     602       1600        604       1650        606       1670        610       1700        618       1725

NC                                       .1         .3
X1   96500.         23        330        525        385        390        400
X3                                      330                   900
X4   1.          611.5        260
GR   626.                     620         50        610        120        610        160        610        300
GR   600.         330      589.9        337      593.1        373        589        410      587.3        447
GR   589.6        484      598.9        518        600        525      603.8        540      600.8        635
GR     602        700        604        730        606        760        606        790        608        850
GR     610        875        612        900        620        950

NC     .05       .055        .04
X1   97300         19        100        286        995        810        950
X3                                                            800
GR   628.          20        626         50        620         88      611.6        100      598.9        103
GR   594.2        145      588.8        180      590.2        215        594        250      598.9        286
GR   604.6        296      603.2        310        600        425        604        625        606        750
GR   608.         810        610        850        612       1020        614       1070
1
   31AUG93      08:30:01                                                                                  PAGE    5


    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 89500.000

3470 ENCROACHMENT STATIONS=      410.0    1080.0  TYPE=      1  TARGET=     -410.000
            VALLEY SEC A  D/S OF USGS GAGE 1515   1986 HWM 611.48
 89500.000     26.47    611.67       .00    611.48    611.97       .31       .00       .00    601.60
   22700.0    6239.1   16273.4     187.5    4605.7    3139.9     148.1        .0        .0    600.20
       .00      1.35      5.18      1.27      .090      .040      .063      .000    585.20    410.00
   .000317     1100.     1100.     1100.         0         0         3       .00    623.82   1033.82
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*SECNO 90030.000

3470 ENCROACHMENT STATIONS=      540.0    1125.0  TYPE=      1  TARGET=     -540.000
 90030.000     26.61    611.81       .00       .00    612.13       .32       .15       .00    600.00
   22700.0    3504.4   18548.6     647.0    2864.9    3740.3     415.2      83.3       6.4    600.00
       .03      1.22      4.96      1.56      .090      .040      .063      .000    585.20    540.00
   .000284      440.      530.      575.         1         0         0       .00    557.85   1097.85


CCHV=     .300 CEHV=     .500
*SECNO 90600.000
3280 CROSS SECTION  90600.00 EXTENDED      1.97 FEET

 90600.000     26.17    611.97       .00       .00    612.37       .40       .20       .04    600.00
   22700.0     327.0   22068.5     304.5     238.8    4289.0     178.8     172.8      12.6    600.00
       .07      1.37      5.15      1.70      .065      .040      .045      .000    585.80    200.00
   .000302      600.      680.      800.         2         0         0       .00    265.00    465.00


CCHV=     .100 CEHV=     .300
*SECNO 91120.000
3280 CROSS SECTION  91120.00 EXTENDED       .14 FEET

 91120.000     26.34    612.14       .00       .00    612.46       .32       .08       .01    600.00
   22700.0     362.4   22047.3     290.4     225.6    4796.8     170.8     206.9      14.5    600.00
       .09      1.61      4.60      1.70      .050      .040      .045      .000    585.80    540.00
   .000245      300.      300.      300.         2         0         0       .00    286.00    826.00


1
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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 91550.000
 91550.000     22.63    612.33       .00       .00    612.56       .23       .09       .01    606.80
   22700.0      76.6   22186.3     437.1      84.6    5656.4     227.4     260.1      17.4    598.20
       .12       .91      3.92      1.92      .045      .040      .045      .000    589.70     10.39
   .000198      475.      415.      375.         2         0         0       .00    305.61    316.00


*SECNO 91551.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .47

 91551.000     13.89    612.09       .00       .00    612.69       .60       .02       .11    606.80
   22700.0     145.7   21659.7     894.6      77.6    3448.0     221.5     265.7      17.7    598.20
       .12      1.88      6.28      4.04      .045      .040      .045      .000    598.20     11.68
   .000903       50.       50.       50.         2         0         0       .00    304.32    316.00


*SECNO 91552.000
 91552.000     13.90    612.10       .00       .00    612.69       .59       .01       .00    606.80
   22700.0     146.0   21659.2     894.8      77.7    3449.0     221.7     266.4      17.8    598.20
       .12      1.88      6.28      4.04      .045      .040      .045      .000    598.20     11.66
   .000902        8.        8.        8.         0         0         0       .00    304.34    316.00


*SECNO 91553.000
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3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  2.16

 91553.000     22.82    612.52       .00       .00    612.75       .23       .02       .04    606.80
   22700.0      82.7   22171.8     445.5      90.6    5704.6     232.2     272.0      18.1    598.20
       .12       .91      3.89      1.92      .045      .040      .045      .000    589.70      9.32
   .000193       50.       50.       50.         2         0         0       .00    306.68    316.00


*SECNO 91850.000
3280 CROSS SECTION  91850.00 EXTENDED       .24 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .63


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       621.20 ELREA=       612.20

1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELV     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


 91850.000     24.44    612.44       .00       .00    612.89       .45       .07       .07    613.90
   22700.0        .0   22248.8     451.2        .0    4092.5     274.9     301.4      19.8    605.80
       .14       .00      5.44      1.64      .000      .040      .045      .000    588.00    106.27
   .000480      230.      250.      170.         2         0         0       .00    311.73    418.00


*SECNO 91851.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91851.00 EXTENDED       .16 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .53


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91851.000     24.36    612.36       .00       .00    612.93       .57       .01       .04    619.30
   22700.0        .0   22700.0        .0        .0    3742.0        .0     302.3      19.9    614.00
       .14       .00      6.07       .00      .000      .040      .000      .000    588.00    106.55
   .001723       10.       10.       10.         2         0         0   -193.15    235.03    418.00


*SECNO 91852.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91852.00 EXTENDED       .27 FEET


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91852.000     24.47    612.47       .00       .00    613.04       .57       .11       .00    619.30
   22700.0        .0   22700.0        .0        .0    3752.8        .0     307.7      20.2    614.00
       .14       .00      6.05       .00      .000      .040      .000      .000    588.00    106.22
   .001731       62.       62.       62.         2         0         0   -208.84    241.28    418.00
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*SECNO 91853.000
3280 CROSS SECTION  91853.00 EXTENDED       .42 FEET

1
   31AUG93      08:30:01                                                                                    PAGE    8

    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 =  1.93


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       621.20 ELREA=       612.20

 91853.000     24.62    612.62       .00       .00    613.06       .44       .01       .01    613.90
   22700.0        .0   22217.0     483.0        .0    4135.1     289.6     308.6      20.3    605.80
       .14       .00      5.37      1.67      .000      .040      .045      .000    588.00    105.73
   .000464       10.       10.       10.         2         0         0       .00    312.27    418.00


*SECNO 91950.000
3280 CROSS SECTION  91950.00 EXTENDED      2.64 FEET


3470 ENCROACHMENT STATIONS=      150.0     360.0  TYPE=      1  TARGET=     -150.000
 91950.000     26.84    612.64       .00       .00    613.18       .54       .09       .03    599.00
   22700.0      30.0   22250.2     419.8      31.8    3729.8     194.8     328.1      21.5    599.00
       .15       .94      5.97      2.15      .050      .040      .050      .000    585.80    150.00
   .000420      245.      205.      160.         2         0         0       .00    210.00    360.00


*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       616.60 ELREA=       626.10

 92010.000     26.75    612.85       .00       .00    613.26       .41       .07       .01    604.80
   22700.0        .0   22700.0        .0        .0    4403.4        .0     345.8      22.4    611.60
       .16       .00      5.16       .00      .000      .040      .000      .000    586.10    160.00
   .000345      235.      185.      135.         2         0         0       .00    206.50    366.50


*SECNO 92011.000

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=   8 MIN ELTRD=   616.60 MAX ELLC=   626.10

 92011.000     26.84    612.84       .00       .00    613.28       .44       .00       .01    616.60
   22700.0        .0   22700.0        .0        .0    4276.8        .0     346.8      22.4    626.10
       .16       .00      5.31       .00      .000      .040      .000      .000    586.00    160.00
   .000661       10.       10.       10.         1         0         0       .00    201.50    366.50


1
   31AUG93      08:30:01                                                                                    PAGE    9

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
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   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


*SECNO 92012.000

3265 DIVIDED FLOW


3370 NORMAL BRIDGE. NRD=   8 MIN ELTRD=   616.60 MAX ELLC=   626.10

 92012.000     26.86    612.86       .00       .00    613.30       .44       .03       .00    616.60
   22700.0        .0   22700.0        .0        .0    4279.1        .0     350.6      22.6    626.10
       .16       .00      5.30       .00      .000      .040      .000      .000    586.00    160.00
   .000660       39.       39.       39.         0         0         0       .00    201.50    366.50


*SECNO 92013.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       616.60 ELREA=       626.10

 92013.000     26.80    612.90       .00       .00    613.31       .41       .00       .00    604.80
   22700.0        .0   22700.0        .0        .0    4413.1        .0     351.6      22.6    611.60
       .16       .00      5.14       .00      .000      .040      .000      .000    586.10    160.00
   .000342       10.       10.       10.         2         0         0       .00    206.50    366.50


*SECNO 92030.000
 92030.000     26.12    613.12       .00       .00    613.38       .26       .05       .02    600.00
   22700.0    1926.2   20232.5     541.3     854.5    4744.5     281.6     375.3      23.9    600.00
       .18      2.25      4.26      1.92      .045      .040      .042      .000    587.00     72.85
   .000214      210.      200.      205.         2         0         0       .00    359.18    432.03


*SECNO 92480.000
3280 CROSS SECTION  92480.00 EXTENDED       .33 FEET

 92480.000     24.33    613.33       .00       .00    613.46       .13       .07       .01    598.00
   22700.0    8671.8   13098.7     929.5    3733.0    3932.9     471.4     447.7      28.7    598.00
       .22      2.32      3.33      1.97      .040      .038      .040      .000    589.00     28.90
   .000130      450.      450.      450.         2         0         0       .00    561.10    590.00


*SECNO 93300.000
3280 CROSS SECTION  93300.00 EXTENDED       .36 FEET

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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


3470 ENCROACHMENT STATIONS=      240.0     710.0  TYPE=      1  TARGET=      470.000
 93300.000     24.36    613.36       .00       .00    613.52       .16       .05       .01    600.40
   22700.0    7597.8   14932.2     170.0    3154.6    4138.7     118.9     512.0      33.0    601.20
       .25      2.41      3.61      1.43      .040      .038      .040      .000    589.00    240.00
   .000153      360.      360.      360.         2         0         0       .00    470.00    710.00


CCHV=     .300 CEHV=     .500
*SECNO 94035.000
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3470 ENCROACHMENT STATIONS=      600.0    1405.0  TYPE=      1  TARGET=     -600.000
 94035.000     24.53    613.53       .00       .00    613.63       .10       .09       .02    600.00
   22700.0    8174.3   14044.7     481.1    5763.0    4514.4     347.5     655.5      42.9    600.00
       .33      1.42      3.11      1.38      .055      .038      .045      .000    589.00    600.00
   .000115      650.      735.      735.         2         0         0       .00    803.23   1403.23


1490 NH CARD USED
*SECNO 94900.000
3280 CROSS SECTION  94900.00 EXTENDED      1.56 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  XRATIO =   .62

 94900.000     26.26    613.56       .00       .00    613.88       .32       .14       .11    600.00
   22700.0    3927.9   18667.6     108.5    4233.7    3770.4      80.6     802.3      58.1    603.80
       .38      .93      4.95      1.35      .064      .040      .050      .000    587.30    735.00
   .000303      490.      900.     1020.         2         0         0       .00   1485.50   2240.50


1490 NH CARD USED
*SECNO 96100.000

3470 ENCROACHMENT STATIONS=     1125.0    1700.0  TYPE=      1  TARGET=     575.000
 96100.000     22.53    614.03       .00       .00    614.20       .17       .27       .04    600.00
   22700.0    3078.8   16894.1    2727.0    2034.5    4583.1    1284.6     992.3      78.5    602.80
       .48      1.51      3.69      2.12      .063      .040      .045      .000    591.50   1125.00
   .000192      715.     1220.     1375.         2         0         0       .00    575.00   1700.00


CCHV=     .100 CEHV=     .300
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELV     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 96500.000

3470 ENCROACHMENT STATIONS=      330.0     900.0  TYPE=      1  TARGET=     570.000
 96500.000     26.81    614.11       .00       .00    614.26       .15       .07       .00    600.00
   22700.0        .0   15887.9    6812.1        .0    4490.4    3615.8    1064.8      83.7    600.00
       .52       .00      3.54      1.88      .000      .038      .045      .000    587.30    330.00
   .000143      385.      400.      390.         1         0         0       .00    570.00    900.00


*SECNO 97300.000
3280 CROSS SECTION  97300.00 EXTENDED      .27 FEET


3470 ENCROACHMENT STATIONS=         .0     800.0  TYPE=      1  TARGET=     799.999
 97300.000     25.48    614.28       .00       .00    614.40       .12       .13       .00    611.60
   22700.0       2.0   12992.9    9705.1       5.1    3853.2    5713.5    1242.6      96.1    598.90
       .61       .40      3.37      1.70      .050      .040      .055      .000    588.80     96.18
   .000157      995.      950.      810.         1         0         0       .00    703.82    800.00


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T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
		5						22700	611.77	

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2		-1							

1

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

*PROF 2
0

CCHV= .100 CEHV= .300
*SECND 89500.000

3470 ENCROACHMENT STATIONS= 410.0 1080.0 TYPE= 1 TARGET= -410.000
VALLEY SEC A D/S OF USGS GAGE 1515 1986 HWM 611.48

89500.000	26.57	611.77	.00	611.67	612.07	.30	.00	.00	601.60
22700.0	6281.8	16228.2	190.0	4653.1	3153.6	150.7	.0	.0	600.20
.00	1.35	5.15	1.26	.090	.040	.063	.000	585.20	410.00
.000310	1100.	1100.	1100.	0	0	0	.00	624.05	1034.05

*SECND 90030.000

3470 ENCROACHMENT STATIONS= 540.0 1125.0 TYPE= 1 TARGET= -540.000

90030.000	26.71	611.91	.00	611.81	612.23	.31	.15	.00	600.00
22700.0	3534.9	18510.1	654.9	2897.5	3756.3	421.8	83.9	6.4	600.00
.03	1.22	4.93	1.55	.090	.040	.063	.000	585.20	540.00
.000279	440.	530.	575.	1	0	0	.00	558.49	1098.49

CCHV= .300 CEHV= .500
*SECND 90600.000
3280 CROSS SECTION 90600.00 EXTENDED 2.06 FEET

3470 ENCROACHMENT STATIONS= 200.0 445.0 TYPE= 1 TARGET= 245.000

90600.000	26.26	612.06	.00	611.97	612.46	.40	.20	.04	600.00
22700.0	332.9	22107.0	260.1	242.6	4306.5	141.3	173.7	12.5	600.00
.07	1.37	5.13	1.84	.065	.040	.045	.000	585.80	200.00
.000299	600.	680.	800.	2	0	0	.00	245.00	445.00

CCHV= .100 CEHV= .300
*SECND 91120.000
3280 CROSS SECTION 91120.00 EXTENDED .23 FEET

3470 ENCROACHMENT STATIONS= 553.0 612.0 TYPE= 1 TARGET= 259.000

22700.0	339.7	22095.6	264.7	208.8	4816.5	153.8	207.7	14.2	600.00
.09	1.63	4.59	1.72	.050	.040	.045	.000	585.80	553.00
.000243	300.	300.	300.	2	0	0	.00	259.00	812.00

1

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 91550.000

3470 ENCROACHMENT STATIONS= 41.0 314.0 TYPE= 1 TARGET= 273.000

91550.000	22.72	612.42	.00	612.33	612.65	.24	.09	.01	606.80
22700.0	.0	22306.6	393.4	.0	5679.2	220.0	260.4	16.7	598.20
.12	.00	3.93	1.79	.000	.040	.045	.000	589.70	41.00
.000203	475.	415.	375.	2	0	0	.00	273.00	314.00

*SECNO 91551.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = .47

3470 ENCROACHMENT STATIONS= 41.0 314.0 TYPE= 1 TARGET= 273.000

91551.000	13.98	612.18	.00	612.09	612.78	.60	.02	.11	606.80
22700.0	.0	21889.3	810.7	.0	3469.6	214.5	265.9	17.1	598.20
.12	.00	6.31	3.78	.000	.040	.045	.000	598.20	41.00
.000929	50.	50.	50.	2	0	0	.00	273.00	314.00

*SECNO 91552.000

3470 ENCROACHMENT STATIONS= 41.0 314.0 TYPE= 1 TARGET= 273.000

91552.000	13.99	612.19	.00	612.10	612.79	.60	.01	.00	606.80
22700.0	.0	21889.1	810.9	.0	3470.7	214.6	266.6	17.1	598.20
.12	.00	6.31	3.78	.000	.040	.045	.000	598.20	41.00
.000928	8.	8.	8.	0	0	0	.00	273.00	314.00

*SECNO 91553.000

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 2.17

3470 ENCROACHMENT STATIONS= 41.0 314.0 TYPE= 1 TARGET= 273.000

91553.000	22.91	612.61	.00	612.52	612.85	.23	.02	.04	606.80
22700.0	.0	22300.5	399.5	.0	5728.4	224.5	272.1	17.4	598.20
.12	.00	3.89	1.78	.000	.040	.045	.000	589.70	41.00
.000198	50.	50.	50.	2	0	0	.00	273.00	314.00

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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

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$SECNO 91850.000
3280 CROSS SECTION  91850.00 EXTENDED       .34 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .65


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      621.20 ELREA=      612.20

 91850.000     24.54    612.54       .00    612.44    612.98       .44       .07       .06    613.90
   22700.0        .0   22231.3     468.7        .0    4115.9     283.0     301.4      19.0    605.80
       .14       .00      5.40      1.66      .000      .040      .045      .000    588.00    105.97
   .000471      330.      250.      170.         2         0         0       .00    312.03    418.00


$SECNO 91851.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91851.00 EXTENDED       .26 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .52


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91851.000     24.46    612.46       .00    612.36    613.03       .57       .01       .04    619.30
   22700.0        .0   22700.0        .0        .0    3751.6        .0     302.3      19.1    614.00
       .14       .00      6.05       .00      .000      .040      .000      .000    588.00    106.26
   .001730       10.       10.       10.         2         0         0   -207.12    240.72    418.00


$SECNO 91852.000

3265 DIVIDED FLOW

3280 CROSS SECTION  91852.00 EXTENDED       .37 FEET


3370 NORMAL BRIDGE, NRD=  14 MIN ELTRD=   612.20 MAX ELLC=   619.30

 91852.000     24.57    612.57       .00    612.47    613.13       .57       .11       .00    619.30
   22700.0        .0   22700.0        .0        .0    3762.0        .0     307.6      19.4    614.00
       .14       .00      6.03       .00      .000      .040      .000      .000    588.00    105.93
   .001738       62.       62.       62.         2         0         0   -223.81    245.98    418.00


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    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 91853.000
3280 CROSS SECTION  91853.00 EXTENDED       .52 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.95
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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 621.20 ELREA= 612.20

91853.000	24.72	612.72	.00	612.62	613.16	.43	.01	.01	613.90
22700.0	.0	22199.1	500.9	.0	4159.0	297.8	308.6	19.5	605.80
.14	.00	5.34	1.68	.000	.040	.045	.000	588.00	105.43
.000456	10.	10.	10.	2	0	0	.00	312.57	418.00

*SECNO 91950.000
3280 CROSS SECTION 91950.00 EXTENDED 2.74 FEET

3470 ENCROACHMENT STATIONS= 150.0 360.0 TYPE= 1 TARGET= -150.000

91950.000	26.94	612.74	.00	612.64	613.28	.54	.09	.03	599.00
22700.0	30.8	22243.3	425.9	32.6	3746.6	198.3	328.2	20.6	599.00
.15	.94	5.94	2.15	.050	.040	.050	.000	585.80	150.00
.000414	245.	205.	160.	2	0	0	.00	210.00	360.00

*SECNO 92010.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 616.60 ELREA= 626.10

92010.000	26.85	612.95	.00	612.85	613.36	.41	.07	.01	604.80
22700.0	.0	22700.0	.0	.0	4423.6	.0	345.9	21.5	611.60
.16	.00	5.13	.00	.000	.040	.000	.000	586.10	160.00
.000340	235.	185.	135.	2	0	0	.00	206.50	366.50

*SECNO 92011.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

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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	QTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
92011.000	26.94	612.94	.00	612.84	613.37	.43	.00	.01	616.60
22700.0	.0	22700.0	.0	.0	4296.5	.0	346.9	21.6	626.10
.16	.00	5.28	.00	.000	.040	.000	.000	586.00	160.00
.000652	10.	10.	10.	1	0	0	.00	201.50	366.50

*SECNO 92012.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 8 MIN ELTRD= 616.60 MAX ELLC= 626.10

92012.000	26.96	612.96	.00	612.86	613.39	.43	.03	.00	616.60
22700.0	.0	22700.0	.0	.0	4298.8	.0	350.8	21.7	626.10
.16	.00	5.26	.00	.000	.040	.000	.000	586.00	160.00
.000651	39.	39.	39.	0	0	0	.00	201.50	366.50

*SECNO 92013.000

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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      616.60 ELREA=      626.10

 92017.000     26.89    612.99       .00    612.90    613.40       .41       .00       .00    604.80
   22700.0        .0   22700.0        .0        .0    4433.2        .0     351.8      21.8    611.60
       .16       .00      5.12       .90      .000      .040      .000      .000    586.10    160.00
   .000337       10.       10.       10.         2         0         0       .00    206.50    366.50


*SECNO 92030.000

3470 ENCROACHMENT STATIONS=      112.0     418.0  TYPE=      1  TARGET=      306.000
 92030.000     26.20    613.20       .00    613.12    613.47       .27       .05       .01    600.00
   22700.0    1627.0   20564.2     508.8     698.2    4762.1     262.4     375.2      23.0    600.00
       .18      2.33      4.32      1.94      .045      .040      .042      .000    587.00    112.00
   .000218       210.      200.      205.         2         0         0       .00    306.00    418.00


*SECNO 92480.000
3280 CROSS SECTION  92480.00 EXTENDED       .42 FEET


3470 ENCROACHMENT STATIONS=       38.0     568.0  TYPE=      1  TARGET=      530.000
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELV     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


 92480.000     24.42    613.42       .00    613.33    613.56       .13       .07       .01    598.00
   22700.0    8700.8   13094.8     904.4    3748.3    3950.9     465.5     446.9      27.3    598.00
       .22      2.32      3.31      1.94      .040      .038      .040      .000    589.00     38.00
   .000128       450.      450.      450.         2         0         0       .00    530.00    568.00


*SECNO 93300.000
3280 CROSS SECTION  93300.00 EXTENDED       .45 FEET


3470 ENCROACHMENT STATIONS=      240.0     710.0  TYPE=      1  TARGET=      470.000
 93300.000     24.45    613.45       .00    613.36    613.62       .16       .05       .01    600.40
   22700.0    7623.9   14905.9     170.1    3179.1    4157.5     119.8     511.5      31.4    601.20
       .25      2.40      3.59      1.42      .040      .038      .040      .000    589.00    240.00
   .000150       360.      360.      360.         2         0         0       .00    470.00    710.00


CCHV=     .300 CEHV=     .500
*SECNO 94035.000

3470 ENCROACHMENT STATIONS=      600.0    1405.0  TYPE=      1  TARGET=     -600.000
 94035.000     24.62    613.62       .00    613.53    613.72       .10       .09       .02    600.00
   22700.0    6205.6   14008.9     485.5    5811.7    4534.8     352.2     655.9      41.4    600.00
       .33      1.41      3.09      1.38      .055      .038      .045      .000    587.00    600.00
   .000113       650.      735.      735.         2         0         0       .00    803.58   1407.58


1490 NH CARD USED
*SECNO 94900.000

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =   .55
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3470 ENCROACHMENT STATIONS=     1500.0    2224.0  TYPE=      1  TARGET=      724.000
 94900.000     26.33    613.63       .00    613.56    614.02       .39       .15       .14    600.00
   22700.0    2660.9   20039.1        .0    2021.2    3781.8        .0     790.0      52.2 100000.00
       .38      1.32      5.30       .00      .055      .040      .000      .000    587.30   1500.00
   .000371      490.      900.     1020.         2         0         0       .00    724.00   2224.00


1490 NH CARD USED
*SECNO 96100.000
1
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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


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.42


3470 ENCROACHMENT STATIONS=     1125.0    1700.0  TYPE=      1  TARGET=      575.000
 96100.000     22.71    614.21       .00    614.03    614.38       .17       .30       .07    600.00
   22700.0    3110.0   16833.8    2756.2    2073.3    4627.7    1309.5     962.0      66.2    602.80
       .48      1.50      3.64      2.10      .063      .040      .045      .000    591.50   1125.00
   .000184      715.     1220.     1375.         2         0         0       .00    575.00   1700.00


CCHV=     .100 CEHV=     .300
*SECNO 96500.000

3470 ENCROACHMENT STATIONS=      330.0     900.0  TYPE=      1  TARGET=      570.000
 96500.000     27.00    614.30       .00    614.11    614.44       .15       .06       .00    600.00
   22700.0        .0   15809.7    6890.3        .0    4525.4    3683.0    1035.5      71.4    600.00
       .52       .00      3.49      1.87      .000      .038      .045      .000    587.30    330.00
   .000138      385.      400.      390.         2         0         0       .00    570.00    900.00


*SECNO 97300.000
3280 CROSS SECTION  97300.00 EXTENDED       .45 FEET


3470 ENCROACHMENT STATIONS=         .0     800.0  TYPE=      1  TARGET=      799.999
 97300.000     25.66    614.46       .00    614.28    614.58       .12       .13       .00    611.60
   22700.0       2.4   12927.6    9770.1       5.8    3886.6    5805.8    1215.6      83.8    598.90
       .61       .40      3.33      1.68      .050      .040      .055      .000    588.80     95.93
   .000151      995.      950.      810.         1         0         0       .00    704.07    800.00


1
   31AUG93      08:30:01                                                                                    PAGE   20


                                                                                THIS RUN EXECUTED 31AUG93    08:30:06
************************************
 HEC-2 WATER SURFACE PROFILES

 Version   4.6.2;  May 1991
************************************


 ITE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST
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CASS RIVER CA

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	89500.000	.00	.00	.00	585.20	22700.00	611.67	.00	611.97	3.17	5.18	7893.64	12759.6
	89500.000	.00	.00	.00	585.20	22700.00	611.77	.00	612.07	3.10	5.15	7957.43	12888.3
	90030.000	530.00	.00	.00	585.20	22700.00	611.81	.00	612.13	2.84	4.96	7020.36	12467.8
	90030.000	530.00	.00	.00	585.20	22700.00	611.91	.00	612.23	2.79	4.93	7075.62	12588.[illegible]
	90600.000	680.00	.00	.00	585.80	22700.00	611.97	.00	612.37	3.02	5.15	4706.66	13056.0
	90600.000	680.00	.00	.00	585.80	22700.00	612.06	.00	612.46	2.99	5.13	4690.34	13121.7
	91120.000	300.00	.00	.00	585.80	22700.00	612.14	.00	612.46	2.45	4.60	5193.24	14506.9
	91120.000	300.00	.00	.00	585.80	22700.00	612.23	.00	612.55	2.43	4.59	5179.11	14574.[illegible]
	91550.000	415.00	.00	.00	589.70	22700.00	612.33	.00	612.56	1.98	3.92	5968.38	16118.5
	91550.000	415.00	.00	.00	589.70	22700.00	612.42	.00	612.65	2.03	3.93	5899.26	15923.7
*	91551.000	50.00	.00	.00	598.20	22700.00	612.09	.00	612.69	9.03	6.28	3747.12	7552.9
*	91551.000	50.00	.00	.00	598.20	22700.00	612.18	.00	612.78	9.29	6.31	3684.19	7449.1
	91552.000	8.00	.00	.00	598.20	22700.00	612.10	.00	612.69	9.02	6.28	3748.40	7556.7
	91552.000	8.00	.00	.00	598.20	22700.00	612.19	.00	612.79	9.28	6.31	3685.37	7452.9
*	91553.000	50.00	.00	.00	589.70	22700.00	612.52	.00	612.75	1.93	3.89	6027.37	16358.6
*	91553.000	50.00	.00	.00	589.70	22700.00	612.61	.00	612.85	1.98	3.89	5952.91	16151.0
*	91850.000	250.00	.00	.00	588.00	22700.00	612.44	.00	612.89	4.80	5.44	4367.35	10356.8
*	91850.000	250.00	.00	.00	588.00	22700.00	612.54	.00	612.98	4.71	5.40	4398.90	10454.7
*	91851.000	10.00	612.20	619.30	588.00	22700.00	612.36	.00	612.93	17.23	6.07	3742.04	5469.1
*	91851.000	10.00	612.20	619.30	588.00	22700.00	612.46	.00	613.03	17.30	6.05	3751.65	5458.1
	91852.000	62.00	612.20	619.30	588.00	22700.00	612.47	.00	613.04	17.31	6.05	3752.76	5456.7
	91852.000	62.00	612.20	619.30	588.00	22700.00	612.57	.00	613.13	17.38	6.03	3761.98	5444.9

1

31AUG93 08:30:01 PAGE 21

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	91853.000	10.00	.00	.00	588.00	22700.00	612.62	.00	613.06	4.64	5.37	4424.67	10535.1
*	91853.000	10.00	.00	.00	588.00	22700.00	612.72	.00	613.16	4.56	5.34	4456.76	10636.0
	91950.000	205.00	.00	.00	585.80	22700.00	612.64	.00	613.18	4.20	5.97	3956.46	11070.7
	91950.000	205.00	.00	.00	585.80	22700.00	612.74	.00	613.28	4.14	5.94	3977.59	11157.0
	92010.000	185.00	.00	.00	586.10	22700.00	612.85	.00	613.26	3.45	5.16	4403.44	12222.3
	92010.000	185.00	.00	.00	586.10	22700.00	612.95	.00	613.36	3.40	5.13	4423.62	12315.0
	92011.000	10.00	616.60	626.10	586.00	22700.00	612.84	.00	613.28	6.61	5.31	4276.81	8832.3
	92011.000	10.00	616.60	626.10	586.00	22700.00	612.94	.00	613.37	6.52	5.28	4296.54	8889.8
	92012.000	39.00	616.60	626.10	586.00	22700.00	612.86	.00	613.30	6.60	5.30	4279.08	8838.9
	92012.000	39.00	616.60	626.10	586.00	22700.00	612.96	.00	613.39	6.51	5.28	4298.77	8896.1
	92013.000	10.00	.00	.00	586.10	22700.00	612.90	.00	613.31	3.42	5.14	4413.13	12267.7
	92013.000	10.00	.00	.00	586.10	22700.00	612.99	.00	613.40	3.37	5.12	4433.18	12360.2

92030.000	200.00	.00	.00	587.00	22700.00	613.12	.00	613.38	2.14	4.26	5880.65	15520.0
92030.000	200.00	.00	.00	587.00	22700.00	613.20	.00	613.47	2.18	4.32	5722.67	15364.9
92480.000	450.00	.00	.00	589.00	22700.00	613.33	.00	613.46	1.30	3.33	8137.37	19909.8
92480.000	450.00	.00	.00	589.00	22700.00	613.42	.00	613.56	1.28	3.31	8164.70	20067.1
93300.000	360.00	.00	.00	589.00	22700.00	613.36	.00	613.52	1.53	3.61	7412.09	18366.2
93300.000	360.00	.00	.00	589.00	22700.00	613.45	.00	613.62	1.50	3.59	7456.44	18538.5
94035.000	735.00	.00	.00	589.00	22700.00	613.53	.00	613.63	1.15	3.11	10624.89	21136.7
94035.000	735.00	.00	.00	589.00	22700.00	613.62	.00	613.72	1.13	3.09	10698.69	21350.3
* 94900.000	900.00	.00	.00	587.30	22700.00	613.56	.00	613.88	3.03	4.95	8084.63	13043.1
* 94900.000	900.00	.00	.00	587.30	22700.00	613.63	.00	614.02	3.71	5.30	5863.02	11779.3
96100.000	1220.00	.00	.00	591.50	22700.00	614.03	.00	614.20	1.92	3.69	7902.27	16400.6
* 96100.000	1220.00	.00	.00	591.50	22700.00	614.21	.00	614.38	1.84	3.64	8010.54	16727.3
96500.000	400.00	.00	.00	587.30	22700.00	614.11	.00	614.26	1.43	3.54	8106.27	18957.9
96500.000	400.00	.00	.00	587.30	22700.00	614.30	.00	614.44	1.38	3.49	8208.38	19288.7
97300.000	950.00	.00	.00	588.80	22700.00	614.28	.00	614.40	1.57	3.37	9571.76	18139.1
97300.000	950.00	.00	.00	588.80	22700.00	614.46	.00	614.58	1.51	3.33	9698.16	18494.9

1

CASS RIVER CA

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	89500.000	22700.00	611.67	.00	.00	.19	623.82	.00
	89500.000	22700.00	611.77	.10	.00	.10	624.05	.00
	90030.000	22700.00	611.81	.00	.15	.00	557.85	530.00
	90030.000	22700.00	611.91	.10	.14	.10	558.49	530.00
	90600.000	22700.00	611.97	.00	.16	.00	265.00	680.00
	90600.000	22700.00	612.06	.09	.15	.09	245.00	680.00
	91120.000	22700.00	612.14	.00	.17	.00	286.00	300.00
	91120.000	22700.00	612.23	.09	.17	.09	259.00	300.00
	91550.000	22700.00	612.33	.00	.18	.00	305.61	415.00
	91550.000	22700.00	612.42	.09	.18	.09	273.00	415.00
*	91551.000	22700.00	612.09	.00	-.23	.00	304.32	50.00
*	91551.000	22700.00	612.18	.09	-.24	.09	273.00	50.00
	91552.000	22700.00	612.10	.00	.01	.00	304.34	8.00
	91552.000	22700.00	612.19	.09	.01	.09	273.00	8.00
*	91553.000	22700.00	612.52	.00	.42	.00	306.68	50.00
*	91553.000	22700.00	612.61	.10	.43	.10	273.00	50.00
*	91850.000	22700.00	612.44	.00	-.08	.00	311.73	250.00
*	91850.000	22700.00	612.54	.10	-.08	.10	312.03	250.00
*	91851.000	22700.00	612.36	.00	-.08	.00	236.03	10.00
*	91851.000	22700.00	612.46	.10	-.08	.10	240.72	10.00
	91852.000	22700.00	612.47	.00	.11	.00	[illegible]	42.00

91852.000	22700.00	612.57	.10	.11	.10	245.98	62.00
* 91853.000	22700.00	612.62	.00	.15	.00	312.27	10.00
* 91853.000	22700.00	612.72	.10	.15	.10	312.57	10.00
91950.000	22700.00	612.64	.00	.02	.00	210.00	205.00
91950.000	22700.00	612.74	.10	.02	.10	210.00	205.00
92010.000	22700.00	612.85	.00	.21	.00	206.50	185.00
92010.000	22700.00	612.95	.10	.21	.10	206.50	185.00
92011.000	22700.00	612.84	.00	-.01	.00	201.50	10.00
92011.000	22700.00	612.94	.10	-.01	.10	201.50	10.00
92012.000	22700.00	612.86	.00	.03	.00	201.50	39.00
92012.000	22700.00	612.96	.10	.03	.10	201.50	39.00

1

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
92013.000	22700.00	612.90	.00	.03	.00	206.50	10.00
92013.000	22700.00	612.99	.10	.03	.10	206.50	10.00
92030.000	22700.00	613.12	.00	.22	.00	359.18	200.00
92030.000	22700.00	613.20	.08	.20	.08	306.00	200.00
92480.000	22700.00	613.33	.00	.21	.00	561.10	450.00
92480.000	22700.00	613.42	.09	.22	.09	530.00	450.00
93300.000	22700.00	613.36	.00	.03	.00	470.00	360.00
93300.000	22700.00	613.45	.09	.03	.09	470.00	360.00
94035.000	22700.00	613.53	.00	.17	.00	803.23	735.00
94035.000	22700.00	613.62	.09	.17	.09	803.56	735.00
* 94900.000	22700.00	613.56	.00	.03	.00	1485.50	900.00
* 94900.000	22700.00	613.63	.07	.01	.07	724.00	900.00
96100.000	22700.00	614.03	.00	.46	.00	575.00	1220.00
* 96100.000	22700.00	614.21	.19	.58	.19	575.00	1220.00
96500.000	22700.00	614.11	.00	.08	.00	570.00	400.00
96500.000	22700.00	614.30	.19	.08	.19	570.00	400.00
97300.000	22700.00	614.28	.00	.17	.00	703.82	950.00
97300.000	22700.00	614.46	.18	.16	.18	704.07	950.00

1

SUMMARY OF ERRORS AND SPECIAL NOTES

WARNING SECNO= 91551.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91551.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91553.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91553.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

[illegible] CONVEYANCE CHG OF OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91850.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91851.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91851.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 91853.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 91853.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

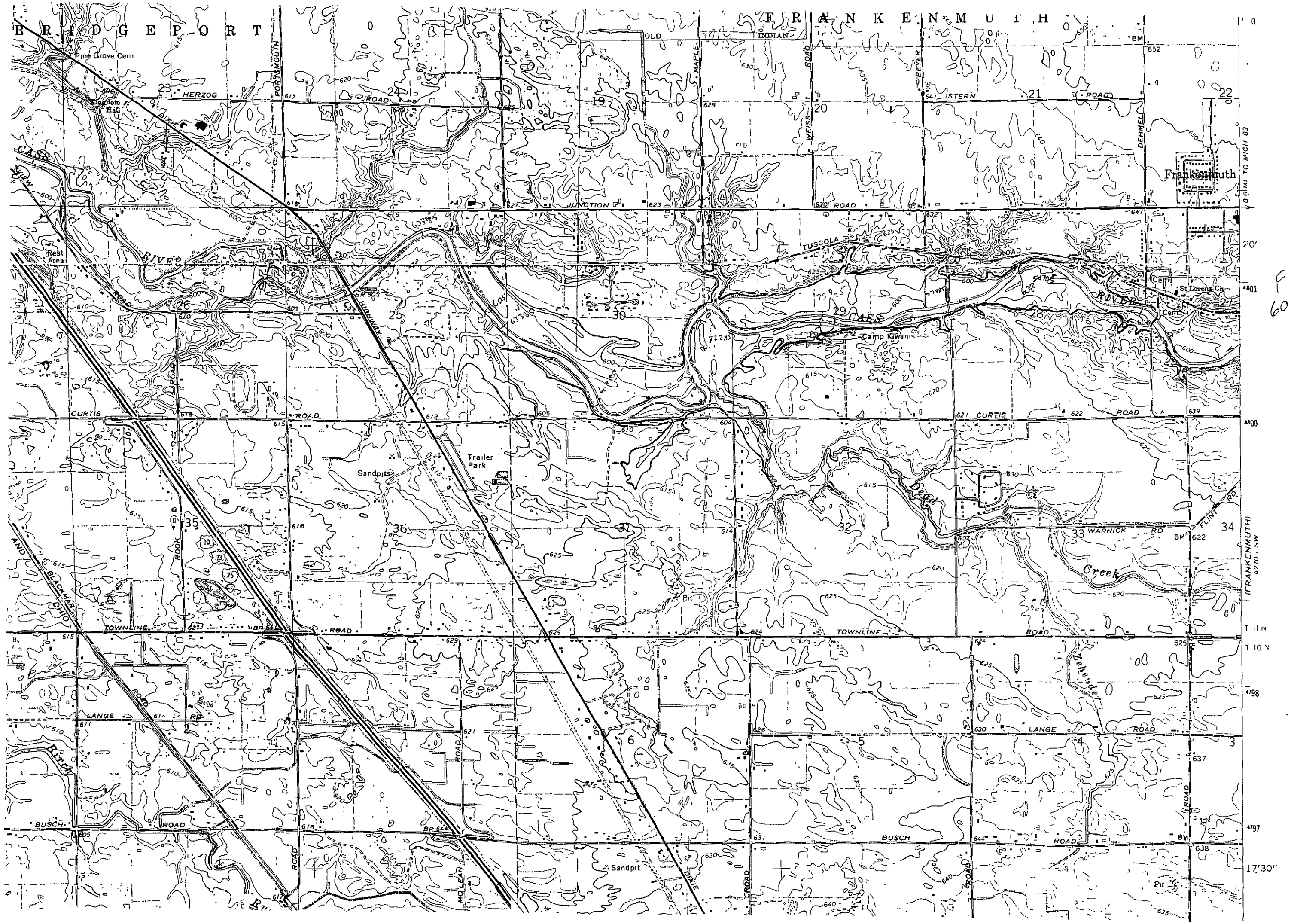
WARNING SECNO= 94900.000 PROFILE= 1 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO= 94900.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO= 96100.000 PROFILE= 2 CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

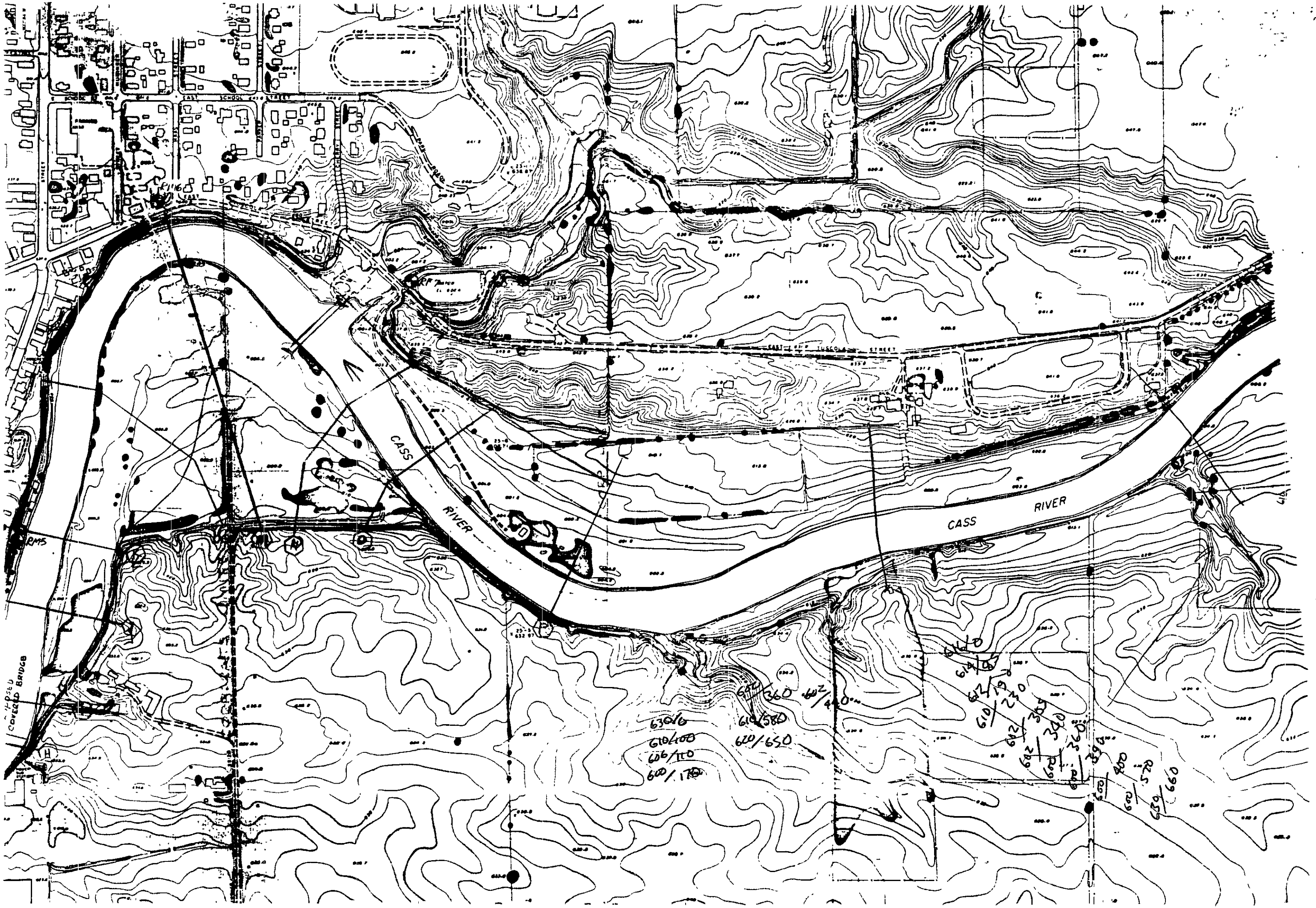
1

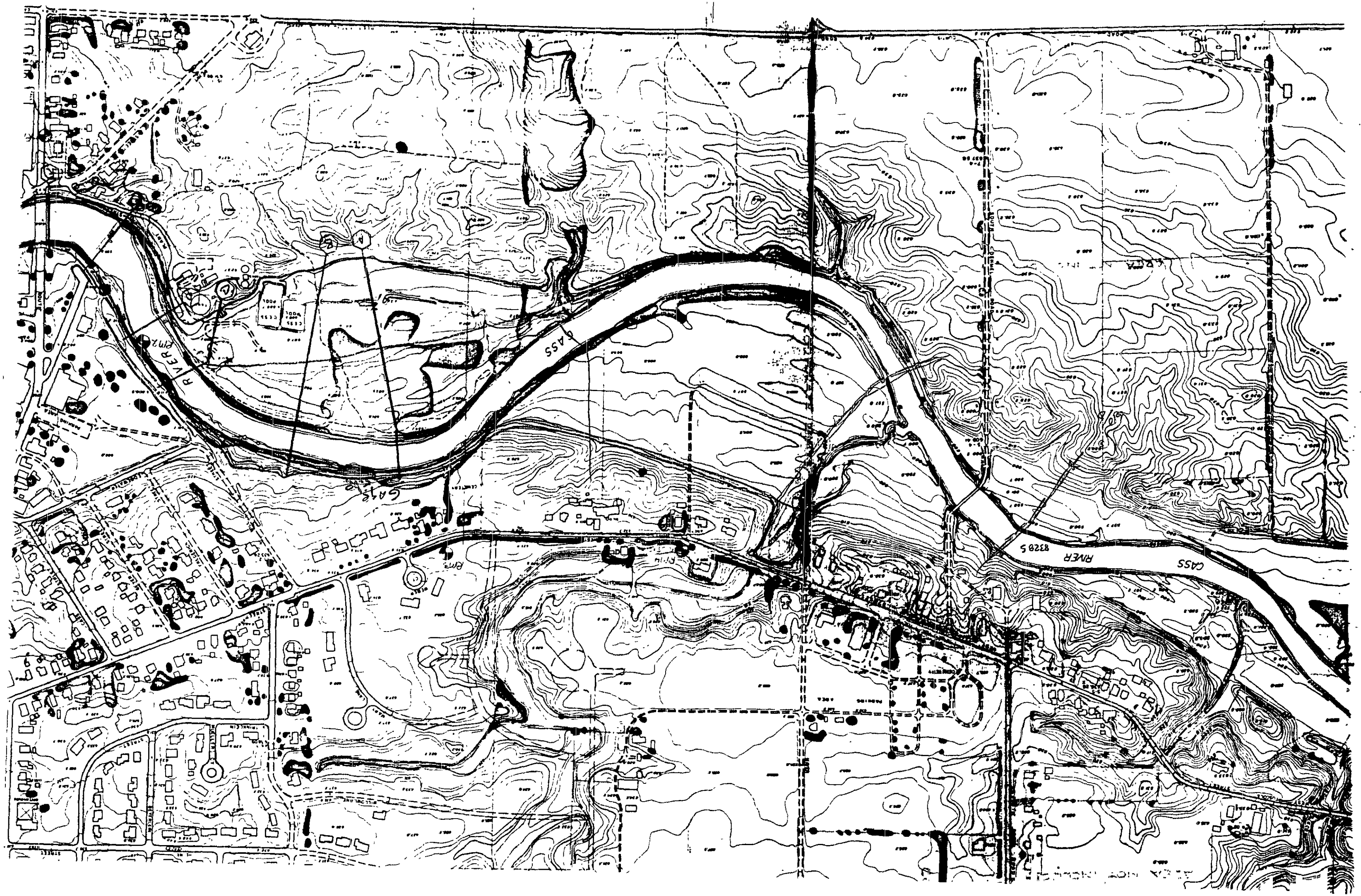
FLOODWAY DATA, CASS RIVER CA
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
89500.000	624.	7957.	2.9	611.8	611.7	.1
90030.000	558.	7076.	3.2	611.9	611.8	.1
90600.000	245.	4690.	4.8	612.1	612.0	.1
91120.000	259.	5179.	4.4	612.2	612.1	.1
91550.000	273.	5899.	3.8	612.4	612.3	.1
91551.000	273.	3684.	6.2	612.2	612.1	.1
91552.000	273.	3685.	6.2	612.2	612.1	.1
91553.000	273.	5953.	3.8	612.6	612.5	.1
91850.000	312.	4399.	5.2	612.5	612.4	.1
91851.000	312.	3752.	6.1	612.5	612.4	.1
91852.000	312.	3762.	6.0	612.6	612.5	.1
91853.000	313.	4457.	5.1	612.7	612.6	.1
91950.000	210.	3978.	5.7	612.7	612.6	.1
92010.000	207.	4424.	5.1	613.0	612.9	.1
92011.000	207.	4297.	5.3	612.9	612.8	.1
92012.000	207.	4299.	5.3	613.0	612.9	.1
92013.000	207.	4433.	5.1	613.0	612.9	.1
92030.000	306.	5723.	4.0	613.2	613.1	.1
92480.000	530.	8165.	2.8	613.4	613.3	.1
93300.000	470.	7456.	3.0	613.5	613.4	.1
94035.000	804.	10699.	2.1	613.6	613.5	.1
94900.000	724.	5803.	3.9	613.7	613.6	.1
96100.000	575.	8011.	2.8	614.2	614.0	.2
96500.000	570.	8208.	2.8	614.3	614.1	.2
97300.000	704.	9698.	2.3	614.5	614.3	.2


BRIDGEPORT
FRANKENMUTH
Pine Grove Cem
Kingdom Hall
HERZOG ROAD
PORTSMOUTH
OLD INDIAN
MAPLE
WEISS ROAD
BEYER
STERN ROAD
DEHMEL
Frankenmuth
JUNCTION ROAD
TUSCOLA ROAD
Rest Area
RIVER
CASS
Camp Kiwanis
St Lorenz Ch
Cem
CURTIS ROAD
Trailer Park
Sandpits
Dead
Creek
WARNICK RD
FLINT RD
TOWNLINE ROAD
Zehender
LANGE ROAD
BUSCH ROAD
Birch
Sandpit
Pit
MOLEAN
DIXIE
BLACKMAR
OHIO
ROOK
0.6 MI TO MICH 83
(FRANKENMUTH) 4270 I SW
T 11 N
T 10 N
17'30"

Fi
605 ±


EAST SCHOOL STREET
EAST TUSCOLA STREET
CASS RIVER
CASS RIVER
COVERED BRIDGE
1" = 400'


CASS
RIVER
CASS
RIVER
8328 S

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: FRANKENMUTH, CITY

3) WATERCOURSE: CASS RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CASS RIVER

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
89500.000	605.70	0.0	606.05	610.38	1666.42	11902.05	31.54	-410.00	410.00	874.00	1008.00	1080.00
89500.000	607.25	0.0	607.73	613.87	3229.47	15600.99	69.56	-410.00	410.00	874.00	1008.00	1080.00
89500.000	607.55	0.0	608.11	614.55	3769.78	17147.00	83.24	-410.00	410.00	874.00	1008.00	1080.00
89500.000	608.50	0.0	609.21	616.69	5336.80	20535.94	127.25	-410.00	410.00	874.00	1008.00	1080.00
90030.000	605.97	0.0	606.26	460.00	845.33	12616.17	138.51	-540.00	540.00	870.00	1032.00	1125.00
90030.000	607.58	0.0	608.01	511.72	1653.79	16965.30	280.92	-540.00	540.00	870.00	1032.00	1125.00
90030.000	607.92	0.0	608.43	536.65	1958.24	18708.17	333.60	-540.00	540.00	870.00	1032.00	1125.00
90030.000	608.94	0.0	609.59	541.25	2874.95	22633.20	491.85	-540.00	540.00	870.00	1032.00	1125.00
90600.000	606.22	0.0	606.49	214.06	39.21	13517.56	43.24	0.0	0.0	240.00	425.00	0.0
90600.000	607.88	0.0	608.31	229.83	99.13	18704.24	96.65	0.0	0.0	240.00	425.00	0.0
90600.000	608.26	0.0	608.77	232.84	124.63	20757.56	117.81	0.0	0.0	240.00	425.00	0.0
90600.000	609.35	0.0	610.04	240.45	211.94	25603.46	184.61	0.0	0.0	240.00	425.00	0.0
91120.000	606.35	0.0	606.57	245.03	58.83	13494.55	46.63	0.0	0.0	580.00	792.00	0.0
91120.000	608.08	0.0	608.43	254.04	131.45	18664.36	104.20	0.0	0.0	580.00	792.00	0.0
91120.000	608.51	0.0	608.91	256.23	160.89	20711.59	127.54	0.0	0.0	580.00	792.00	0.0
91120.000	609.67	0.0	610.22	262.31	253.25	25545.99	200.76	0.0	0.0	580.00	792.00	0.0
91550.000	606.51	0.0	606.67	270.55	0.0	13502.60	97.40	0.0	0.0	41.00	291.00	0.0
91550.000	608.32	0.0	608.56	283.40	2.84	18695.45	201.72	0.0	0.0	41.00	291.00	0.0
91550.000	608.77	0.0	609.07	285.94	6.12	20747.54	246.35	0.0	0.0	41.00	291.00	0.0
91550.000	610.02	0.0	610.41	292.86	25.12	25597.11	377.76	0.0	0.0	41.00	291.00	0.0
91551.000	606.15	0.0	606.86	269.68	0.0	13309.34	290.66	0.0	0.0	41.00	291.00	0.0
91551.000	607.89	0.0	608.79	281.06	3.39	18395.52	501.09	0.0	0.0	41.00	291.00	0.0
91551.000	608.30	0.0	609.31	283.33	8.19	20400.37	591.46	0.0	0.0	41.00	291.00	0.0
91551.000	609.48	0.0	610.70	289.85	39.07	25119.13	841.81	0.0	0.0	41.00	291.00	0.0
91552.000	606.17	0.0	606.87	269.70	0.0	13309.07	290.93	0.0	0.0	41.00	291.00	0.0
91552.000	607.91	0.0	608.81	281.10	3.44	18394.89	501.67	0.0	0.0	41.00	291.00	0.0
91552.000	608.32	0.0	609.33	283.41	8.36	20399.14	592.52	0.0	0.0	41.00	291.00	0.0
91552.000	609.50	0.0	610.72	289.92	39.49	25117.66	842.87	0.0	0.0	41.00	291.00	0.0
91553.000	606.80	0.0	606.95	271.26	0.0	13496.31	103.69	0.0	0.0	41.00	291.00	0.0
91553.000	608.66	0.0	608.90	285.31	4.75	18678.48	216.77	0.0	0.0	41.00	291.00	0.0
91553.000	609.16	0.0	609.44	288.07	9.52	20725.70	264.79	0.0	0.0	41.00	291.00	0.0
91553.000	610.47	0.0	610.84	295.36	34.29	25562.70	403.02	0.0	0.0	41.00	291.00	0.0

SECND	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
91850.000	606.73	0.0	607.09	215.10	0.0	13600.00	0.0	0.0	0.0	102.00	338.00	0.0
91850.000	608.55	0.0	609.09	220.41	0.0	18900.00	0.0	0.0	0.0	102.00	338.00	0.0
91850.000	609.03	0.0	609.65	221.31	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91850.000	610.30	0.0	611.11	225.52	0.0	26000.00	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	606.72	0.0	607.10	207.31	0.0	13600.01	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	608.53	0.0	609.11	212.65	0.0	18900.01	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	609.01	0.0	609.68	214.06	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91851.000	610.27	0.0	611.15	217.78	0.0	26000.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	606.78	0.0	607.16	207.45	0.0	13600.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	608.62	0.0	609.19	212.91	0.0	18900.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	609.11	0.0	609.77	214.36	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91852.000	610.42	0.0	611.28	218.21	0.0	26000.01	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	606.82	0.0	607.17	215.36	0.0	13600.00	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	608.68	0.0	609.21	220.78	0.0	18900.00	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	609.18	0.0	609.78	222.23	0.0	21000.00	0.0	0.0	0.0	102.00	338.00	0.0
91853.000	610.51	0.0	611.30	226.13	0.0	26000.00	0.0	0.0	0.0	102.00	338.00	0.0
91950.000	606.91	0.0	607.27	181.07	5.30	13484.39	110.32	-150.00	150.00	158.00	325.00	360.00
91950.000	608.78	0.0	609.34	183.45	10.83	18689.59	199.60	-150.00	150.00	158.00	325.00	360.00
91950.000	609.28	0.0	609.94	184.09	13.15	20751.23	235.62	-150.00	150.00	158.00	325.00	360.00
91950.000	610.62	0.0	611.50	206.35	20.90	25630.98	348.13	-150.00	150.00	158.00	325.00	360.00
92010.000	607.07	0.0	607.35	199.13	0.0	13600.00	0.0	0.0	0.0	160.00	366.50	0.0
92010.000	609.03	0.0	609.45	202.31	0.0	18900.00	0.0	0.0	0.0	160.00	366.50	0.0
92010.000	609.57	0.0	610.06	203.19	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92010.000	611.00	0.0	611.65	205.52	0.0	25999.98	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	607.07	0.0	607.36	194.12	0.0	13600.00	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	609.01	0.0	609.46	197.30	0.0	18900.00	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	609.56	0.0	610.08	198.17	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92011.000	610.98	0.0	611.67	200.48	0.0	26000.01	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	607.09	0.0	607.38	194.14	0.0	13600.00	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	609.04	0.0	609.49	197.32	0.0	18900.00	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	609.59	0.0	610.11	198.21	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92012.000	611.02	0.0	611.71	200.55	0.0	26000.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	607.11	0.0	607.39	199.17	0.0	13600.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	609.08	0.0	609.50	202.40	0.0	18900.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	609.63	0.0	610.12	203.30	0.0	21000.00	0.0	0.0	0.0	160.00	366.50	0.0
92013.000	611.08	0.0	611.72	205.65	0.0	25999.98	0.0	0.0	0.0	160.00	366.50	0.0
92030.000	607.25	0.0	607.45	309.09	558.36	12935.79	105.85	0.0	0.0	173.00	386.00	0.0
92030.000	609.29	0.0	609.59	323.15	1079.69	17590.55	229.77	0.0	0.0	173.00	386.00	0.0
92030.000	609.88	0.0	610.22	327.20	1292.13	19424.19	283.68	0.0	0.0	173.00	386.00	0.0
92030.000	611.42	0.0	611.84	342.20	1896.76	23626.38	476.86	0.0	0.0	173.00	386.00	0.0
92480.000	607.44	0.0	607.57	511.53	3767.63	9501.37	331.00	0.0	0.0	332.00	522.00	0.0
92480.000	609.57	0.0	609.73	525.23	6030.49	12310.52	558.98	0.0	0.0	332.00	522.00	0.0
92480.000	610.20	0.0	610.38	528.80	6916.27	13428.39	655.33	0.0	0.0	332.00	522.00	0.0
92480.000	611.81	0.0	612.03	535.25	9158.48	15910.08	931.43	0.0	0.0	332.00	522.00	0.0

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
93300.000	607.49	0.0	607.65	470.00	3110.60	10407.25	82.15	470.00	240.00	500.00	700.00	710.00
93300.000	609.63	0.0	609.83	470.00	5233.34	13536.70	129.96	470.00	240.00	500.00	700.00	710.00
93300.000	610.26	0.0	610.48	470.00	6063.07	14789.10	147.83	470.00	240.00	500.00	700.00	710.00
93300.000	611.88	0.0	612.14	470.00	8185.79	17623.54	190.66	470.00	240.00	500.00	700.00	710.00
94035.000	607.68	0.0	607.81	781.19	3008.23	10466.74	125.04	-600.00	600.00	1130.00	1352.00	1405.00
94035.000	609.86	0.0	610.00	789.45	5433.35	13223.44	243.22	-600.00	600.00	1130.00	1352.00	1405.00
94035.000	610.51	0.0	610.67	791.91	6371.04	14326.90	302.06	-600.00	600.00	1130.00	1352.00	1405.00
94035.000	612.16	0.0	612.33	798.10	8770.76	16755.24	473.99	-600.00	600.00	1130.00	1352.00	1405.00
94900.000	607.81	0.0	608.17	205.17	129.68	13458.15	12.18	0.0	0.0	2050.00	2224.00	0.0
94900.000	609.92	0.0	610.45	294.02	347.74	18510.11	42.15	0.0	0.0	2050.00	2224.00	0.0
94900.000	610.56	0.0	611.16	1437.18	486.85	20455.96	57.19	0.0	0.0	2050.00	2224.00	0.0
94900.000	612.20	0.0	612.82	1483.20	2461.10	23437.11	101.78	0.0	0.0	2050.00	2224.00	0.0
96100.000	608.47	0.0	608.65	563.55	1067.69	11604.39	927.91	575.00	1125.00	1331.00	1568.00	1700.00
96100.000	610.81	0.0	611.01	575.00	2022.20	15113.96	1763.83	575.00	1125.00	1331.00	1568.00	1700.00
96100.000	611.53	0.0	611.75	575.00	2403.29	16491.11	2105.60	575.00	1125.00	1331.00	1568.00	1700.00
96100.000	613.16	0.0	613.41	575.00	3352.08	19688.03	2959.87	575.00	1125.00	1331.00	1568.00	1700.00
96500.000	608.59	0.0	608.73	527.33	0.0	11331.84	2268.16	570.00	330.00	330.00	525.00	900.00
96500.000	610.92	0.0	611.10	556.53	0.0	14566.49	4333.50	570.00	330.00	330.00	525.00	900.00
96500.000	611.66	0.0	611.85	565.71	0.00	15811.27	5188.72	570.00	330.00	330.00	525.00	900.00
96500.000	613.29	0.0	613.52	570.00	0.00	18629.48	7370.50	570.00	330.00	330.00	525.00	900.00
97300.000	608.79	0.0	608.92	699.34	0.0	9599.98	4000.02	800.00	0.00	100.00	286.00	800.00
97300.000	611.15	0.0	611.30	699.89	0.0	12009.32	6890.67	800.00	0.00	100.00	286.00	800.00
97300.000	611.90	0.0	612.05	700.41	0.00	12969.14	8030.86	800.00	0.00	100.00	286.00	800.00
97300.000	613.55	0.0	613.73	702.79	1.08	15198.94	10799.96	800.00	0.00	100.00	286.00	800.00

CASS RIVER

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	89500.000	89500.00	0.0	0.0	585.20	13600.00	605.70	0.0	606.05	4.51	5.09	4210.89	6403.75
	89500.000	89500.00	0.0	0.0	585.20	18900.00	607.25	0.0	607.73	5.84	6.12	5159.71	7823.10
A	89500.000	89500.00	0.0	0.0	585.20	21000.00	607.55	0.0	608.11	6.69	6.63	5344.01	8117.71
	89500.000	89500.00	0.0	0.0	585.20	26000.00	608.50	0.0	609.21	8.18	7.56	5928.82	9091.05
	90030.000	530.00	0.0	0.0	585.20	13600.00	605.97	0.0	606.26	3.49	4.52	3926.43	7285.00
	90030.000	530.00	0.0	0.0	585.20	18900.00	607.58	0.0	608.01	4.68	5.56	4707.80	8735.61
B	90030.000	530.00	0.0	0.0	585.20	21000.00	607.92	0.0	608.43	5.36	6.02	4890.05	9072.39
	90030.000	530.00	0.0	0.0	585.20	26000.00	608.94	0.0	609.59	6.60	6.91	5440.38	10122.55
	90600.000	680.00	0.0	0.0	585.80	13600.00	606.22	0.0	606.49	2.94	4.19	3311.68	7938.19
	90600.000	680.00	0.0	0.0	585.80	18900.00	607.88	0.0	608.31	4.15	5.30	3680.24	9278.38
C	90600.000	680.00	0.0	0.0	585.80	21000.00	608.26	0.0	608.77	4.78	5.76	3769.31	9603.74
	90600.000	680.00	0.0	0.0	585.80	26000.00	609.35	0.0	610.04	6.07	6.73	4026.81	10554.19
	91120.000	300.00	0.0	0.0	585.80	13600.00	606.35	0.0	606.57	2.46	3.78	3674.72	8678.16
	91120.000	300.00	0.0	0.0	585.80	18900.00	608.08	0.0	608.43	3.39	4.74	4106.86	10264.90
D	91120.000	300.00	0.0	0.0	585.80	21000.00	608.51	0.0	608.91	3.87	5.14	4214.26	10669.32
	91120.000	300.00	0.0	0.0	585.80	26000.00	609.67	0.0	610.22	4.83	5.98	4517.39	11831.11
	91550.000	415.00	0.0	0.0	589.70	13600.00	606.51	0.0	606.67	1.97	3.21	4288.10	9677.94
	91550.000	415.00	0.0	0.0	589.70	18900.00	608.32	0.0	608.56	2.70	4.02	4787.51	11505.74
E	91550.000	415.00	0.0	0.0	589.70	21000.00	608.77	0.0	609.07	3.06	4.35	4918.03	11996.49
	91550.000	415.00	0.0	0.0	589.70	26000.00	610.02	0.0	610.41	3.78	5.04	5279.53	13381.27
	91551.000	50.00	0.0	0.0	598.20	13600.00	606.15	0.0	606.86	22.19	6.78	2042.35	2887.32
	91551.000	50.00	0.0	0.0	598.20	18900.00	607.89	0.0	608.79	21.85	7.67	2518.37	4043.59
	91551.000	50.00	0.0	0.0	598.20	21000.00	608.30	0.0	609.31	23.37	8.16	2634.22	4344.38
	91551.000	50.00	0.0	0.0	598.20	26000.00	609.48	0.0	610.70	24.46	8.99	2971.11	5256.88
	91552.000	8.00	0.0	0.0	598.20	13600.00	606.17	0.0	606.87	22.11	6.77	2044.46	2892.11
	91552.000	8.00	0.0	0.0	598.20	18900.00	607.91	0.0	608.81	21.79	7.66	2520.44	4048.88
	91552.000	8.00	0.0	0.0	598.20	21000.00	608.32	0.0	609.33	23.26	8.15	2637.89	4354.01
	91552.000	8.00	0.0	0.0	598.20	26000.00	609.50	0.0	610.72	24.37	8.98	2974.73	5266.99
	91553.000	50.00	0.0	0.0	589.70	13600.00	606.80	0.0	606.95	1.87	3.16	4365.86	9952.62
	91553.000	50.00	0.0	0.0	589.70	18900.00	608.66	0.0	608.90	2.53	3.94	4885.52	11873.78
	91553.000	50.00	0.0	0.0	589.70	21000.00	609.16	0.0	609.44	2.86	4.26	5028.66	12416.34
	91553.000	50.00	0.0	0.0	589.70	26000.00	610.47	0.0	610.84	3.50	4.92	5412.04	13898.05
	91850.000	250.00	0.0	0.0	588.00	13600.00	606.73	0.0	607.09	5.62	4.83	2817.15	5734.57
	91850.000	250.00	0.0	0.0	588.00	18900.00	608.55	0.0	609.09	7.24	5.88	3214.46	7025.58
F	91850.000	250.00	0.0	0.0	588.00	21000.00	609.03	0.0	609.65	8.09	6.32	3320.69	7384.47
	91850.000	250.00	0.0	0.0	588.00	26000.00	610.30	0.0	611.11	9.64	7.21	3605.16	8372.45
	91851.000	10.00	612.20	621.20	588.00	13600.00	606.72	0.0	607.10	9.77	5.00	2722.36	4351.62
	91851.000	10.00	612.20	621.20	588.00	18900.00	608.53	0.0	609.11	13.19	6.09	3102.37	5204.20
	91851.000	10.00	612.20	621.20	588.00	21000.00	609.01	0.0	609.68	14.91	6.55	3204.16	5437.91
	91851.000	10.00	612.20	621.20	588.00	26000.00	610.27	0.0	611.15	21.38	7.52	3459.29	5622.95
	91852.000	62.00	612.20	621.20	588.00	13600.00	606.78	0.0	607.16	9.67	4.98	2732.29	4373.46
	91852.000	62.00	612.20	621.20	588.00	18900.00	608.62	0.0	609.19	12.97	6.06	3121.29	5247.48
	91852.000	62.00	612.20	621.20	588.00	21000.00	609.11	0.0	609.77	14.64	6.51	3225.83	5437.95
	91852.000	62.00	612.20	621.20	588.00	26000.00	610.42	0.0	611.28	21.43	7.46	3485.27	5616.93

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	91853.000	10.00	0.0	0.0	588.00	13600.00	606.82	0.0	607.17	5.51	4.79	2836.42	5795.23
	91853.000	10.00	0.0	0.0	588.00	18900.00	608.68	0.0	609.21	7.05	5.83	3241.96	7117.93
	91853.000	10.00	0.0	0.0	588.00	21000.00	609.18	0.0	609.78	7.85	6.26	3352.49	7492.97
	91853.000	10.00	0.0	0.0	588.00	26000.00	610.51	0.0	611.30	9.27	7.12	3652.47	8540.46
	91950.000	205.00	0.0	0.0	585.80	13600.00	606.91	0.0	607.27	4.15	4.86	2842.67	6678.26
G	91950.000	205.00	0.0	0.0	585.80	18900.00	608.78	0.0	609.34	5.58	6.06	3183.59	7999.77
	91950.000	205.00	0.0	0.0	585.80	21000.00	609.28	0.0	609.94	6.29	6.55	3276.36	8373.41
	91950.000	205.00	0.0	0.0	585.80	26000.00	610.62	0.0	611.50	7.65	7.55	3536.63	9403.18
	92010.000	185.00	0.0	0.0	586.10	13600.00	607.07	0.0	607.35	3.30	4.21	3227.46	7483.75
H	92010.000	185.00	0.0	0.0	586.10	18900.00	609.03	0.0	609.45	4.46	5.22	3619.19	8950.85
	92010.000	185.00	0.0	0.0	586.10	21000.00	609.57	0.0	610.06	5.01	5.63	3729.38	9378.86
	92010.000	185.00	0.0	0.0	586.10	26000.00	611.00	0.0	611.65	6.08	6.47	4021.05	10542.64
	92011.000	10.00	616.60	626.10	586.00	13600.00	607.07	0.0	607.36	5.67	4.34	3130.08	5711.48
I	92011.000	10.00	616.60	626.10	586.00	18900.00	609.01	0.0	609.46	7.93	5.38	3511.66	6710.44
	92011.000	10.00	616.60	626.10	586.00	21000.00	609.56	0.0	610.08	9.02	5.81	3617.01	6992.41
	92011.000	10.00	616.60	626.10	586.00	26000.00	610.98	0.0	611.67	11.22	6.67	3900.32	7762.91
	92012.000	39.00	616.60	626.10	586.00	13600.00	607.09	0.0	607.38	5.66	4.34	3132.28	5717.12
J	92012.000	39.00	616.60	626.10	586.00	18900.00	609.04	0.0	609.49	7.91	5.38	3514.62	6718.33
	92012.000	39.00	616.60	626.10	586.00	21000.00	609.59	0.0	610.11	8.98	5.80	3622.48	7007.12
	92012.000	39.00	616.60	626.10	586.00	26000.00	611.02	0.0	611.71	11.15	6.65	3908.39	7785.12
	92013.000	10.00	0.0	0.0	586.10	13600.00	607.11	0.0	607.39	3.28	4.21	3233.10	7504.25
K	92013.000	10.00	0.0	0.0	586.10	18900.00	609.08	0.0	609.50	4.42	5.21	3630.25	8993.52
	92013.000	10.00	0.0	0.0	586.10	21000.00	609.63	0.0	610.12	4.96	5.61	3742.37	9429.73
	92013.000	10.00	0.0	0.0	586.10	26000.00	611.08	0.0	611.72	5.00	6.44	4037.73	10610.49
	92030.000	200.00	0.0	0.0	587.00	13600.00	607.25	0.0	607.45	2.42	3.70	3932.34	8734.14
I	92030.000	200.00	0.0	0.0	587.00	18900.00	609.29	0.0	609.59	3.03	4.48	4579.67	10859.40
	92030.000	200.00	0.0	0.0	587.00	21000.00	609.88	0.0	610.22	3.33	4.79	4771.48	11515.35
	92030.000	200.00	0.0	0.0	587.00	26000.00	611.42	0.0	611.84	3.80	5.39	5285.20	13338.85
	92480.000	450.00	0.0	0.0	589.00	13600.00	607.44	0.0	607.57	1.80	3.24	5139.70	10131.79
J	92480.000	450.00	0.0	0.0	589.00	18900.00	609.57	0.0	609.73	1.97	3.69	6244.92	13480.68
	92480.000	450.00	0.0	0.0	589.00	21000.00	610.20	0.0	610.38	2.08	3.88	6577.14	14561.90
	92480.000	450.00	0.0	0.0	589.00	26000.00	611.81	0.0	612.03	2.20	4.22	7435.86	17530.78
	93300.000	360.00	0.0	0.0	589.00	13600.00	607.49	0.0	607.65	2.25	3.51	4659.41	9067.48
K	93300.000	360.00	0.0	0.0	589.00	18900.00	609.63	0.0	609.83	2.44	3.99	5658.54	12110.36
	93300.000	360.00	0.0	0.0	589.00	21000.00	610.26	0.0	610.48	2.57	4.20	5955.98	13091.82
	93300.000	360.00	0.0	0.0	589.00	26000.00	611.88	0.0	612.14	2.73	4.59	6714.79	15745.18
	94035.000	735.00	0.0	0.0	589.00	13600.00	607.68	0.0	607.81	1.98	3.25	5991.76	9656.03
L	94035.000	735.00	0.0	0.0	589.00	18900.00	609.86	0.0	610.00	1.99	3.58	7698.91	13408.75
	94035.000	735.00	0.0	0.0	589.00	21000.00	610.51	0.0	610.67	2.05	3.73	8215.50	14661.57
	94035.000	735.00	0.0	0.0	589.00	26000.00	612.16	0.0	612.33	2.07	3.98	9528.54	18067.01
	94900.000	900.00	0.0	0.0	587.30	13600.00	607.81	0.0	608.17	4.41	4.86	2877.64	6477.62
M	94900.000	900.00	0.0	0.0	587.30	18900.00	609.92	0.0	610.45	5.50	5.90	3398.40	8059.55
	94900.000	900.00	0.0	0.0	587.30	21000.00	610.56	0.0	611.16	5.98	6.30	3659.56	8584.00
	94900.000	900.00	0.0	0.0	587.30	26000.00	612.20	0.0	612.82	5.93	6.53	6067.39	10679.11

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	ICK*S	VCH	AREA	.01K
	96100.000	1220.00	0.0	0.0	591.50	13600.00	608.47	0.0	608.65	2.79	3.55	4718.06	8137.24
	96100.000	1220.00	0.0	0.0	591.50	18900.00	610.81	0.0	611.01	2.81	3.96	6050.39	11266.50
P	96100.000	1220.00	0.0	0.0	591.50	21000.00	611.53	0.0	611.75	2.89	4.13	6469.44	12350.55
	96100.000	1220.00	0.0	0.0	591.50	26000.00	613.16	0.0	613.41	3.03	4.50	7403.17	14931.36
	96500.000	400.00	0.0	0.0	587.30	13600.00	608.59	0.0	608.73	1.76	3.32	5026.85	10251.24
	96500.000	400.00	0.0	0.0	587.30	18900.00	610.92	0.0	611.10	1.94	3.77	6292.90	13557.03
O	96500.000	400.00	0.0	0.0	587.30	21000.00	611.66	0.0	611.85	2.04	3.94	6704.71	14710.06
	96500.000	400.00	0.0	0.0	587.30	26000.00	613.29	0.0	613.52	2.22	4.30	7635.22	17468.58
	97300.000	950.00	0.0	0.0	588.80	13600.00	608.79	0.0	608.92	2.33	3.39	5733.41	8908.25
	97300.000	950.00	0.0	0.0	588.80	18900.00	611.15	0.0	611.30	2.30	3.67	7374.49	12453.82
P	97300.000	950.00	0.0	0.0	588.80	21000.00	611.90	0.0	612.05	2.35	3.80	7898.16	13712.75
	97300.000	950.00	0.0	0.0	588.80	26000.00	613.55	0.0	613.73	2.41	4.09	9065.66	16744.30

ACME BUSINESS FORMS INC 37

CASS RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
89500.000	13600.00	605.70	0.0	0.0	0.0	610.38	89500.00
89500.000	18900.00	607.25	1.55	0.0	0.0	613.87	89500.00
89500.000	21000.00	607.55	0.30	0.0	0.0	614.55	89500.00
89500.000	26000.00	608.50	0.95	0.0	0.0	616.69	89500.00
90030.000	13600.00	605.97	0.0	0.27	0.0	460.00	530.00
90030.000	18900.00	607.58	1.61	0.33	0.0	511.72	530.00
90030.000	21000.00	607.92	0.35	0.37	0.0	536.65	530.00
90030.000	26000.00	608.94	1.02	0.44	0.0	541.25	530.00
90600.000	13600.00	606.22	0.0	0.25	0.0	214.06	680.00
90600.000	18900.00	607.88	1.66	0.30	0.0	229.83	680.00
90600.000	21000.00	608.26	0.39	0.34	0.0	232.84	680.00
90600.000	26000.00	609.35	1.09	0.41	0.0	240.45	680.00
91120.000	13600.00	606.35	0.0	0.14	0.0	245.03	300.00
91120.000	18900.00	608.08	1.73	0.21	0.0	254.04	300.00
91120.000	21000.00	608.51	0.42	0.24	0.0	256.23	300.00
91120.000	26000.00	609.67	1.17	0.32	0.0	262.31	300.00
91550.000	13600.00	606.51	0.0	0.16	0.0	270.55	415.00
91550.000	18900.00	608.32	1.80	0.23	0.0	283.40	415.00
91550.000	21000.00	608.77	0.46	0.27	0.0	285.94	415.00
91550.000	26000.00	610.02	1.25	0.35	0.0	292.86	415.00
91551.000	13600.00	606.15	0.0	-0.36	0.0	269.68	50.00
91551.000	18900.00	607.89	1.74	-0.42	0.0	281.06	50.00
91551.000	21000.00	608.30	0.41	-0.47	0.0	283.33	50.00
91551.000	26000.00	609.48	1.17	-0.55	0.0	289.85	50.00
91552.000	13600.00	606.17	0.0	0.02	0.0	269.70	8.00
91552.000	18900.00	607.91	1.74	0.02	0.0	281.10	8.00
91552.000	21000.00	608.32	0.41	0.02	0.0	283.41	8.00
91552.000	26000.00	609.50	1.18	0.02	0.0	289.92	8.00
91553.000	13600.00	606.80	0.0	0.62	0.0	271.26	50.00
91553.000	18900.00	608.66	1.86	0.75	0.0	285.31	50.00
91553.000	21000.00	609.16	0.50	0.84	0.0	288.07	50.00
91553.000	26000.00	610.47	1.31	0.97	0.0	295.36	50.00
91850.000	13600.00	606.73	0.0	-0.07	0.0	215.10	250.00
91850.000	18900.00	608.55	1.82	-0.11	0.0	220.41	250.00
91850.000	21000.00	609.03	0.48	-0.13	0.0	221.81	250.00
91850.000	26000.00	610.30	1.27	-0.17	0.0	225.52	250.00
91851.000	13600.00	606.72	0.0	-0.01	0.0	207.31	10.00
91851.000	18900.00	608.53	1.82	-0.02	0.0	212.65	10.00
91851.000	21000.00	609.01	0.48	-0.02	0.0	214.06	10.00
91851.000	26000.00	610.27	1.26	-0.03	0.0	217.78	10.00
91852.000	13600.00	606.78	0.0	0.06	0.0	207.45	62.00
91852.000	18900.00	608.62	1.84	0.09	0.0	212.91	62.00
91852.000	21000.00	609.11	0.49	0.10	0.0	214.36	62.00
91852.000	26000.00	610.42	1.30	0.15	0.0	218.21	62.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
91853.000	13600.00	606.82	0.0	0.04	0.0	215.36	10.00
91853.000	18900.00	608.68	1.86	0.05	0.0	220.78	10.00
91853.000	21000.00	609.18	0.50	0.06	0.0	222.23	10.00
91853.000	26000.00	610.51	1.34	0.10	0.0	226.13	10.00
91950.000	13600.00	606.91	0.0	0.09	0.0	181.07	205.00
91950.000	18900.00	608.78	1.87	0.10	0.0	183.45	205.00
91950.000	21000.00	609.28	0.50	0.11	0.0	184.09	205.00
91950.000	26000.00	610.62	1.34	0.11	0.0	206.35	205.00
92010.000	13600.00	607.07	0.0	0.17	0.0	199.13	185.00
92010.000	18900.00	609.03	1.95	0.25	0.0	202.31	185.00
92010.000	21000.00	609.57	0.54	0.29	0.0	203.19	185.00
92010.000	26000.00	611.00	1.43	0.37	0.0	205.52	185.00
92011.000	13600.00	607.07	0.0	-0.01	0.0	194.12	10.00
92011.000	18900.00	609.01	1.95	-0.01	0.0	197.30	10.00
92011.000	21000.00	609.56	0.54	-0.02	0.0	198.17	10.00
92011.000	26000.00	610.98	1.42	-0.02	0.0	200.48	10.00
92012.000	13600.00	607.09	0.0	0.02	0.0	194.14	39.00
92012.000	18900.00	609.04	1.96	0.03	0.0	197.32	39.00
92012.000	21000.00	609.59	0.55	0.04	0.0	198.21	39.00
92012.000	26000.00	611.02	1.43	0.05	0.0	200.55	39.00
92013.000	13600.00	607.11	0.0	0.02	0.0	199.17	10.00
92013.000	18900.00	609.08	1.97	0.04	0.0	202.40	10.00
92013.000	21000.00	609.63	0.55	0.04	0.0	203.30	10.00
92013.000	26000.00	611.08	1.44	0.06	0.0	205.65	10.00
92030.000	13600.00	607.25	0.0	0.13	0.0	309.09	200.00
92030.000	18900.00	609.29	2.05	0.21	0.0	323.15	200.00
92030.000	21000.00	609.88	0.59	0.25	0.0	327.20	200.00
92030.000	26000.00	611.42	1.54	0.34	0.0	342.20	200.00
92480.000	13600.00	607.44	0.0	0.19	0.0	511.53	450.00
92480.000	18900.00	609.57	2.13	0.28	0.0	525.23	450.00
92480.000	21000.00	610.20	0.63	0.31	0.0	528.80	450.00
92480.000	26000.00	611.81	1.61	0.39	0.0	535.25	450.00
93300.000	13600.00	607.49	0.0	0.06	0.0	470.00	360.00
93300.000	18900.00	609.63	2.14	0.06	0.0	470.00	360.00
93300.000	21000.00	610.26	0.63	0.06	0.0	470.00	360.00
93300.000	26000.00	611.88	1.61	0.06	0.0	470.00	360.00
94035.000	13600.00	607.68	0.0	0.19	0.0	781.19	735.00
94035.000	18900.00	609.36	2.17	0.23	0.0	789.45	735.00
94035.000	21000.00	610.51	0.65	0.25	0.0	791.91	735.00
94035.000	26000.00	612.16	1.65	0.28	0.0	798.10	735.00
94900.000	13600.00	607.81	0.0	0.13	0.0	205.17	900.00
94900.000	18900.00	609.92	2.12	0.07	0.0	294.02	900.00
94900.000	21000.00	610.56	0.63	0.05	0.0	1437.18	900.00
94900.000	26000.00	612.20	1.65	0.04	0.0	1483.20	900.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
96100.000	13600.00	608.47	0.0	0.67	0.0	563.55	1220.00
96100.000	18900.00	610.81	2.33	0.38	0.0	575.00	1220.00
96100.000	21000.00	611.53	0.73	0.98	0.0	575.00	1220.00
96100.000	26000.00	613.16	1.62	0.95	0.0	575.00	1220.00
96500.000	13600.00	608.59	0.0	0.11	0.0	527.33	400.00
96500.000	18900.00	610.92	2.34	0.12	0.0	556.53	400.00
96500.000	21000.00	611.66	0.73	0.12	0.0	565.71	400.00
96500.000	26000.00	613.29	1.63	0.13	0.0	570.00	400.00
97300.000	13600.00	608.79	0.0	0.20	0.0	699.34	950.00
97300.000	18900.00	611.15	2.36	0.23	0.0	699.89	950.00
97300.000	21000.00	611.90	0.75	0.24	0.0	700.41	950.00
97300.000	26000.00	613.55	1.66	0.26	0.0	702.79	950.00

SUMMARY OF ERRORS

Received
9/23/81

These revisions to the August 29, 1980 Submittal

— FLOODWAY
— 100 YR. FLOOD
— 500 YR. FLOOD

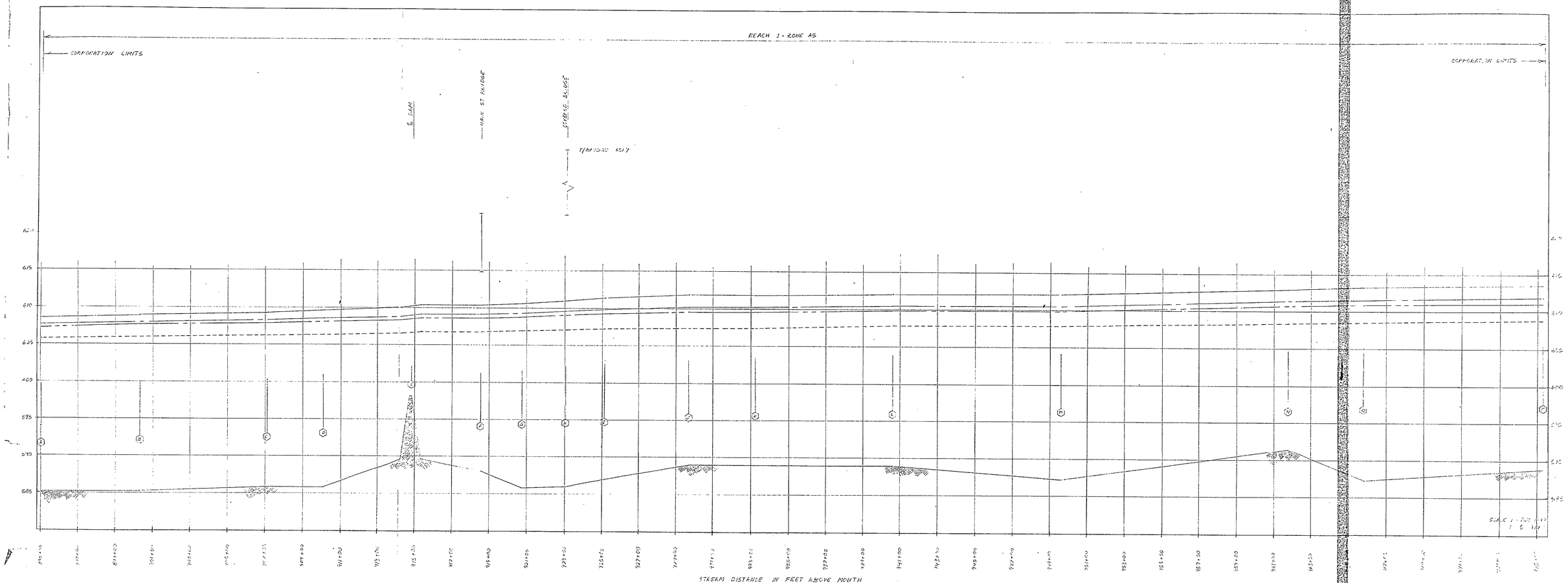
N

CITY OF FRANKENMUTH, MICHIGAN

CONTOUR INTERVAL 2'

0' 400 800'
SCALE IN FEET

REV. 9/18/81



ARCHITECTS ENGINEERS PLANNERS SURVEYORS	GOVE ASSOCIATES INC. 1601 PORTAGE ST KALAMAZOO, MICH (616) 344-1107 215 HILL ST LANSING, MICH (517) 485-0555	FLOOD INSURANCE STUDY CITY OF FRANKENMUTH CASS RIVER

REVISED 7/11/81

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: KOCHVILLE TWP

3) WATERCOURSE: KOCHVILLE DRAIN

4) DOCUMENT TYPE: 100 YR ENCROACHED

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**************************************************
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T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	0.0	0.0	0.0	0.	581.100	0.0

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 2

CCHV    0.100 CEHV    0.300
*SECNO 13340.000
   SECNO     DEPTH     C.SEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       THA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

        A

 13340.00     5.40    581.10      0.0     581.10    581.40      0.30      0.0       0.0     586.80
    910.       0.     910.        0.        0.       207.        0.        0.        0.      588.30
     0.0      0.0      4.40      0.0      0.035     0.035     0.035      0.0     575.70     257.86
 0.002466      0.       0.        0.        0         0         0     -0.00      67.36     325.22

*SECNO 14530.000

        B

 14530.00     6.90    582.20      0.0       0.0     582.28      0.08      0.95      0.02     586.70
    910.       0.     910.        0.        0.       413.        0.        8.        2.      534.70
     0.15      0.0      2.20      0.0      0.035     0.035     0.035     0.035     575.30     233.90
 0.000336    1190.    1190.     1190.        3         0         0     -0.01      84.53     315.43

*SECNO 14580.000

        C   FARM BRIDGE, DECK TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

 14580.00     7.75    582.15      0.0       0.0     582.33      0.18      0.02      0.03     585.70
    910.       0.     910.        0.        0.       264.        0.        9.        2.      585.60
     0.15      0.0      3.45      0.0      0.035     0.035     0.035     0.035     574.40     252.80
 0.000770      50.      50.       50.        2         0         0     -0.00      48.63     301.43

*SECNO 14581.000
 14581.00     7.76    582.15      0.0       0.0     582.34      0.18      0.01      0.00     585.70
    910.       0.     910.        0.        0.       264.        0.        9.        2.      585.60
     0.15      0.0      3.44      0.0      0.035     0.035     0.035     0.035     574.40     252.80
 0.000768      10.      10.       10.        0         0         0     -0.00      48.63     301.43

*SECNO 14630.000
   SECNO     DEPTH     C.SEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       THA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

        D

 14630.00     9.50    582.30      0.0       0.0     582.37      0.07      0.02      0.01     585.70
    910.       0.     910.        0.        0.       426.        0.        9.        2.      583.90
     0.16      0.0      2.14      0.0      0.035     0.035     0.035     0.035     572.80     234.04
 0.000306      50.      50.       50.        2         0         0     -0.01      84.59     318.63

*SECNO 16240.000
3280 CROSS SECTION  16240.00 EXTENDED      1.73 FEET
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3470 ENCROACHMENT STATIONS      142.0     275.0  TYPE      1  TARGET      134.000

        E

 16240.00     6.78   582.68     0.0      0.0    582.72     0.04     0.34     0.00    586.90
     910.       0.     910.       0.       0.     593.       0.      28.       6.  100000.00
     0.45      0.0     1.54      0.0    0.035    0.035    0.035    0.035   575.90    147.92
 0.000158    1610.    1610.    1610.        2        0        0    -0.01   119.44    267.36

*SECNO 17240.000

3470 ENCROACHMENT STATIONS      247.0     353.3  TYPE      1  TARGET      106.000

        F

 17240.00     6.59   582.89     0.0      0.0    583.00     0.11     0.26     0.02    585.40
     910.       0.     910.       0.       0.     344.       0.      38.       8.  100000.00
     0.55      0.0     2.65      0.0    0.035    0.035    0.035    0.035   576.30    250.91
 0.000698     900.     900.     900.        0        0        0    -0.01    93.07    343.89

CCHV    0.300 CEHV    0.500
*SECNO 17290.000

        G   C & O R. R. BRIDGE , WIDTH 9, LENGTH 68, LC 583.6, TR 587.2

 17290.00     6.59   582.99     0.0      0.0    583.13     0.14     0.11     0.02    587.20
     910.       0.     910.       0.       0.     303.       0.      39.       8.    587.20
     0.56      0.0     3.00      0.0    0.035    0.035    0.035    0.035   576.40    250.00
 0.000773     150.     150.     150.        2        0        0    -0.00    70.00    320.00


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.50      2.50      0.0      70.00      4.80    330.00     0.0      578.40    578.40

*SECNO 17291.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     582.97 BRIDGE VELOCITY ,      3.05     CALCULATED CHANNEL AREA ,      298.

 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
     0.0    583.15      0.02        0.      910.      330.      339.      583.60    587.20


 17291.00     6.61   583.01     0.0      0.0    583.15     0.14     0.02     0.0     587.20
     910.       0.     910.       0.       0.     305.       0.      39.       9.    587.20
     0.56      0.0     2.98      0.0    0.035    0.035    0.035    0.035   576.40    250.00
 0.000760       9.       9.       9.        0        0        0    -0.00    70.00    320.00

*SECNO 17340.000
3280 CROSS SECTION  17340.00 EXTENDED      1.53 FEET

   SECNO     DEPTH     CHSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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3470 ENCROACHMENT STATIONS      200.0     350.0  TYPE      1  TARGET      150.000

        H

 17340.00     6.78   533.18     0.0      0.0    583.22     0.04     0.04     0.03   580.80
     910.       0.     910.       0.       0.     585.       0.      40.       9. 100000.00
     0.58      0.0     1.56     0.0    0.035    0.035    0.035    0.035   576.40   200.00
 0.000227     100.     100.     100.        2        0        0    -0.01   150.00   350.00

CCHV    0.100 CEHV    0.300
*SECNO 17415.000

3470 ENCROACHMENT STATIONS      183.0     363.0  TYPE      1  TARGET      180.000

        I

 17415.00     7.01   583.31     0.0      0.0    583.40     0.08     0.16     0.01   584.50
     910.       0.     910.       0.       0.     397.       0.      47.      10.   584.20
     0.65      0.0     2.29     0.0    0.060    0.035    0.060    0.035   576.30   235.56
 0.000339     600.     600.     600.        2        0        0    -0.01    76.65   312.22

CCHV    0.300 CEHV    0.500
*SECNO 17465.000

3301 HV CHANGED MORE THAN HVINS

        J   NORTHBOUND I-675, WIDTH 44, LENGTH 80,LC 587.5, TR 590.4

 17465.00     2.33   583.13     0.0      0.0    583.77     0.64     0.10     0.28   591.00
     910.       0.     910.       0.       0.     142.       0.      47.      10.   591.00
     0.66      0.0     6.42     0.0    0.035    0.035    0.035    0.035   580.80   240.00
 0.010896     100.     100.     100.        2        0        0    -0.00    80.00   320.00

*SECNO 17466.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   591.00 MAX ELLC   585.30

 17466.00     2.48   583.23     0.0      0.0    583.83     0.55     0.03     0.03   591.00
     910.       0.     910.       0.       0.     153.       0.      47.      11.   591.00
     0.66      0.0     5.96     0.0    0.035    0.025    0.035    0.035   580.80   240.00
 0.004363       5.       5.       5.        3        0        0    -0.00    80.00   320.00

*SECNO 17467.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   590.40 MAX ELLC   587.60

 17467.00     7.70   583.90     0.0      0.0    584.00     0.10     0.03     0.14   590.40
     910.       0.     910.       0.       0.     366.       0.      48.      11.   590.40
     0.66      0.0     2.49     0.0    0.035    0.025    0.035    0.035   576.20   251.69
 0.000231      44.      44.      44.        2        0        0    -0.01    76.53   328.22

*SECNO 17468.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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17468.00      7.70    583.90      0.0       0.0     584.00      0.10      0.00      0.00    590.40
   910.        0.      910.       0.        0.       366.       0.        43.       11.     590.40
   0.66       0.0      2.48      0.0      0.035     0.030     0.035     0.035    576.20    251.69
0.000330       5.       5.        5.        0         0         0       -0.01     76.54    328.22

*SECNO 17515.000

17515.00      7.24    583.94      0.0       0.0     584.02      0.08      0.02      0.00    585.90
   910.        0.      910.       0.        0.       403.       0.        43.       11.     585.40
   0.67       0.0      2.25      0.0      0.035     0.030     0.035     0.035    576.70    260.22
0.000234      70.      70.       70.        2         0         0       -0.01     75.97    336.20

*SECNO 17600.000

        L   NORTHBOUND I-75 BRIDGE, WIDTH 61, LENGTH 46, LC 584.9, TR 588.8

17600.00      7.82    583.92      0.0       0.0     584.08      0.16      0.02      0.04    588.80
   910.        0.      910.       0.        0.       284.       0.        49.       11.     588.80
   0.68       0.0      3.20      0.0      0.035     0.030     0.035     0.035    576.10    253.00
0.000453      70.      70.       70.        2         0         0       -0.00     46.00    299.00

*SECNO 17601.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

17601.00      7.82    583.92      0.0       0.0     584.08      0.16      0.00      0.00    588.80
   910.        0.      910.       0.        0.       284.       0.        49.       11.     588.80
   0.68       0.0      3.20      0.0      0.035     0.025     0.035     0.035    576.10    253.00
0.000314       1.       1.        1.        0         0         0       -0.00     46.00    299.00

*SECNO 17602.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

17602.00      7.85    583.95      0.0       0.0     584.10      0.16      0.02      0.00    588.80
   910.        0.      910.       0.        0.       285.       0.        49.       11.     588.80
   0.68       0.0      3.19      0.0      0.035     0.025     0.035     0.034    576.10    253.00
0.000310      68.      68.       68.        0         0         0       -0.00     46.00    299.00

*SECNO 17603.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
     Q       QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME     VLOB      VCH       VROB      XNL       XNCH      XNR       HTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

17603.00      7.85    583.95      0.0       0.0     584.11      0.16      0.00      0.00    588.80
   910.        0.      910.       0.        0.       285.       0.        49.       11.     588.80
   0.68       0.0      3.19      0.0      0.035     0.025     0.035     0.034    576.10    253.00
0.000311       1.       1.        1.        0         0         0       -0.00     46.00    299.00

*SECNO 17665.000

        M   SOUTHBOUND I-75 BRIDGE, SAME DIMENSIONS AS NORTHBOUND

17665.00      7.86    583.96      0.0       0.0     584.11      0.16      0.01      0.00    588.80
   910.        0.      910.       0.        0.       286.       0.        50.       11.     588.80
   0.69       0.0      3.18      0.0      0.035     0.025     0.035     0.034    576.10    253.00
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0.000310      30.      30.      30.       0        0        0     -0.00    46.00   299.00

*SECNO 17666.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

 17666.00     7.86   583.96     0.0      0.0    584.11     0.16     0.00     0.00   588.30
    910.       0.     910.      0.       0.     286.       0.      50.      11.    588.80
     0.69      0.0     3.13     0.0    0.035    0.025    0.035    0.034   576.10   253.00
 0.000309       1.      1.       1.       0        0        0     -0.00    46.00   299.00

*SECNO 17667.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

 17667.00     7.88   583.98     0.0      0.0    584.14     0.16     0.02     0.00   588.80
    910.       0.     910.      0.       0.     287.       0.      50.      11.    588.80
     0.69      0.0     3.17     0.0    0.035    0.025    0.035    0.034   576.10   253.00
 0.000306      68.      68.      68.       0        0        0     -0.00    46.00   299.00

*SECNO 17668.000
 17668.00     7.88   583.90     0.0      0.0    584.14     0.16     0.00     0.00   588.80
    910.       0.     910.      0.       0.     287.       0.      50.      11.    588.80
     0.69      0.0     3.17     0.0    0.035    0.025    0.035    0.034   576.10   253.00
 0.000306       1.      1.       1.       0        0        0     -0.00    46.00   299.00

*SECNO 17715.000
3280 CROSS SECTION  17715.00 EXTENDED      1.34 FEET

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

3470 ENCROACHMENT STATIONS    215.0     355.0  TYPE    1  TARGET     140.000

        N

 17715.00     7.94   584.14     0.0      0.0    584.19     0.06     0.02     0.03   584.50
    910.       0.     910.      0.       0.     482.       0.      51.      11.    585.30
     0.71      0.0     1.89     0.0    0.035    0.035    0.035    0.034   576.20   242.77
 0.000202     100.     100.     100.       2        0        0     -0.01    34.46   327.23

CCHV    0.100 CEHV    0.300
*SECNO 17915.000
3280 CROSS SECTION  17915.00 EXTENDED      1.39 FEET

3470 ENCROACHMENT STATIONS    200.0     350.0  TYPE    1  TARGET     150.000

       0   U/S OF CONFLUENCE POINT WITH GOETZ DRAIN, REPEATING N

 17915.00     7.99   584.19     0.0      0.0    584.23     0.04     0.03     0.00   584.50
    780.       0.     780.      0.       0.     485.       0.      53.      12.    585.30
     0.74      0.0     1.60     0.0    0.050    0.035    0.050    0.034   576.20   242.66
 0.000145     200.     200.     200.       0        0        0     -0.01    84.64   327.30
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CCHV    0.100 CEHV    0.300
*SECNO 18940.000

3265 DIVIDED FLOW

3280 CROSS SECTION  18940.00 EXTENDED      0.59 FEET


3470 ENCROACHMENT STATIONS      230.0     540.0  TYPE      1  TARGET      310.000

        P   REPEATING W WITH ELEV ADJUSTMENT

 18940.00     7.19   584.39      0.0       0.0    584.44     0.05      0.21      0.00   585.50
     780.       0.     779.       1.        0.     420.      10.       66.       14.    586.30
     0.92      0.0     1.85     0.09     0.100    0.035    0.100     0.034    577.20   244.33
 0.000223    1200.   1200.    1200.         0        0        0     -0.01    124.31   540.00


*SECNO 19840.000
3280 CROSS SECTION  19840.00 EXTENDED      4.33 FEET


3470 ENCROACHMENT STATIONS      100.0     470.0  TYPE      1  TARGET      370.000

        Q

 19840.00     6.52   584.52      0.0       0.0    584.53     0.01      0.09      0.00   581.40
     780.      67.     436.     277.      230.     427.     931.       84.       19.    582.10
     1.24     0.29     1.02     0.30     0.100    0.035    0.100     0.034    578.00   100.00
 0.000064     800.     800.     800.         1        0        0     -0.01    370.00   470.00


*SECNO 21040.000
3280 CROSS SECTION  21040.00 EXTENDED      3.43 FEET


3470 ENCROACHMENT STATIONS        0.0     330.0  TYPE      1  TARGET      329.999

        R   REPEATING Q WITH ELEV ADJUSTMENT

 21040.00     5.63   584.63      0.0       0.0    584.64     0.01      0.11      0.00   582.40
     780.     303.     365.     113.      521.     354.     241.      121.       29.    583.10
     1.67     0.58     1.03     0.47     0.070    0.045    0.070     0.036    579.00     2.51
 0.000138    1200.   1200.    1200.         2        0        0     -0.02    327.49   330.00


CCHV    0.300 CEHV    0.500
*SECNO 22340.000
3280 CROSS SECTION  22340.00 EXTENDED      2.13 FEET


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


3470 ENCROACHMENT STATIONS      243.0     307.0  TYPE      1  TARGET       64.000

        S
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 22340.00     8.23   584.83     0.0      0.0    584.91     0.08     0.23     0.03   586.40
     780.       0.     780.       0.       0.     350.       0.     138.      33. 100000.00
     1.79      0.0     2.23      0.0    0.035    0.045    0.035    0.037   576.60   245.16
 0.000477    1000.    1000.    1000.        2        0        0    -0.01    60.36   305.53

*SECNO 22390.000
3280 CROSS SECTION  22390.00 EXTENDED      1.95 FEET

3470 ENCROACHMENT STATIONS      245.0     307.0  TYPE      1  TARGET       62.000

        T   FARM BRIDGE, DECK-TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

 22390.00     7.05   584.85     0.0      0.0    584.95     0.10     0.03     0.01   586.80
     780.       0.     780.       0.       0.     304.       0.     139.      33. 100000.00
     1.80      0.0     2.56      0.0    0.035    0.045    0.035    0.037   577.80   250.00
 0.000678      50.      50.      50.        0        0        0    -0.00    51.25   301.25

*SECNO 22391.000
3280 CROSS SECTION  22391.00 EXTENDED      1.95 FEET

3470 ENCROACHMENT STATIONS      245.0     307.0  TYPE      1  TARGET       62.000
 22391.00     7.05   584.85     0.0      0.0    584.96     0.10     0.01     0.00   586.80
     780.       0.     780.       0.       0.     305.       0.     139.      33. 100000.00
     1.80      0.0     2.56      0.0    0.035    0.045    0.035    0.037   577.80   250.00
 0.000676      10.      10.      10.        0        0        0    -0.00    51.25   301.25

*SECNO 22440.000
3280 CROSS SECTION  22440.00 EXTENDED      1.92 FEET

3470 ENCROACHMENT STATIONS      233.0     303.0  TYPE      1  TARGET       70.000

        U

 22440.00     7.42   584.92     0.0      0.0    584.99     0.08     0.03     0.01   585.50
     780.       0.     780.       0.       0.     353.       0.     139.      33. 100000.00
     1.81      0.0     2.21      0.0    0.035    0.045    0.035    0.037   577.50   242.07
 0.000473      50.      50.      50.        2        0        0    -0.00    60.93   303.00

CCHV    0.100 CEHV    0.300
*SECNO 22665.000

3470 ENCROACHMENT STATIONS      240.0     290.0  TYPE      1  TARGET       50.000

        V

 22665.00     7.01   585.01     0.0      0.0    585.12     0.11     0.12     0.01   585.10
     780.       0.     780.       0.       0.     290.       0.     141.      33. 100000.00
     1.83      0.0     2.69      0.0    0.035    0.045    0.035    0.037   578.00   240.00
 0.000783     200.     200.     200.        2        0        0    -0.00    50.00   290.00

CCHV    0.300 CEHV    0.500
*SECNO 22715.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
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   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

        W   FOOT BRIDGE, WIDTH 26, LENGTH 41, LC 584.9, TR 586.9

 22715.00     8.08   585.08     0.0      0.0    585.23     0.16     0.09     0.02    586.90
     780.       0.     780.       0.       0.     245.       0.     141.      34.    586.90
     1.84      0.0     3.18     0.0    0.035    0.045    0.035    0.037   577.00    251.00
 0.001041     100.     100.     100.        0        0        0    -0.00    40.05    291.05

*SECNO 22716.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   586.90 MAX ELLC   584.90

 22716.00     8.07   585.07     0.0      0.0    585.24     0.17     0.00     0.00    586.90
     780.       0.     780.       0.       0.     238.       0.     141.      34.    586.90
     1.84      0.0     3.28     0.0    0.035    0.045    0.035    0.037   577.00    251.00
 0.002572       1.       1.       1.        0        0        0    -7.13    40.06    291.06

*SECNO 22717.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   586.90 MAX ELLC   584.90

 22717.00     8.14   585.14     0.0      0.0    585.31     0.17     0.07     0.0     586.90
     780.       0.     780.       0.       0.     238.       0.     141.      34.    586.90
     1.84      0.0     3.28     0.0    0.035    0.045    0.035    0.037   577.00    251.00
 0.002572      26.      26.      26.        1        0        0    -9.25    40.08    291.08

*SECNO 22871.000
 22871.00     8.16   585.16     0.0      0.0    585.31     0.15     0.00     0.00    586.90
     780.       0.     780.       0.       0.     248.       0.     141.      34.    586.90
     1.84      0.0     3.14     0.0    0.035    0.045    0.035    0.037   577.00    251.00
 0.001003       1.       1.       1.        1        0        0    -0.00    40.10    291.10

*SECNO 22730.000
3280 CROSS SECTION  22730.00 EXTENDED      0.92 FEET


3470 ENCROACHMENT STATIONS      243.0     296.0  TYPE      1  TARGET       53.000

        X   USING Y

 22730.00     7.02   585.22     0.0      0.0    585.34     0.12     0.01     0.01    585.80
     780.       0.     730.       0.       0.     282.       0.     141.      34.  100000.00
     1.84      0.0     2.76     0.0    0.035    0.045    0.035    0.037   578.20    243.12
 0.000811      15.      15.      15.        2        0        0    -0.00    50.41    293.53

CCHV    0.100 CEHV    0.300
*SECNO 23090.000
3280 CROSS SECTION  23090.00 EXTENDED      1.13 FEET

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST
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3470 ENCROACHMENT STATIONS        243.0      296.0  TYPE        1  TARGET        53.000

        Y

 23090.00      7.23    585.43      0.0       0.0     585.54      0.11      0.20      0.00    585.80
     780.        0.      780.        0.        0.      293.        0.      144.       34. 100000.00
     1.88       0.0      2.66       0.0     0.020     0.035     0.035     0.037    578.20    243.08
 0.000438       350.     350.      350.         2         0         0     -0.00     50.63    293.71

CCHV     0.300 CEHV     0.500
*SECNO 23140.000
3280 CROSS SECTION  23140.00 EXTENDED       0.73 FEET

3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE        1  TARGET        40.000

        Z   FARM BRIDGE, WIDTH 16, LENGTH 40, LC 586.1, TR 587.6

 23140.00      7.83    585.43      0.0       0.0     585.60      0.17      0.03      0.03    587.60
     780.        0.      780.        0.        0.      239.        0.      144.       34. 100000.00
     1.88       0.0      3.26       0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000853        50.      50.       50.         2         0         0     -0.00     38.23    288.23

*SECNO 23141.000
3280 CROSS SECTION  23141.00 EXTENDED       0.73 FEET

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   537.60 MAX ELLC   586.20

3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE        1  TARGET        40.000
 23141.00      7.83    585.43      0.0       0.0     585.60      0.17      0.00      0.00    587.60
     780.        0.      780.        0.        0.      239.        0.      144.       34. 100000.00
     1.88       0.0      3.26       0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000852         1.       1.        1.         0         0         0     -0.00     38.23    288.23

*SECNO 23142.000
3280 CROSS SECTION  23142.00 EXTENDED       0.75 FEET

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   537.60 MAX ELLC   586.20

3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE        1  TARGET        40.000
 23142.00      7.85    585.45      0.0       0.0     585.61      0.16      0.01      0.00    587.60
     780.        0.      780.        0.        0.      239.        0.      144.       34. 100000.00
     1.88       0.0      3.26       0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000847        16.      16.       16.         0         0         0     -0.00     38.24    288.24

*SECNO 23143.000
3280 CROSS SECTION  23143.00 EXTENDED       0.75 FEET

3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE        1  TARGET        40.000
 23143.00      7.85    585.45      0.0       0.0     585.61      0.15      0.00      0.00    587.60
     780.        0.      780.        0.        0.      240.        0.      144.       34. 100000.00
     1.88       0.0      3.26       0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000846         1.       1.        1.         0         0         0     -0.00     38.24    288.24
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*SECNO 23190.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XWL       XMCH      XWR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IOC       ICONT     CORAR     TOPWID     ENDST

3470 ENCROACHMENT STATIONS      244.0     298.0  TYPE      1  TARGET       54.000

        AA

 23190.00      7.95    585.55      0.0       0.0    585.66      0.11      0.03      0.02    586.30
     780.        0.      730.       0.        0.     289.        0.      144.       34.  100000.00
     1.89       0.0      2.70      0.0     0.020     0.040     0.035     0.037    577.60    244.86
 0.000574       50.       50.      50.         2         0         0    -0.00     50.45    295.31

CCHV    0.100 CEHV    0.300
*SECNO 24530.000

3470 ENCROACHMENT STATIONS      132.0     168.0  TYPE      1  TARGET       36.000

        AB

 24530.00      8.40    586.90      0.0       0.0    587.23      0.33      1.50      0.06    589.20
     780.        0.      780.       0.        0.     170.        0.      152.       35.  100000.00
     1.97       0.0      4.59      0.0     0.020     0.050     0.030     0.039    578.50    134.61
 0.003101     1340.    1340.    1340.         2         0         0    -0.00     31.52    166.13

*SECNO 250.000

3470 ENCROACHMENT STATIONS      132.0     168.0  TYPE      1  TARGET       36.000

        AC   SOUTH BRANCH,  U/S OF CONFLUENCE POINT WITH KOCHVILLE DRAIN

  250.00      8.98    587.48      0.0       0.0    587.60      0.12      0.35      0.02    589.20
     530.        0.      530.       0.        0.     188.        0.      152.       35.  100000.00
     1.99       0.0      2.82      0.0     0.020     0.050     0.030     0.039    578.50    133.96
 0.001081     185.     185.     185.         2         0         0    -0.00     32.89    166.85

CCHV    0.300 CEHV    0.500
*SECNO 300.000

        AD   MICHIGAN ROAD CULVERT, INVERT 580.1, CROWN 588.4, TR 589.9

             STRUCTURAL PLATE PIPE ARCH 12'10  X 8'4  X 36'

  300.00      7.40    587.50      0.0       0.0    588.03      0.54      0.22      0.21    589.90
     530.        0.      530.       0.        0.      90.        0.      153.       36.    589.90
     1.99       0.0      5.87      0.0     0.020     0.050     0.030     0.039    580.10    193.50
 0.007096     100.     100.     100.         2         0         0    -0.00     13.00    206.50

*SECNO 301.000

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD   589.90 MAX ELLC   589.90

  301.00      7.31    587.41      0.0       0.0    588.13      0.71      0.01      0.09    589.90
     530.        0.      530.       0.        0.      79.        0.      153.       36.    589.90
     1.99       0.0      6.77      0.0     0.020     0.031     0.030     0.039    580.10    193.50
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 0.004950       1.       1.       1.       2        0        0   -10.96    13.00   206.50

*SECNO 302.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOP WID   ENDST

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD   589.90 MAX ELLC   589.90

   302.00     7.52   587.62     0.0      0.0    588.31     0.69     0.18     0.01   589.90
     530.       0.     530.       0.       0.      80.       0.     153.      36.   589.90
     1.99      0.0     6.66      0.0    0.020    0.031    0.030    0.039   580.10   193.50
 0.004910      36.      36.      36.        0        0        0   -12.50    13.00   206.50

*SECNO 303.000
   303.00     7.80   587.90     0.0      0.0    588.38     0.48     0.01     0.06   589.90
     530.       0.     530.       0.       0.      96.       0.     153.      36.   589.90
     1.99      0.0     5.55      0.0    0.020    0.050    0.030    0.039   580.10   193.50
 0.006126       1.       1.       1.        2        0        0    -0.00    13.00   206.50

*SECNO 350.000

3470 ENCROACHMENT STATIONS      130.0     171.0  TYPE      1  TARGET       41.000

        AE

   350.00     9.37   588.57     0.0      0.0    588.66     0.09     0.17     0.12   589.50
     530.       0.     530.       0.       0.     220.       0.     153.      36. 100000.00
     2.00      0.0     2.41      0.0    0.020    0.050    0.030    0.039   579.20   131.53
 0.000764     100.     100.     100.        2        0        0    -0.00    38.97   170.50

CCHV    0.100 CEHV    0.300
*SECNO 1550.000

3470 ENCROACHMENT STATIONS      237.0     277.0  TYPE      1  TARGET       40.000

        AF

  1550.00     9.67   589.57     0.0      0.0    589.68     0.11     1.01     0.01   590.20
     530.       0.     530.       0.       0.     202.       0.     159.      37. 100000.00
     2.13      0.0     2.63      0.0    0.020    0.050    0.030    0.040   579.90   238.06
 0.001015    1150.    1150.    1150.        3        0        0    -0.00    38.94   277.00

*SECNO 2800.000
3280 CROSS SECTION   2800.00 EXTENDED      1.13 FEET

3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AG

  2800.00     8.43   590.63     0.0      0.0    590.71     0.08     1.03     0.00   589.80
     530.      78.     426.      26.      34.     181.      25.     165.      38.   589.60
     2.27      2.30     2.35     1.06    0.020    0.050    0.040    0.041   582.20   210.00
 0.000737    1200.    1200.    1200.        1        0        0    -0.00    80.00   290.00
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CCHV    0.300 CEHV    0.500
*SECNO 2850.000
3280 CROSS SECTION   2350.00 EXTENDED      0.09 FEET

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

3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET       80.000

        AH   DAVIS ROAD CULVERT, INVERT 582.2, CROWN 589.6, TR 590.5

             STRUCTURAL PLATE PIPE ARCH 11'7   X 7'5  X 30'

  2850.00     8.39   590.59     0.0      0.0    591.08     0.48     0.16     0.20   590.50
     530.       4.     525.       2.       3.      93.       3.     165.      38.   590.50
     2.28     1.19     5.61     0.60    0.020    0.050    0.040    0.041   582.20   160.00
 0.006390     100.     100.     100.        2        0        0    -0.00    80.00   240.00

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.80      2.50      0.0       11.80     0.0       67.00     0.0       582.20    582.20

*SECNO 2851.000
3280 CROSS SECTION   2851.00 EXTENDED      0.48 FEET

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
  592.34    591.08     0.0       196.      334.       67.       87.       589.60    590.50

3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET       80.000
  2851.00     8.78   590.98     0.0      0.0    591.29     0.31     0.21     0.0    590.50
     530.      48.     459.      24.      16.      98.      16.     165.      38.   590.50
     2.28     2.91     4.68     1.45    0.020    0.050    0.040    0.041   582.20   160.00
 0.004163      30.      30.      30.        3        0        3    -0.00    80.00   240.00

*SECNO 2900.000
3280 CROSS SECTION   2900.00 EXTENDED      1.72 FEET

3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AI

  2900.00     9.12   591.42     0.0      0.0    591.48     0.06     0.12     0.07   590.10
     530.      72.     364.      94.      33.     170.      53.     166.      39.   589.20
     2.29     2.19     2.14     1.50    0.020    0.050    0.040    0.041   582.30   210.00
 0.000592     100.     100.     100.        2        0        0    -0.01    80.00   290.00
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CCHV    0.100 CEHV    0.300
*SECNO 3500.000
3280 CROSS SECTION   3500.00 EXTENDED      2.00 FEET


3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET      80.000

       AJ   REPEATING AI

  3500.00      9.41    591.71      0.0       0.0    591.77      0.06      0.28      0.00    590.10
     530.       85.      346.       99.       39.     179.       71.      169.       40.    589.20
      2.37      2.15      1.93      1.41     0.020    0.050     0.040     0.041    582.30    210.00
  0.000454     550.      550.      550.         2        0         0     -0.01     80.00    290.00

CCHV    0.100 CEHV    0.300
*SECNO 3600.000
3280 CROSS SECTION   3600.00 EXTENDED      0.20 FEET


3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET      80.000

       AK   DRIVEWAY CULVERT, INVERT 583.7, CROWN 589.8, TR 591.0

            STRUCTURAL PLATE PIPE ARCH 3'10  X 6'11  X 20'

  3600.00      7.50    591.20    588.77      0.0    592.18      0.98      0.13      0.28    591.00
     530.        1.      518.       12.        0.      65.        7.      170.       40.    591.00
      2.38      2.08      8.02      1.65     0.020    0.050     0.040     0.041    583.70    192.07
  0.016856     100.      100.      100.         5       11         0     -0.00     47.93    240.00


SPECIAL BRIDGE

SB   XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.75      2.50      0.0       9.00      0.0       43.00     0.0       533.70    583.70

*SECNO 3601.000
3280 CROSS SECTION   3601.00 EXTENDED      1.19 FEET


3301 HV CHANGED MORE THAN HVINS

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


PRESSURE AND WEIR FLOW

 EGPRS     EGLWC     H3        QWEIR     DPR       BAREA     TRAPEZOID AREA     ELLC      ELTRD
 595.33    592.18    0.0       245.      285.      43.       55.       589.80    591.00
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3470 ENCROACH ENT STATIONS        160.0      240.0  TYPE       1  TARGET        80.000
  3601.00      8.48    592.18      0.0       0.0     592.39      0.21      0.21      0.0     591.00
     530.      162.      273.       95.       38.       73.       42.      170.       40.     591.00
     2.38      4.24      3.72      2.25     0.020     0.050     0.040     0.041    583.70    160.00
 0.003058       20.       20.       20.         2         0         4     -0.00     80.00    240.00

*SECNO 3700.000

3470 ENCROACHMENT STATIONS        210.0      290.0  TYPE       1  TARGET        80.000

        AL   REPEATING AO WITH ELEV ADJUSTMENT

  3700.00      8.76    592.46      0.0       0.0     592.54      0.09      0.14      0.01    592.20
     530.        5.      421.      104.        6.      170.       57.      170.       40.     589.90
     2.39      0.76      2.47      1.82     0.020     0.050     0.040     0.041    583.70    210.00
 0.000783      100.      100.      100.         2         0         0     -0.00     80.00    290.00

CCHV     0.100 CEHV     0.300
*SECNO 4400.000
3280 CROSS SECTION    4400.00 EXTENDED       0.21 FEET

3470 ENCROACHMENT STATIONS        210.0      290.0  TYPE       1  TARGET        80.000

        AM   REPEATING AL

  4400.00      9.22    592.92      0.0       0.0     592.98      0.06      0.44      0.00    592.20
     530.       25.      394.      111.       20.      184.       67.      174.       41.     589.90
     2.48      1.30      2.15      1.65     0.020     0.050     0.040     0.042    583.70    210.00
 0.000534      680.      680.      680.         2         0         0     -0.00     80.00    290.00

*SECNO 4500.000
3280 CROSS SECTION    4500.00 EXTENDED       1.65 FEET

3470 ENCROACHMENT STATIONS        160.0      240.0  TYPE       1  TARGET        80.000

        AN   DRIVEWAY CULVERT, INVERT 583.7, CROWN 590.3, TR 591.3

             STRUCTURAL PLATE PIPE ARCH 9'9  X 6'7  X 20.3'

  4500.00      9.25    592.95      0.0       0.0     593.10      0.14      0.09      0.02    591.30
     530.      117.      285.      129.       36.       88.       58.      174.       41.     591.30
     2.49      3.25      3.23      2.22     0.020     0.050     0.040     0.042    583.70    160.00
 0.001941      100.      100.      100.         2         0         0     -0.01     80.00    240.00

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHJ      ELCHD
     0.0       1.72       2.50       0.0       10.00       0.0       52.00       0.0       583.70     583.70

*SECNO 4501.000
3280 CROSS SECTION    4501.00 EXTENDED       1.85 FEET

PRESSURE AND WEIR FLOW
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EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
595.73	593.10	0.0	355.	176.	52.	66.	590.30	591.30

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

4501.00	9.45	593.15	0.0	0.0	593.26	0.11	0.17	0.0	591.30
530.	203.	215.	112.	61.	90.	65.	175.	42.	591.30
2.50	3.34	2.38	1.73	0.020	0.050	0.040	0.042	583.70	160.00
0.001023	20.	20.	20.	2	0	4	-0.00	80.00	240.00

*SECNO 4600.000
3280 CROSS SECTION 4600.00 EXTENDED 0.57 FEET

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

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AO

4600.00	8.77	593.27	0.0	0.0	593.34	0.06	0.07	0.00	592.60
530.	17.	379.	134.	15.	177.	75.	175.	42.	589.90
2.51	1.12	2.14	1.78	0.020	0.050	0.040	0.042	584.50	210.00
0.000544	100.	100.	100.	2	0	0	-0.00	80.00	290.00

*SECNO 4950.000
3280 CROSS SECTION 4950.00 EXTENDED 0.75 FEET

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AP REPEATING AO

4950.00	8.95	593.45	0.0	0.0	593.51	0.06	0.17	0.00	592.60
530.	25.	357.	148.	20.	182.	79.	177.	42.	589.90
2.56	1.22	1.96	1.88	0.020	0.050	0.035	0.042	584.50	210.00
0.000438	350.	350.	350.	2	0	0	-0.00	80.00	290.00

*SECNO 5050.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AQ DRIVEWAY CULVERT, INVERT 585.3, CROWN 591.5, TR 594.4

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'11 X 21'

5050.00	7.39	592.89	0.0	0.0	593.94	1.04	0.13	0.30	594.40
530.	0.	530.	0.	0.	65.	0.	178.	42.	594.40
2.56	0.0	8.19	0.0	0.020	0.050	0.035	0.042	585.30	195.50
0.017944	100.	100.	100.	2	0	0	-0.00	9.00	204.50

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SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    0.0       1.75      2.50      0.0       9.00      0.0       43.00     0.0       582.80    582.80

*SECNO 5051.000
3280 CROSS SECTION   5051.00 EXTENDED      0.08 FEET

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  597.02    592.85     0.0       136.      394.       43.       78.       591.50    594.40

3470 ENCROACHMENT STATIONS      195.5     204.5  TYPE      1  TARGET        9.000
 5051.00     9.17   594.47     0.0       0.0    595.17     0.70      1.24      0.0     594.40
    530.       0.     530.       0.        0.      79.       0.       178.      42.  100000.00
    2.57      0.0     6.72      0.0     0.020    0.050    0.035     0.042    585.30    195.50
0.011082      21.      21.      21.         2        0        4     -0.00      9.00    204.50

*SECNO 5150.000
3280 CROSS SECTION   5150.00 EXTENDED      1.50 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AR   REPEATING AO WITH ELEV ADJUSTMENT

 5150.00     9.90   595.30     0.0       0.0    595.35     0.05      0.11      0.05    594.40
    530.      35.     384.     111.       26.     200.      68.       178.      43.     592.20
    2.58      1.34     1.92     1.63    0.020    0.050    0.035     0.042    585.40    210.00
0.000391     100.     100.     100.         2        0        0     -0.00     80.00    290.00

CCHV    0.300 CEHV    0.500
*SECNO 5250.000
3280 CROSS SECTION   5250.00 EXTENDED      1.53 FEET

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

3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET       80.000

        AS   DRIVEWAY CULVERT, INVERT 585.4, CROWN 592.5, TR 593.8

             STRUCTURAL PLATE PIPE ARCH 10'11  X 7'1  X 22'

 5250.00     9.93   595.33     0.0       0.0    595.46     0.13      0.07      0.04    593.80
    530.      77.     332.     121.       29.     104.      53.       179.      43.     593.80
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     2.59      2.69      3.19      2.29     0.020     0.050     0.035     0.042    595.40    160.00
 0.001739     100.      100.      100.         2         0         0     -0.00     80.00    240.00


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BAP       BAREA     SS        ELCHU     ELCHD
     0.0      1.70      2.50      0.0       11.00     0.0       61.00     0.0       585.40    585.40

*SECNO 5251.000
3280 CROSS SECTION   5251.00 EXTENDED      1.74 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                             AREA
  597.32    595.46    0.0       321.      209.      51.       78.           592.50    593.80


3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET       80.000
  5251.00    10.14    595.54    0.0       0.0     595.64    0.10      0.18      0.0       593.80
     530.     170.     251.     109.      56.      106.     60.       179.      43.       593.80
     2.59     3.04     2.36     1.81    0.020     0.050    0.035     0.042    585.40    160.00
 0.000925     22.      22.      22.         2         0        4     -0.00     80.00    240.00


*SECNO 5350.000
3280 CROSS SECTION   5350.00 EXTENDED      1.67 FEET


3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AT REPEATING AD WITH ELEV ADJUSTMENT

  5350.00    10.46    595.66    0.0       0.0     595.70    0.04      0.04      0.02      594.00
     530.     70.      341.     118.      46.      216.     33.       180.      43.       591.90
     2.61     1.52     1.58     1.43    0.020     0.050    0.035     0.042    585.20    210.00
 0.000238    100.      100.     100.         1         0        0     -0.00     80.00    290.00


*SECNO 5550.000
3280 CROSS SECTION   5550.00 EXTENDED      0.82 FEET


3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AU   REPEATING AT

  5550.00     9.62    595.72    0.0       0.0     595.77    0.05      0.06      0.01      594.90
     530.     74.      355.     101.      41.      191.     54.       181.      43.       592.80
     2.64     1.81     1.86     1.57    0.020     0.050    0.035     0.042    536.10    210.00
 0.000387    200.      200.     200.         2         0        0     -0.00     80.00    290.00


CCHV    0.300 CEHV    0.500
*SECNO 5650.000
3280 CROSS SECTION   5650.00 EXTENDED      0.81 FEET
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3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AV DRIVEWAY CULVERT, INVERT 586.1, CROWN 592.2, TR 594.9

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'1 X 20.5'

5650.00	9.61	595.71	0.0	0.0	595.95	0.25	0.09	0.10	594.90
530.	114.	350.	65.	29.	83.	29.	181.	44.	594.90
2.65	3.98	4.21	2.28	0.020	0.050	0.035	0.042	586.10	160.00
0.003941	100.	100.	100.	2	0	0	-0.00	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHO
	0.0	1.75	2.50	0.0	9.00	0.0	43.00	0.0	586.10	586.10

*SECNO 5651.000
3280 CROSS SECTION 5651.00 EXTENDED 1.27 FEET

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

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
599.84	595.95	0.0	325.	205.	43.	55.	592.20	594.90

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

5651.00	10.07	596.17	0.0	0.0	596.32	0.15	0.37	0.0	594.90
530.	168.	265.	96.	45.	87.	45.	182.	44.	594.90
2.65	3.73	3.04	2.13	0.020	0.050	0.035	0.042	586.10	160.00
0.001921	21.	21.	21.	2	0	4	-0.00	80.00	240.00

*SECNO 5750.000
3280 CROSS SECTION 5750.00 EXTENDED 1.48 FEET

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AW REPEATING AO WITH ELEV ADJUSTMENT

5750.00	9.68	596.38	0.0	0.0	596.42	0.04	0.06	0.03	595.10
530.	56.	347.	127.	37.	198.	79.	182.	44.	592.80
2.67	1.52	1.75	1.61	0.020	0.050	0.035	0.042	586.70	210.00
0.000321	100.	100.	100.	2	0	0	-0.00	80.00	290.00

CCHV 0.100 CEHV 0.300
*SECNO 5850.000
3280 CROSS SECTION 5850.00 EXTENDED 1.88 FEET

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AX DRIVEWAY CULVERT, INVERT 587.3, CROWN 593.4. TR 594.5

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'1 X 20.5'

5850.00	9.08	596.38	0.0	0.0	596.49	0.12	0.05	0.02	594.50
530.	221.	177.	132.	65.	79.	67.	183.	44.	594.50
2.68	3.41	2.25	1.98	0.020	0.050	0.035	0.042	587.30	160.00
0.001007	100.	100.	100.	2	0	0	-0.00	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	1.75	2.50	0.0	9.00	0.0	43.00	0.0	587.30	587.30

*SECNO 5851.000
3280 CROSS SECTION 5851.00 EXTENDED 2.04 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
600.51	596.49	0.0	396.	134.	43.	55.	593.40	594.50

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

5851.00	9.24	596.54	0.0	0.0	596.64	0.11	0.15	0.0	594.50
530.	228.	165.	136.	70.	80.	72.	183.	44.	594.50
2.68	3.25	2.06	1.89	0.020	0.050	0.035	0.042	587.30	160.00
0.000823	21.	21.	21.	2	0	4	-0.00	80.00	240.00

*SECNO 6000.000
3280 CROSS SECTION 6000.00 EXTENDED 1.07 FEET

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AY DRIVEWAY CULVERT, INVERT 587.5, CROWN 593.4, TR 595.6

STRUCTURAL PLATE PIPE ARCH 8'7 X 5'11 X 20.5

6000.00	9.18	596.68	0.0	0.0	596.88	0.20	0.21	0.03	595.60
530.	162.	281.	87.	39.	79.	38.	183.	44.	595.60
2.69	4.10	3.57	2.30	0.020	0.050	0.035	0.042	587.50	160.00
0.002771	150.	150.	150.	0	0	0	-0.00	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	1.76	2.50	0.0	9.00	0.0	40.00	0.0	587.50	587.50

*SECNO 6001.000
3280 CROSS SECTION 6001.00 EXTENDED 1.36 FEET

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

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
601.48	596.88	0.0	371.	159.	40.	53.	593.40	595.60

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

6001.00	9.46	596.96	0.0	0.0	597.11	0.15	0.23	0.0	595.60
530.	189.	238.	103.	49.	81.	48.	184.	44.	595.60
2.69	3.32	2.93	2.15	0.020	0.050	0.035	0.042	567.50	160.00
0.001787	21.	21.	21.	2	0	4	-0.00	80.00	240.00

*SECNO 6100.000

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AZ

6100.00	7.63	597.13	0.0	0.0	597.34	0.21	0.21	0.02	596.30
530.	71.	459.	0.	35.	120.	0.	184.	44.	597.40
2.70	2.03	3.84	0.0	0.040	0.050	0.050	0.042	589.50	210.00
0.002515	100.	100.	100.	2	0	0	-0.00	52.65	262.65

CCHV 0.100 CEHV 0.300

*SECNO 6750.000

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

BA REPEATING AZ

6750.00	8.61	598.11	0.0	0.0	598.22	0.11	0.87	0.01	596.30
530.	101.	415.	14.	63.	143.	20.	187.	45.	597.40
2.78	1.60	2.90	0.72	0.040	0.040	0.045	0.042	589.50	210.00
0.000742	100.	100.	100.	2	0	0	-0.01	80.00	290.00

*SECNO 6850.000

3470 ENCROACHMENT STATIONS 150.0 250.0 TYPE 1 TARGET 100.000

BB FARM CULVERT, INVERT 589.6, CROWN 595.7, TR 596.6

STRUCTURAL PLATE PIPE ARCH 8'10 X 5'1 X 21'

6850.00	8.62	598.22	0.0	0.0	598.33	0.10	0.11	0.00	596.60
530.	180.	219.	131.	74.	75.	61.	187.	46.	596.60
2.79	2.43	2.93	2.15	0.035	0.050	0.035	0.042	589.60	150.00
0.001794	100.	100.	100.	2	0	0	-0.01	100.00	250.00

SPECIAL BRIDGE

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SB  XK        XKOR      COFQ      RCLEN     BWC       BWP       BAREA     SS        ELCHJ     ELCHD
    0.0       2.19      2.50      0.0       9.00      0.0       43.00     0.0       589.60    589.60

*SECNO 6851.000
PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  603.39    598.33     0.0       415.      117.       43.       55.       595.70    596.60

3470 ENCROACHMENT STATIONS      150.0     250.0  TYPE      1  TARGET      100.000
  6851.00     8.79   598.39     0.0       0.0    593.48     0.09      0.15      0.0     596.60
     530.     187.     202.     141.      81.      76.       68.      188.      46.     596.60
     2.79     2.30     2.65     2.06     0.035    0.050     0.035     0.042    589.60    150.00
 0.001424      21.      21.      21.        2        0         5     -0.01    100.00    250.00

*SECNO 6950.000

3265 DIVIDED FLOW

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VCL      TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XML      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

3470 ENCROACHMENT STATIONS      200.0     300.0  TYPE      1  TARGET      100.000

        BC

  6950.00     9.50   598.50     0.0       0.0    598.57     0.07      0.09      0.00    596.00
     530.     167.     361.      1.       37.     161.       4.      188.      46.     598.60
     2.80     1.91     2.24     0.30     0.035    0.050     0.035     0.042    589.00    200.00
 0.000657     100.     100.     100.        2        0         0     -0.00     90.30    300.00

CCHV    0.300 CEHV    0.500
*SECNO 7375.000

3470 ENCROACHMENT STATIONS      232.0     272.0  TYPE      1  TARGET       40.000

        BD

  7375.00     7.30   598.80     0.0       0.0    598.93     0.14      0.33      0.03    599.50
     530.       0.     530.      0.        0.     180.       0.      190.      47.  100000.00
     2.84     0.0      2.95     0.0      0.030    0.040     0.030     0.042    591.50    233.37
 0.000944     420.     420.     420.        2        0         0     -0.00     38.63    272.00

CCHV    0.300 CEHV    0.500
*SECNO 7475.000

        BE   BAY ROAD CULVERT, INVERT 590.9, CROWN 599.7, TR 601.8

             ELLIPTICAL CONCRETE PIPE 13'10  X 8'10  X 86'

  7475.00     7.92   598.82     0.0       0.0    599.28     0.46      0.19      0.16    601.80
     530.       0.     530.      0.        0.      97.       0.      191.      47.     601.80
     2.85     0.0      5.46     0.0      0.030    0.050     0.030     0.042    590.90    193.00
 0.005570     100.     100.     100.        2        0         0     -0.00     14.00    207.00
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*SECNO 7476.000

3370 NORMAL BRIDGE,NRD 13 MIN ELTRD 601.80 MAX ELLC 602.20

7476.00	7.38	598.78	0.0	0.0	599.32	0.54	0.00	0.04	601.80
530.	0.	530.	0.	0.	90.	0.	191.	47.	601.80
2.85	0.0	5.90	0.0	0.030	0.012	0.030	0.042	590.90	193.00
0.000457	1.	1.	1.	2	0	0	-6.69	14.00	207.00

*SECNO 7477.000

3370 NORMAL BRIDGE,NRD 13 MIN ELTRD 601.80 MAX ELLC 602.20

7477.00	7.93	598.83	0.0	0.0	599.36	0.54	0.04	0.00	601.80
530.	0.	530.	0.	0.	90.	0.	191.	47.	601.80
2.85	0.0	5.88	0.0	0.030	0.012	0.030	0.042	590.90	193.00
0.000454	86.	86.	86.	2	0	0	-6.93	14.00	207.00

*SECNO 7478.000

SECNO	DEPTH	CHSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
7478.00	8.04	596.94	0.0	0.0	599.39	0.45	0.00	0.03	601.80
530.	0.	530.	0.	0.	99.	0.	191.	47.	601.80
2.85	0.0	5.37	0.0	0.030	0.012	0.030	0.042	590.90	193.00
0.000307	1.	1.	1.	2	0	0	-0.00	14.00	207.00

*SECNO 7575.000

3470 ENCROACHMENT STATIONS 237.0 279.0 TYPE 1 TARGET 42.000

BF									
7575.00	8.34	599.44	0.0	0.0	599.55	0.11	0.06	0.10	599.00
530.	0.	530.	0.	0.	199.	0.	191.	47.	100000.00
2.86	0.0	2.66	0.0	0.030	0.055	0.030	0.042	591.10	237.00
0.001325	100.	100.	100.	2	0	0	-0.00	40.56	277.56

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

KOCHVILLE DRAIN

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
13340.000	581.00	0.0	581.32	67.00	0.0	910.00	0.0	0.0	0.0	250.00	341.00	0.0
13340.000	581.10	0.0	581.40	67.36	0.0	910.00	0.0	0.0	0.0	250.00	341.00	0.0
14530.000	582.16	0.0	582.24	84.44	0.0	910.00	0.0	0.0	0.0	226.00	319.00	0.0
14530.000	582.20	0.0	582.28	84.53	0.0	910.00	0.0	0.0	0.0	226.00	319.00	0.0
14580.000	582.11	0.0	582.29	48.58	0.0	910.00	0.0	0.0	0.0	250.00	303.00	0.0
14580.000	582.15	0.0	582.33	48.63	0.0	910.00	0.0	0.0	0.0	250.00	303.00	0.0
14581.000	582.12	0.0	582.30	48.58	0.0	910.00	0.0	0.0	0.0	250.00	303.00	0.0
14581.000	582.16	0.0	582.34	48.63	0.0	910.00	0.0	0.0	0.0	250.00	303.00	0.0
14630.000	582.27	0.0	582.34	84.47	0.0	910.00	0.0	0.0	0.0	228.00	321.00	0.0
14630.000	582.30	0.0	582.37	84.59	0.0	910.00	0.0	0.0	0.0	228.00	321.00	0.0
16240.000	582.66	0.0	582.69	119.35	0.0	910.00	0.0	134.00	142.00	142.00	276.00	276.00
16240.000	582.68	0.0	582.72	119.44	0.0	910.00	0.0	134.00	142.00	142.00	276.00	276.00
17240.000	582.37	0.0	582.98	92.99	0.0	910.00	0.0	106.00	247.00	247.00	353.00	353.00
17240.000	582.89	0.0	583.00	93.07	0.0	910.00	0.0	106.00	247.00	247.00	353.00	353.00
17290.000	582.97	0.0	583.11	70.00	0.0	910.00	0.0	0.0	0.0	250.00	320.00	0.0
17290.000	582.99	0.0	583.13	70.00	0.0	910.00	0.0	0.0	0.0	250.00	320.00	0.0
17291.000	582.99	0.0	583.13	70.00	0.0	910.00	0.0	0.0	0.0	250.00	320.00	0.0
17291.000	583.01	0.0	583.15	70.00	0.0	910.00	0.0	0.0	0.0	250.00	320.00	0.0
17340.000	583.16	0.0	583.20	150.00	0.0	910.00	0.0	150.00	200.00	200.00	350.00	350.00
17340.000	583.18	0.0	583.22	150.00	0.0	910.00	0.0	150.00	200.00	200.00	350.00	350.00
17415.000	583.30	0.0	583.38	76.60	0.0	910.00	0.0	180.00	183.00	233.00	313.00	363.00
17415.000	583.31	0.0	583.40	76.66	0.0	910.00	0.0	180.00	183.00	233.00	313.00	363.00
17465.000	583.11	0.0	583.77	80.00	0.0	910.00	0.0	0.0	0.0	240.00	320.00	0.0
17465.000	583.13	0.0	583.77	80.00	0.0	910.00	0.0	0.0	0.0	240.00	320.00	0.0
17466.000	583.27	0.0	583.83	80.00	0.0	910.00	0.0	0.0	0.0	240.00	320.00	0.0
17466.000	583.28	0.0	583.83	80.00	0.0	910.00	0.0	0.0	0.0	240.00	320.00	0.0

SECND	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROD	PERENC	STENCL	STCHL	STCHR	STENCR
17467.000	583.90	0.0	584.00	76.53	0.0	910.00	0.0	0.0	0.0	250.00	330.00	0.0
17467.000	583.90	0.0	584.00	76.53	0.0	910.00	0.0	0.0	0.0	250.00	330.00	0.0
17468.000	583.90	0.0	584.00	76.54	0.0	910.00	0.0	0.0	0.0	250.00	330.00	0.0
17468.000	583.90	0.0	584.00	76.54	0.0	910.00	0.0	0.0	0.0	250.00	330.00	0.0
17515.000	583.94	0.0	584.02	75.97	0.0	910.00	0.0	0.0	0.0	256.00	340.00	0.0
17515.000	583.94	0.0	584.02	75.97	0.0	910.00	0.0	0.0	0.0	256.00	340.00	0.0
17600.000	583.92	0.0	584.08	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17600.000	583.92	0.0	584.08	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17601.000	583.92	0.0	584.08	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17601.000	583.92	0.0	584.08	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17602.000	583.95	0.0	584.10	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17602.000	583.95	0.0	584.10	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17603.000	583.95	0.0	584.10	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17603.000	583.95	0.0	584.11	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17665.000	583.96	0.0	584.11	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17665.000	583.96	0.0	584.11	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17666.000	583.96	0.0	584.11	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17666.000	583.96	0.0	584.11	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17667.000	583.98	0.0	584.14	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17667.000	583.98	0.0	584.14	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17668.000	583.98	0.0	584.14	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17668.000	583.98	0.0	584.14	46.00	0.0	910.00	0.0	0.0	0.0	253.00	299.00	0.0
17715.000	534.13	0.0	584.19	84.46	0.0	910.00	0.0	140.00	215.00	242.00	329.00	355.00
17715.000	584.14	0.0	584.19	84.46	0.0	910.00	0.0	140.00	215.00	242.00	329.00	355.00
17915.000	584.19	0.0	584.23	84.64	0.0	780.00	0.0	150.00	200.00	242.00	329.00	350.00
17915.000	584.19	0.0	584.23	84.64	0.0	780.00	0.0	150.00	200.00	242.00	329.00	350.00
18940.000	584.39	0.0	584.44	124.26	0.0	779.13	0.87	310.00	230.00	242.00	329.00	540.00
18940.000	584.39	0.0	584.44	124.31	0.0	779.13	0.87	310.00	230.00	242.00	329.00	540.00
19840.000	584.52	0.0	584.53	370.00	67.28	435.78	276.94	370.00	100.00	155.00	236.00	470.00
19840.000	584.52	0.0	584.53	370.00	67.28	435.78	276.95	370.00	100.00	155.00	236.00	470.00
21040.000	584.63	0.0	584.64	327.49	302.70	364.66	112.64	330.00	0.00	155.00	236.00	330.00
21040.000	584.63	0.0	584.64	327.49	302.70	364.65	112.65	330.00	0.00	155.00	236.00	330.00
22340.000	584.83	0.0	584.91	60.36	0.0	780.00	0.0	64.00	243.00	243.00	307.00	307.00
22340.000	584.83	0.0	584.91	60.36	0.0	780.00	0.0	64.00	243.00	243.00	307.00	307.00
22390.000	584.85	0.0	584.95	51.25	0.0	780.00	0.0	62.00	245.00	245.00	307.00	307.00
22390.000	584.85	0.0	584.95	51.25	0.0	780.00	0.0	62.00	245.00	245.00	307.00	307.00
22391.000	584.85	0.0	584.96	51.25	0.0	780.00	0.0	62.00	245.00	245.00	307.00	307.00
22391.000	584.85	0.0	584.96	51.25	0.0	780.00	0.0	62.00	245.00	245.00	307.00	307.00

SECND	CASEL	DIFKUS	EG	TOPWID	QLOB	QCH	QRDB	PERENC	STENCL	STCHL	STCHR	STENCR
22440.000	584.92	0.0	584.99	60.93	0.0	780.00	0.0	70.00	233.00	241.00	303.00	303.00
22440.000	584.92	0.0	584.99	60.93	0.0	780.00	0.0	70.00	233.00	241.00	303.00	303.00
22665.000	585.01	0.0	585.12	50.00	0.0	780.00	0.0	50.00	240.00	240.00	290.00	290.00
22665.000	585.01	0.0	585.12	50.00	0.0	780.00	0.0	50.00	240.00	240.00	290.00	290.00
22715.000	585.08	0.0	585.23	40.05	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22715.000	585.08	0.0	585.23	40.05	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22716.000	585.07	0.0	585.24	40.06	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22716.000	585.07	0.0	585.24	40.06	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22717.000	585.14	0.0	585.31	40.08	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22717.000	585.14	0.0	585.31	40.08	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22871.000	585.16	0.0	585.31	40.10	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22871.000	585.16	0.0	585.31	40.10	0.0	780.00	0.0	0.0	0.0	251.00	292.00	0.0
22730.000	585.22	0.0	585.34	50.40	0.0	780.00	0.0	53.00	243.00	243.00	296.00	296.00
22730.000	585.22	0.0	585.34	50.41	0.0	780.00	0.0	53.00	243.00	243.00	296.00	296.00
23090.000	585.43	0.0	585.54	50.63	0.0	780.00	0.0	53.00	243.00	243.00	296.00	296.00
23090.000	585.43	0.0	585.54	50.63	0.0	780.00	0.0	53.00	243.00	243.00	296.00	296.00
23140.000	585.43	0.0	585.60	38.23	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23140.000	585.43	0.0	585.60	38.23	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23141.000	585.43	0.0	585.60	38.23	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23141.000	585.43	0.0	585.60	38.23	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23142.000	585.45	0.0	585.61	38.24	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23142.000	585.45	0.0	585.61	38.24	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23143.000	585.45	0.0	585.61	38.24	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23143.000	585.45	0.0	585.61	38.24	0.0	780.00	0.0	40.00	250.00	250.00	290.00	290.00
23190.000	585.55	0.0	585.66	50.45	0.0	780.00	0.0	54.00	244.00	244.00	298.00	298.00
23190.000	585.55	0.0	585.66	50.45	0.0	780.00	0.0	54.00	244.00	244.00	298.00	298.00
24530.000	586.90	0.0	587.23	31.52	0.0	780.00	0.0	36.00	132.00	132.00	168.00	168.00
24530.000	586.90	0.0	587.23	31.52	0.0	780.00	0.0	36.00	132.00	132.00	168.00	168.00
250.000	587.48	0.0	587.60	32.89	0.0	530.00	0.0	36.00	132.00	132.00	168.00	168.00
250.000	587.48	0.0	587.60	32.89	0.0	530.00	0.0	36.00	132.00	132.00	168.00	168.00
300.000	587.50	0.0	588.03	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
300.000	587.50	0.0	588.03	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
301.000	587.41	0.0	588.13	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
301.000	587.41	0.0	588.13	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
302.000	587.62	0.0	588.31	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
302.000	587.62	0.0	588.31	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
303.000	587.90	0.0	588.38	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0
303.000	587.90	0.0	588.38	13.00	0.0	530.00	0.0	0.0	0.0	193.50	206.50	0.0

SECND	CWSEL	DIFKWS	EG	TOP.ID	QLOB	CCH	QROB	PERE.C	STENCL	STCHL	STCHR	STENCR
350.000	589.57	0.0	588.66	39.97	0.0	530.00	0.0	41.00	130.00	130.00	171.00	171.00
350.000	589.57	0.0	588.66	39.97	0.0	530.00	0.0	41.00	130.00	130.00	171.00	171.00
1550.000	589.57	0.0	589.68	39.94	0.0	530.00	0.0	40.00	237.00	237.00	277.00	277.00
1550.000	589.57	0.0	589.68	39.94	0.0	530.00	0.0	40.00	237.00	237.00	277.00	277.00
2800.000	590.63	0.0	590.71	80.00	77.72	425.90	26.38	80.00	210.00	236.00	268.00	290.00
2800.000	590.63	0.0	590.71	80.00	77.72	425.90	26.38	80.00	210.00	236.00	268.00	290.00
2850.000	590.59	0.0	591.08	80.00	3.66	524.51	1.83	80.00	160.00	194.10	205.90	240.00
2850.000	590.59	0.0	591.08	80.00	3.66	524.51	1.83	80.00	160.00	194.10	205.90	240.00
2851.000	590.98	0.0	591.29	80.00	47.57	458.65	23.78	80.00	160.00	194.10	205.90	240.00
2851.000	590.98	0.0	591.29	80.00	47.57	458.65	23.78	80.00	160.00	194.10	205.90	240.00
2900.000	591.42	0.0	591.48	80.00	71.69	364.12	94.20	80.00	210.00	233.00	263.00	290.00
2900.000	591.42	0.0	591.48	80.00	71.69	364.12	94.20	80.00	210.00	233.00	263.00	290.00
3500.000	591.71	0.0	591.77	80.00	84.53	346.05	99.42	80.00	210.00	233.00	263.00	290.00
3500.000	591.71	0.0	591.77	80.00	84.53	346.05	99.42	80.00	210.00	233.00	263.00	290.00
3600.000	591.20	0.0	592.18	47.93	0.72	517.54	11.74	80.00	160.00	195.50	204.50	240.00
3600.000	591.20	0.0	592.18	47.93	0.72	517.54	11.74	80.00	160.00	195.50	204.50	240.00
3601.000	592.18	0.0	592.39	80.00	162.05	273.20	94.76	80.00	160.00	195.50	204.50	240.00
3601.000	592.18	0.0	592.39	80.00	162.05	273.20	94.76	80.00	160.00	195.50	204.50	240.00
3700.000	592.46	0.0	592.54	80.00	4.35	421.35	103.80	80.00	210.00	239.00	268.00	290.00
3700.000	592.46	0.0	592.54	80.00	4.35	421.35	103.80	80.00	210.00	239.00	268.00	290.00
4400.000	592.92	0.0	592.98	80.00	25.40	393.85	110.75	80.00	210.00	239.00	268.00	290.00
4400.000	592.92	0.0	592.98	80.00	25.40	393.85	110.75	80.00	210.00	239.00	268.00	290.00
4500.000	592.95	0.0	593.10	80.00	116.58	284.86	128.56	80.00	160.00	195.00	205.00	240.00
4500.000	592.95	0.0	593.10	80.00	116.58	284.86	128.56	80.00	160.00	195.00	205.00	240.00
4501.000	593.15	0.0	593.26	80.00	203.49	214.50	112.00	80.00	160.00	195.00	205.00	240.00
4501.000	593.15	0.0	593.26	80.00	203.49	214.50	112.00	80.00	160.00	195.00	205.00	240.00
4600.000	593.27	0.0	593.34	80.00	17.09	379.25	133.67	80.00	210.00	239.00	268.00	290.00
4600.000	593.27	0.0	593.34	80.00	17.09	379.25	133.67	80.00	210.00	239.00	268.00	290.00
4950.000	593.45	0.0	593.51	80.00	24.83	356.74	148.43	80.00	210.00	239.00	268.00	290.00
4950.000	593.45	0.0	593.51	80.00	24.83	356.74	148.43	80.00	210.00	239.00	268.00	290.00
5050.000	592.89	0.0	593.94	9.00	0.0	530.00	0.0	80.00	160.00	195.50	204.50	240.00
5050.000	592.89	0.0	593.94	9.00	0.0	530.00	0.0	80.00	160.00	195.50	204.50	240.00
5051.000	594.47	0.0	595.17	9.00	0.0	530.00	0.0	9.00	195.50	195.50	204.50	204.50
5051.000	594.47	0.0	595.17	9.00	0.0	530.00	0.0	9.00	195.50	195.50	204.50	204.50
5150.000	595.30	0.0	595.35	80.00	34.77	383.98	111.25	80.00	210.00	239.00	268.00	290.00
5150.000	595.30	0.0	595.35	80.00	34.77	383.98	111.25	80.00	210.00	239.00	268.00	290.00
5250.000	595.33	0.0	595.46	80.00	77.31	331.72	120.96	80.00	160.00	194.50	205.50	240.00
5250.000	595.33	0.0	595.46	80.00	77.31	331.72	120.96	80.00	160.00	194.50	205.50	240.00

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCFL	STCHR	STENCR
5251.000	595.54	0.0	595.64	80.00	170.44	250.87	108.70	80.00	160.00	194.50	205.50	240.00
5251.000	595.54	0.0	595.64	80.00	170.44	250.87	108.70	80.00	160.00	194.50	205.50	240.00
5350.000	595.66	0.0	595.70	80.00	70.41	341.29	118.30	80.00	210.00	239.00	268.00	290.00
5350.000	595.66	0.0	595.70	80.00	70.41	341.29	118.30	80.00	210.00	239.00	268.00	290.00
5550.000	595.72	0.0	595.77	80.00	74.09	355.34	100.57	80.00	210.00	239.00	268.00	290.00
5550.000	595.72	0.0	595.77	80.00	74.09	355.34	100.57	80.00	210.00	239.00	268.00	290.00
5650.000	595.71	0.0	595.95	80.00	114.24	350.47	65.28	80.00	160.00	195.50	204.50	240.00
5650.000	595.71	0.0	595.95	80.00	114.24	350.47	65.28	80.00	160.00	195.50	204.50	240.00
5651.000	596.17	0.0	596.32	80.00	168.34	265.46	95.19	80.00	160.00	195.50	204.50	240.00
5651.000	596.17	0.0	596.32	80.00	168.34	265.46	95.19	80.00	160.00	195.50	204.50	240.00
5750.000	596.38	0.0	596.42	80.00	56.26	347.23	126.51	80.00	210.00	239.00	268.00	290.00
5750.000	596.38	0.0	596.42	80.00	56.26	347.23	126.51	80.00	210.00	239.00	268.00	290.00
5850.000	596.38	0.0	596.49	80.00	220.57	177.32	132.11	80.00	160.00	195.50	204.50	240.00
5850.000	596.38	0.0	596.49	80.00	220.57	177.32	132.11	80.00	160.00	195.50	204.50	240.00
5851.000	596.54	0.0	596.54	80.00	229.48	165.19	136.32	80.00	160.00	195.50	204.50	240.00
5851.000	596.54	0.0	596.54	80.00	229.48	165.19	136.32	80.00	160.00	195.50	204.50	240.00
6000.000	596.68	0.0	596.88	80.00	161.66	280.84	87.50	80.00	160.00	195.50	204.50	240.00
6000.000	596.68	0.0	596.88	80.00	161.66	280.84	87.50	80.00	160.00	195.50	204.50	240.00
6001.000	596.96	0.0	597.11	80.00	188.79	237.85	103.36	80.00	160.00	195.50	204.50	240.00
6001.000	596.96	0.0	597.11	80.00	188.79	237.85	103.36	80.00	160.00	195.50	204.50	240.00
6100.000	597.13	0.0	597.34	52.65	70.87	459.12	0.0	80.00	210.00	239.00	263.00	290.00
6100.000	597.13	0.0	597.34	52.65	70.87	459.12	0.0	80.00	210.00	239.00	263.00	290.00
6750.000	598.11	0.0	598.22	80.00	101.03	414.65	14.32	80.00	210.00	239.00	263.00	290.00
6750.000	598.11	0.0	598.22	80.00	101.03	414.65	14.32	80.00	210.00	239.00	263.00	290.00
6850.000	598.22	0.0	598.33	100.00	179.51	219.39	131.09	100.00	150.00	195.50	204.50	250.00
6850.000	598.22	0.0	598.33	100.00	179.51	219.39	131.09	100.00	150.00	195.50	204.50	250.00
6851.000	598.39	0.0	598.48	100.00	187.07	201.88	141.06	100.00	150.00	195.50	204.50	250.00
6851.000	598.39	0.0	598.48	100.00	187.07	201.88	141.06	100.00	150.00	195.50	204.50	250.00
6950.000	598.50	0.0	598.57	90.30	167.44	361.27	1.30	100.00	200.00	235.00	262.00	300.00
6950.000	598.50	0.0	598.57	90.30	167.44	361.27	1.30	100.00	200.00	235.00	262.00	300.00
7375.000	598.80	0.0	598.93	38.63	0.0	530.00	0.0	40.00	232.00	232.00	272.00	272.00
7375.000	598.80	0.0	598.93	38.63	0.0	530.00	0.0	40.00	232.00	232.00	272.00	272.00
7475.000	598.82	0.0	599.28	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7475.000	598.82	0.0	599.28	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7476.000	598.78	0.0	599.32	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7476.000	598.78	0.0	599.32	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7477.000	598.83	0.0	599.36	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7477.000	598.83	0.0	599.36	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0

CORE BUSINESS FORMS INC 27

SECND	CWSEL	DIFKWS	EG	TOPWID	CLOP	CCH	ORDP	PERENC	STENCL	STCHL	STCHR	STENCR
7478.000	593.94	0.0	599.39	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7478.000	593.94	0.0	599.39	14.00	0.0	530.00	0.0	0.0	0.0	193.00	207.00	0.0
7575.000	599.44	0.0	599.55	40.56	0.0	530.00	0.0	42.00	237.00	237.00	279.00	279.00
7575.000	599.44	0.0	599.55	40.56	0.0	530.00	0.0	42.00	237.00	237.00	279.00	279.00

KOCHVILLE DRAIN

SUMMARY PRINTOUT TABLE 150

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRITS	EG	10K*S	VCH	AREA	.01R
13340.000	0.0	0.0	0.0	575.70	910.00	581.00	0.0	581.32	27.31	4.55	199.97	174.13
13340.000	0.0	0.0	0.0	575.70	910.00	581.10	0.0	581.40	24.66	4.40	206.70	183.25
14530.000	1190.00	0.0	0.0	575.30	910.00	582.16	0.0	582.24	3.44	2.22	409.69	490.99
14530.000	1190.00	0.0	0.0	575.30	910.00	582.20	0.0	582.28	3.36	2.20	412.82	496.80
14580.000	50.00	0.0	0.0	574.40	910.00	582.11	0.0	582.29	7.88	3.47	261.98	324.21
14580.000	50.00	0.0	0.0	574.40	910.00	582.15	0.0	582.33	7.70	3.45	263.95	327.89
14581.000	10.00	0.0	0.0	574.40	910.00	582.12	0.0	582.30	7.85	3.47	262.24	324.69
14581.000	10.00	0.0	0.0	574.40	910.00	582.16	0.0	582.34	7.58	3.44	264.20	328.35
14630.000	50.00	0.0	0.0	572.80	910.00	582.27	0.0	582.34	3.13	2.15	422.50	514.60
14630.000	50.00	0.0	0.0	572.30	910.00	582.30	0.0	582.37	3.06	2.14	425.66	520.45
16240.000	1610.00	0.0	0.0	575.90	910.00	582.66	0.0	582.69	1.61	1.55	588.98	717.98
16240.000	1610.00	0.0	0.0	575.90	910.00	582.68	0.0	582.72	1.58	1.54	592.57	724.86
17240.000	900.00	0.0	0.0	576.30	910.00	582.87	0.0	582.98	7.14	2.67	341.37	340.66
17240.000	900.00	0.0	0.0	576.30	910.00	582.89	0.0	583.00	6.98	2.65	343.71	344.32
17290.000	150.00	0.0	0.0	576.40	910.00	582.97	0.0	583.11	7.86	3.01	301.88	324.61
17290.000	150.00	0.0	0.0	576.40	910.00	582.99	0.0	583.13	7.73	3.00	303.50	327.39
17291.000	9.00	587.20	583.60	576.40	910.00	582.99	0.0	583.13	7.72	3.00	303.52	327.41
17291.000	9.00	587.20	583.60	576.40	910.00	583.01	0.0	583.15	7.60	2.98	305.11	330.14
17340.000	100.00	0.0	0.0	576.40	910.00	583.16	0.0	583.20	2.31	1.56	581.50	598.55
17340.000	100.00	0.0	0.0	576.40	910.00	583.18	0.0	583.22	2.27	1.56	584.61	603.79
17415.000	600.00	0.0	0.0	576.30	910.00	583.30	0.0	583.38	3.43	2.30	395.36	491.37
17415.000	600.00	0.0	0.0	576.30	910.00	583.31	0.0	583.40	3.39	2.29	397.28	494.03
17465.000	100.00	0.0	0.0	580.80	910.00	583.11	0.0	583.77	114.07	6.51	139.80	85.20
17465.000	100.00	0.0	0.0	580.80	910.00	583.13	0.0	583.77	108.96	6.42	141.77	87.18
17466.000	5.00	591.00	585.30	580.80	910.00	583.27	0.0	583.83	44.98	6.02	151.24	135.69
17466.000	5.00	591.00	585.30	580.80	910.00	583.28	0.0	583.83	43.63	5.96	152.66	137.77
17467.000	44.00	590.40	587.60	576.20	910.00	583.90	0.0	584.00	2.31	2.49	365.56	598.54
17467.000	44.00	590.40	587.60	576.20	910.00	583.90	0.0	584.00	2.31	2.49	365.64	598.73
17468.000	5.00	0.0	0.0	576.20	910.00	583.90	0.0	584.00	3.30	2.48	366.42	500.63
17468.000	5.00	0.0	0.0	576.20	910.00	583.90	0.0	584.00	3.30	2.48	366.48	500.76
17515.000	70.00	0.0	0.0	576.70	910.00	583.94	0.0	584.02	2.34	2.26	403.04	595.00
17515.000	70.00	0.0	0.0	576.70	910.00	583.94	0.0	584.02	2.34	2.26	403.10	595.11
17600.000	70.00	0.0	0.0	576.10	910.00	583.92	0.0	584.08	4.53	3.20	284.25	427.62
17600.000	70.00	0.0	0.0	576.10	910.00	583.92	0.0	584.08	4.53	3.20	284.27	427.67
17601.000	1.00	588.60	584.90	576.10	910.00	583.92	0.0	584.08	3.14	3.20	284.25	513.14
17601.000	1.00	588.60	584.90	576.10	910.00	583.92	0.0	584.08	3.14	3.20	284.28	513.23

E BUSINESS FORMS INC 27

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOKSS	VCH	AREA	.01K
17602.000	67.50	588.60	584.90	576.10	910.00	583.95	0.0	584.10	3.11	3.19	285.44	516.40
17602.000	67.50	588.60	584.90	576.10	910.00	583.95	0.0	584.10	3.10	3.19	285.47	516.49
17603.000	1.00	0.0	0.0	576.10	910.00	583.95	0.0	584.10	3.11	3.19	285.30	516.03
17603.000	1.00	0.0	0.0	576.10	910.00	583.95	0.0	584.11	3.11	3.19	285.32	516.09
17665.000	30.00	0.0	0.0	576.10	910.00	583.96	0.0	584.11	3.10	3.18	285.72	517.17
17665.000	30.00	0.0	0.0	576.10	910.00	583.96	0.0	584.11	3.10	3.18	285.75	517.26
17666.000	1.00	588.60	584.90	576.10	910.00	583.96	0.0	584.11	3.10	3.18	285.75	517.26
17666.000	1.00	588.60	584.90	576.10	910.00	583.96	0.0	584.11	3.09	3.18	285.79	517.35
17667.000	67.50	588.60	584.90	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.72	519.90
17667.000	67.50	588.60	584.90	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.74	519.97
17668.000	1.00	0.0	0.0	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.78	520.09
17668.000	1.00	0.0	0.0	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.81	520.15
17715.000	100.00	0.0	0.0	576.20	910.00	584.13	0.0	584.19	2.02	1.89	481.98	640.31
17715.000	100.00	0.0	0.0	576.20	910.00	584.14	0.0	584.19	2.02	1.89	482.02	640.40
17915.000	200.00	0.0	0.0	576.20	780.00	584.19	0.0	584.23	1.45	1.60	485.25	648.75
17915.000	200.00	0.0	0.0	576.20	780.00	584.19	0.0	584.23	1.45	1.60	486.29	648.83
18940.000	1200.00	0.0	0.0	577.20	780.00	584.39	0.0	584.44	2.23	1.85	430.58	522.75
18940.000	1200.00	0.0	0.0	577.20	780.00	584.39	0.0	584.44	2.23	1.85	430.64	522.83
19840.000	800.00	0.0	0.0	578.00	780.00	584.52	0.0	584.53	0.64	1.02	1587.34	975.85
19840.000	800.00	0.0	0.0	578.00	780.00	584.52	0.0	584.53	0.64	1.02	1587.52	976.02
21040.000	1200.00	0.0	0.0	579.00	780.00	584.63	0.0	584.64	1.38	1.03	1115.89	664.21
21040.000	1200.00	0.0	0.0	579.00	780.00	584.63	0.0	584.64	1.38	1.03	1116.05	664.36
22340.000	1000.00	0.0	0.0	576.60	780.00	584.83	0.0	584.91	4.77	2.23	350.00	357.23
22340.000	1000.00	0.0	0.0	576.60	780.00	584.83	0.0	584.91	4.77	2.23	350.01	357.23
22390.000	50.00	0.0	0.0	577.80	780.00	584.85	0.0	584.95	6.78	2.56	304.23	299.49
22390.000	50.00	0.0	0.0	577.80	780.00	584.85	0.0	584.95	6.78	2.56	304.26	299.53
22391.000	10.00	0.0	0.0	577.80	780.00	584.85	0.0	584.96	6.76	2.56	304.53	299.94
22391.000	10.00	0.0	0.0	577.80	780.00	584.85	0.0	584.96	6.76	2.56	304.57	300.00
22440.000	50.00	0.0	0.0	577.50	780.00	584.92	0.0	584.99	4.73	2.21	353.30	358.71
22440.000	50.00	0.0	0.0	577.50	780.00	584.92	0.0	584.99	4.73	2.21	353.31	358.73
22665.000	200.00	0.0	0.0	578.00	780.00	585.01	0.0	585.12	7.84	2.69	289.73	278.63
22665.000	200.00	0.0	0.0	578.00	780.00	585.01	0.0	585.12	7.83	2.69	289.75	278.67
22715.000	100.00	0.0	0.0	577.00	780.00	585.08	0.0	585.23	10.41	3.18	245.05	241.73
22715.000	100.00	0.0	0.0	577.00	780.00	585.08	0.0	585.23	10.41	3.18	245.06	241.74
22716.000	1.00	586.90	584.90	577.00	780.00	585.07	0.0	585.24	25.72	3.28	238.13	153.80
22716.000	1.00	586.90	584.90	577.00	780.00	585.07	0.0	585.24	25.72	3.28	238.13	153.80
22717.000	26.00	586.90	584.90	577.00	780.00	585.14	0.0	585.31	25.72	3.28	238.13	153.80
22717.000	26.00	586.90	584.90	577.00	780.00	585.14	0.0	585.31	25.72	3.28	238.13	153.80

SECNO	XLCH	ELTRD	ELLC	ECPIN	Z	CWSEC	CRITS	ES	LOSS	VCH	AREA	.01K
22871.000	1.00	0.0	0.0	577.00	780.00	585.16	0.0	585.31	10.03	3.14	248.18	246.33
22871.000	1.00	0.0	0.0	577.00	780.00	585.16	0.0	585.31	10.03	3.14	248.19	246.35
22730.000	15.00	0.0	0.0	578.20	780.00	585.22	0.0	585.34	8.11	2.76	282.45	273.94
22730.000	15.00	0.0	0.0	578.20	780.00	585.22	0.0	585.34	8.11	2.76	282.46	273.96
23090.000	350.00	0.0	0.0	578.20	780.00	585.43	0.0	585.54	4.38	2.66	293.23	372.68
23090.000	350.00	0.0	0.0	578.20	780.00	585.43	0.0	585.54	4.38	2.66	293.21	372.65
23140.000	50.00	0.0	0.0	577.60	780.00	585.43	0.0	585.60	8.53	3.26	238.90	267.13
23140.000	50.00	0.0	0.0	577.60	780.00	585.43	0.0	585.60	8.53	3.26	238.91	267.14
23141.000	1.00	587.60	586.20	577.60	780.00	585.43	0.0	585.60	8.52	3.26	238.92	267.16
23141.000	1.00	587.60	586.20	577.60	780.00	585.43	0.0	585.60	8.52	3.26	238.93	267.17
23142.000	16.00	587.60	586.20	577.60	780.00	585.45	0.0	585.61	8.47	3.26	239.44	268.01
23142.000	16.00	587.60	586.20	577.60	780.00	585.45	0.0	585.61	8.47	3.26	239.45	268.03
23143.000	1.00	0.0	0.0	577.60	780.00	585.45	0.0	585.61	8.46	3.26	239.51	268.12
23143.000	1.00	0.0	0.0	577.60	780.00	585.45	0.0	585.61	8.46	3.26	239.52	268.13
23190.000	50.00	0.0	0.0	577.60	780.00	585.55	0.0	585.66	5.74	2.70	288.50	325.49
23190.000	50.00	0.0	0.0	577.60	780.00	585.55	0.0	585.66	5.74	2.70	288.52	325.51
24530.000	1340.00	0.0	0.0	578.50	780.00	586.90	0.0	587.23	31.01	4.59	169.76	140.07
24530.000	1340.00	0.0	0.0	578.50	780.00	586.90	0.0	587.23	31.01	4.59	169.77	140.08
250.000	185.00	0.0	0.0	578.50	530.00	587.48	0.0	587.60	10.81	2.82	188.25	161.21
250.000	185.00	0.0	0.0	578.50	530.00	587.48	0.0	587.60	10.81	2.82	188.26	161.21
300.000	100.00	0.0	0.0	580.10	530.00	587.50	0.0	588.03	70.96	5.87	90.29	62.92
300.000	100.00	0.0	0.0	580.10	530.00	587.50	0.0	588.03	70.96	5.87	90.29	62.92
301.000	1.00	589.90	589.90	580.10	530.00	587.41	0.0	588.13	49.50	6.77	78.24	75.33
301.000	1.00	589.90	589.90	580.10	530.00	587.41	0.0	588.13	49.50	6.77	78.24	75.33
302.000	36.00	589.90	589.90	580.10	530.00	587.62	0.0	588.31	49.10	6.66	79.52	75.63
302.000	36.00	589.90	589.90	580.10	530.00	587.62	0.0	588.31	49.10	6.66	79.52	75.63
303.000	1.00	0.0	0.0	580.10	530.00	587.90	0.0	588.38	61.26	5.55	95.56	67.72
303.000	1.00	0.0	0.0	580.10	530.00	587.90	0.0	588.38	61.26	5.55	95.56	67.72
350.000	100.00	0.0	0.0	579.20	530.00	588.57	0.0	588.66	7.64	2.41	220.16	191.69
350.000	100.00	0.0	0.0	579.20	530.00	588.57	0.0	588.66	7.64	2.41	220.16	191.69
1550.000	1150.00	0.0	0.0	579.90	530.00	589.57	0.0	589.68	10.15	2.63	201.73	166.32
1550.000	1150.00	0.0	0.0	579.90	530.00	589.57	0.0	589.68	10.15	2.63	201.73	166.32
2800.000	1200.00	0.0	0.0	582.20	530.00	590.63	0.0	590.71	7.37	2.35	239.93	195.19
2800.000	1200.00	0.0	0.0	582.20	530.00	590.63	0.0	590.71	7.37	2.35	239.93	195.19
2850.000	100.00	0.0	0.0	582.20	530.00	590.59	0.0	591.08	63.90	5.61	99.59	66.30
2850.000	100.00	0.0	0.0	582.20	530.00	590.59	0.0	591.08	63.90	5.61	99.59	66.30
2851.000	30.00	590.50	589.60	582.20	530.00	590.98	0.0	591.29	41.63	4.68	130.75	82.14
2851.000	30.00	590.50	589.60	582.20	530.00	590.98	0.0	591.29	41.63	4.68	130.75	82.14

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	ES	IOKWS	VCH	AREA	.01K
2900.000	100.00	0.0	0.0	582.30	530.00	591.42	0.0	591.48	5.92	2.14	266.04	217.76
2900.000	100.00	0.0	0.0	582.30	530.00	591.42	0.0	591.48	5.92	2.14	266.04	217.76
3500.000	550.00	0.0	0.0	582.30	530.00	591.71	0.0	591.77	4.54	1.93	283.91	248.66
3500.000	550.00	0.0	0.0	582.30	530.00	591.71	0.0	591.77	4.54	1.93	283.91	248.66
3600.000	100.00	0.0	0.0	583.70	530.00	591.20	588.77	592.18	168.56	8.02	71.98	40.82
3600.000	100.00	0.0	0.0	583.70	530.00	591.20	588.77	592.18	168.56	8.02	71.98	40.82
3601.000	20.00	591.00	589.80	583.70	530.00	592.18	0.0	592.39	30.58	3.72	153.58	95.84
3601.000	20.00	591.00	589.80	583.70	530.00	592.18	0.0	592.39	30.58	3.72	153.58	95.84
3700.000	100.00	0.0	0.0	583.70	530.00	592.46	0.0	592.54	7.83	2.47	233.87	189.38
3700.000	100.00	0.0	0.0	583.70	530.00	592.46	0.0	592.54	7.83	2.47	233.87	189.38
4400.000	680.00	0.0	0.0	583.70	530.00	592.92	0.0	592.98	5.34	2.15	270.07	229.27
4400.000	680.00	0.0	0.0	583.70	530.00	592.92	0.0	592.98	5.34	2.15	270.07	229.27
4500.000	100.00	0.0	0.0	583.70	530.00	592.95	0.0	593.10	19.41	3.23	181.98	120.30
4500.000	100.00	0.0	0.0	583.70	530.00	592.95	0.0	593.10	19.41	3.23	181.98	120.30
4501.000	20.30	591.30	590.30	583.70	530.00	593.15	0.0	593.26	10.23	2.38	215.90	165.69
4501.000	20.30	591.30	590.30	583.70	530.00	593.15	0.0	593.26	10.23	2.38	215.90	165.69
4600.000	100.00	0.0	0.0	584.50	530.00	593.27	0.0	593.34	5.44	2.14	267.38	227.15
4600.000	100.00	0.0	0.0	584.50	530.00	593.27	0.0	593.34	5.44	2.14	267.38	227.15
4950.000	350.00	0.0	0.0	584.50	530.00	593.45	0.0	593.51	4.38	1.96	281.67	253.37
4950.000	350.00	0.0	0.0	584.50	530.00	593.45	0.0	593.51	4.38	1.96	281.67	253.37
5050.000	100.00	0.0	0.0	585.30	530.00	592.89	0.0	593.94	179.44	3.19	64.72	39.57
5050.000	100.00	0.0	0.0	585.30	530.00	592.89	0.0	593.94	179.44	3.19	64.72	39.57
5051.000	21.00	594.40	591.50	585.30	530.00	594.47	0.0	595.17	110.82	6.72	78.91	50.35
5051.000	21.00	594.40	591.50	585.30	530.00	594.47	0.0	595.17	110.82	6.72	78.91	50.35
5150.000	100.00	0.0	0.0	585.40	530.00	595.30	0.0	595.35	3.91	1.92	294.58	268.05
5150.000	100.00	0.0	0.0	585.40	530.00	595.30	0.0	595.35	3.91	1.92	294.58	268.05
5250.000	100.00	0.0	0.0	585.40	530.00	595.33	0.0	595.46	17.39	3.19	185.60	127.09
5250.000	100.00	0.0	0.0	585.40	530.00	595.33	0.0	595.46	17.39	3.19	185.60	127.09
5251.000	22.00	593.80	592.50	585.40	530.00	595.54	0.0	595.64	9.25	2.36	222.47	174.28
5251.000	22.00	593.80	592.50	585.40	530.00	595.54	0.0	595.64	9.25	2.36	222.47	174.28
5350.000	100.00	0.0	0.0	585.20	530.00	595.66	0.0	595.70	2.38	1.58	345.25	343.71
5350.000	100.00	0.0	0.0	585.20	530.00	595.66	0.0	595.70	2.38	1.58	345.25	343.71
5550.000	200.00	0.0	0.0	586.10	530.00	595.72	0.0	595.77	3.87	1.86	296.30	269.49
5550.000	200.00	0.0	0.0	586.10	530.00	595.72	0.0	595.77	3.87	1.86	296.30	269.49
5650.000	100.00	0.0	0.0	586.10	530.00	595.71	0.0	595.95	39.41	4.21	140.51	84.43
5650.000	100.00	0.0	0.0	586.10	530.00	595.71	0.0	595.95	39.41	4.21	140.51	84.43
5651.000	20.50	594.90	592.20	586.10	530.00	596.17	0.0	596.32	19.21	3.04	177.55	120.93
5651.000	20.50	594.90	592.20	586.10	530.00	596.17	0.0	596.32	19.21	3.04	177.55	120.93

SECND	XLCH	ELTRD	ELLC	EL IN	Q	CWSEL	CRIWS	EG	ICK*S	VCH	AREA	.01K
5750.000	100.00	0.0	0.0	586.70	530.00	596.38	0.0	596.42	3.21	1.75	313.75	295.93
5750.000	100.00	0.0	0.0	586.70	530.00	596.38	0.0	596.42	3.21	1.75	313.75	295.93
5850.000	100.00	0.0	0.0	587.30	530.00	596.38	0.0	596.49	10.07	2.25	210.26	167.03
5850.000	100.00	0.0	0.0	587.30	530.00	596.38	0.0	596.49	10.07	2.25	210.26	167.03
5851.000	20.50	594.50	593.40	587.30	530.00	596.54	0.0	596.64	8.23	2.06	222.93	184.73
5851.000	20.50	594.50	593.40	587.30	530.00	596.54	0.0	596.64	8.23	2.06	222.93	184.73
6000.000	150.00	0.0	0.0	587.50	530.00	596.68	0.0	596.88	27.71	3.57	156.20	100.69
6000.000	150.00	0.0	0.0	587.50	530.00	596.68	0.0	596.88	27.71	3.57	156.20	100.69
6001.000	20.50	595.60	593.40	587.50	530.00	596.96	0.0	597.11	17.87	2.93	178.91	125.39
6001.000	20.50	595.60	593.40	587.50	530.00	596.96	0.0	597.11	17.87	2.93	178.91	125.39
6100.000	100.00	0.0	0.0	589.50	530.00	597.13	0.0	597.34	25.15	3.84	154.54	105.68
6100.000	100.00	0.0	0.0	589.50	530.00	597.13	0.0	597.34	25.15	3.84	154.54	105.68
6750.000	700.00	0.0	0.0	589.50	530.00	598.11	0.0	598.22	7.42	2.90	225.77	194.59
6750.000	700.00	0.0	0.0	589.50	530.00	598.11	0.0	598.22	7.42	2.90	225.77	194.59
6850.000	100.00	0.0	0.0	589.60	530.00	598.22	0.0	598.33	17.94	2.93	209.63	125.13
6850.000	100.00	0.0	0.0	589.60	530.00	598.22	0.0	598.33	17.94	2.93	209.63	125.13
6851.000	21.00	596.60	595.70	589.60	530.00	598.39	0.0	598.48	14.24	2.65	225.90	140.45
6851.000	21.00	596.60	595.70	589.60	530.00	598.39	0.0	598.48	14.24	2.65	225.90	140.45
6950.000	100.00	0.0	0.0	589.00	530.00	598.50	0.0	598.57	6.57	2.24	253.11	206.78
6950.000	100.00	0.0	0.0	589.00	530.00	598.50	0.0	598.57	6.57	2.24	253.11	206.78
7375.000	420.00	0.0	0.0	591.50	530.00	598.80	0.0	598.93	9.44	2.95	179.73	172.49
7375.000	420.00	0.0	0.0	591.50	530.00	598.80	0.0	598.93	9.44	2.95	179.73	172.49
7475.000	100.00	0.0	0.0	590.90	530.00	598.82	0.0	599.28	55.70	5.46	96.99	71.01
7475.000	100.00	0.0	0.0	590.90	530.00	598.82	0.0	599.28	55.70	5.46	96.99	71.01
7476.000	1.00	601.80	602.20	590.90	530.00	598.78	0.0	599.32	4.57	5.90	89.76	248.05
7476.000	1.00	601.80	602.20	590.90	530.00	598.78	0.0	599.32	4.57	5.90	89.76	248.05
7477.000	86.00	601.80	602.20	590.90	530.00	598.83	0.0	599.36	4.54	5.88	90.17	248.64
7477.000	86.00	601.90	602.20	590.90	530.00	598.83	0.0	599.36	4.54	5.88	90.17	248.64
7478.000	1.00	0.0	0.0	590.90	530.00	598.94	0.0	599.39	3.07	5.37	98.70	302.70
7478.000	1.00	0.0	0.0	590.90	530.00	598.94	0.0	599.39	3.07	5.37	98.70	302.70
7575.000	100.00	0.0	0.0	591.10	530.00	599.44	0.0	599.55	13.25	2.66	199.07	145.63
7575.000	100.00	0.0	0.0	591.10	530.00	599.44	0.0	599.55	13.25	2.66	199.07	145.63

KOCHVILLE DRAIN

SUMMARY PRINTOUT TABLE 150

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
13340.000	910.00	581.00	0.0	0.0	0.0	67.00	0.0
13340.000	910.00	581.10	0.10	0.0	0.0	67.36	0.0
14530.000	910.00	582.16	0.0	1.16	0.0	84.44	1190.00
14530.000	910.00	582.20	0.04	1.10	0.0	84.53	1190.00
14580.000	910.00	582.11	0.0	-0.05	0.0	48.58	50.00
14580.000	910.00	582.15	0.04	-0.05	0.0	48.63	50.00
14581.000	910.00	582.12	0.0	0.01	0.0	48.58	10.00
14581.000	910.00	582.16	0.04	0.01	0.0	48.63	10.00
14630.000	910.00	582.27	0.0	0.15	0.0	84.47	50.00
14630.000	910.00	582.30	0.04	0.15	0.0	84.59	50.00
16240.000	910.00	582.66	0.0	0.39	0.0	119.35	1610.00
16240.000	910.00	582.68	0.03	0.38	0.0	119.44	1610.00
17240.000	910.00	582.87	0.0	0.21	0.0	92.99	900.00
17240.000	910.00	582.89	0.03	0.21	0.0	93.07	900.00
17290.000	910.00	582.97	0.0	0.10	0.0	70.00	150.00
17290.000	910.00	582.99	0.02	0.09	0.0	70.00	150.00
17291.000	910.00	582.99	0.0	0.02	0.0	70.00	9.00
17291.000	910.00	583.01	0.02	0.02	0.0	70.00	9.00
17340.000	910.00	583.16	0.0	0.17	0.0	150.00	100.00
17340.000	910.00	583.18	0.02	0.17	0.0	150.00	100.00
17415.000	910.00	583.30	0.0	0.14	0.0	76.60	600.00
17415.000	910.00	583.31	0.02	0.13	0.0	76.66	600.00
17465.000	910.00	583.11	0.0	-0.19	0.0	80.00	100.00
17465.000	910.00	583.13	0.03	-0.18	0.0	80.00	100.00
17466.000	910.00	583.27	0.0	0.16	0.0	80.00	5.00
17466.000	910.00	583.28	0.01	0.15	0.0	80.00	5.00
17467.000	910.00	583.90	0.0	0.63	0.0	76.53	44.00
17467.000	910.00	583.90	0.00	0.62	0.0	75.53	44.00
17468.000	910.00	583.90	0.0	0.00	0.0	76.54	5.00
17468.000	910.00	583.90	0.00	0.00	0.0	76.54	5.00
17515.000	910.00	583.94	0.0	0.04	0.0	75.97	70.00
17515.000	910.00	583.94	0.00	0.04	0.0	75.97	70.00
17600.000	910.00	583.92	0.0	-0.02	0.0	46.00	70.00
17600.000	910.00	583.92	0.00	-0.02	0.0	46.00	70.00
17601.000	910.00	583.92	0.0	0.00	0.0	46.00	1.00
17601.000	910.00	583.92	0.00	0.00	0.0	46.00	1.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
17602.000	910.00	583.95	0.0	0.02	0.0	46.00	67.50
17602.000	910.00	583.95	0.00	0.02	0.0	46.00	67.50
17603.000	910.00	583.95	0.0	0.0	0.0	46.00	1.00
17603.000	910.00	583.95	0.00	0.00	0.0	46.00	1.00
17665.000	910.00	583.96	0.0	0.01	0.0	46.00	30.00
17665.000	910.00	583.96	0.00	0.01	0.0	46.00	30.00
17666.000	910.00	583.96	0.0	0.00	0.0	46.00	1.00
17666.000	910.00	583.96	0.00	0.00	0.0	46.00	1.00
17667.000	910.00	583.98	0.0	0.02	0.0	46.00	67.50
17667.000	910.00	583.98	0.00	0.02	0.0	46.00	67.50
17668.000	910.00	583.98	0.0	0.00	0.0	46.00	1.00
17668.000	910.00	583.98	0.00	0.00	0.0	46.00	1.00
17715.000	910.00	584.13	0.0	0.16	0.0	84.46	100.00
17715.000	910.00	584.14	0.00	0.16	0.0	84.46	100.00
17915.000	780.00	584.19	0.0	0.05	0.0	84.64	200.00
17915.000	780.00	584.19	0.00	0.05	0.0	84.64	200.00
18940.000	780.00	584.39	0.0	0.20	0.0	124.26	1200.00
18940.000	780.00	584.39	0.00	0.20	0.0	124.31	1200.00
19840.000	780.00	584.52	0.0	0.13	0.0	370.00	800.00
19840.000	780.00	584.52	0.00	0.13	0.0	370.00	800.00
21040.000	780.00	584.63	0.0	0.11	0.0	327.49	1200.00
21040.000	780.00	584.63	0.00	0.11	0.0	327.49	1200.00
22340.000	780.00	584.83	0.0	0.20	0.0	60.36	1000.00
22340.000	780.00	584.83	0.00	0.20	0.0	60.36	1000.00
22390.000	780.00	584.85	0.0	0.02	0.0	51.25	50.00
22390.000	780.00	584.85	0.00	0.02	0.0	51.25	50.00
22391.000	780.00	584.85	0.0	0.01	0.0	51.25	10.00
22391.000	780.00	584.85	0.00	0.01	0.0	51.25	10.00
22440.000	780.00	584.92	0.0	0.06	0.0	60.93	50.00
22440.000	780.00	584.92	0.00	0.06	0.0	60.93	50.00
22665.000	780.00	585.01	0.0	0.09	0.0	50.00	200.00
22665.000	780.00	585.01	0.00	0.09	0.0	50.00	200.00
22715.000	780.00	585.08	0.0	0.07	0.0	40.05	100.00
22715.000	780.00	585.08	0.00	0.07	0.0	40.05	100.00
22716.000	780.00	585.07	0.0	-0.00	0.0	40.06	1.00
22716.000	780.00	585.07	0.00	-0.00	0.0	40.06	1.00
22717.000	780.00	585.14	0.0	0.07	0.0	40.08	26.00
22717.000	780.00	585.14	0.00	0.07	0.0	40.08	26.00

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	KLCH
22871.000	780.00	585.16	0.0	0.02	0.0	40.10	1.00
22871.000	780.00	585.16	0.00	0.02	0.0	40.10	1.00
22730.000	780.00	585.22	0.0	0.06	0.0	50.40	15.00
22730.000	780.00	585.22	0.00	0.06	0.0	50.41	15.00
23090.000	780.00	585.43	0.0	0.21	0.0	50.63	350.00
23090.000	780.00	585.43	0.0	0.21	0.0	50.63	350.00
23140.000	780.00	585.43	0.0	0.00	0.0	38.23	50.00
23140.000	780.00	585.43	0.00	0.00	0.0	38.23	50.00
23141.000	780.00	585.43	0.0	0.00	0.0	38.23	1.00
23141.000	780.00	585.43	0.00	0.00	0.0	38.23	1.00
23142.000	780.00	585.45	0.0	0.01	0.0	38.24	16.00
23142.000	780.00	585.45	0.00	0.01	0.0	38.24	16.00
23143.000	780.00	585.45	0.0	0.00	0.0	38.24	1.00
23143.000	780.00	585.45	0.00	0.00	0.0	38.24	1.00
23190.000	780.00	585.55	0.0	0.10	0.0	50.45	50.00
23190.000	780.00	585.55	0.00	0.10	0.0	50.45	50.00
24530.000	780.00	586.90	0.0	1.35	0.0	31.52	1340.00
24530.000	780.00	586.90	0.0	1.35	0.0	31.52	1340.00
250.000	530.00	587.48	0.0	0.57	0.0	32.89	185.00
250.000	530.00	587.48	0.0	0.57	0.0	32.89	185.00
300.000	530.00	587.50	0.0	0.02	0.0	13.00	100.00
300.000	530.00	587.50	0.0	0.02	0.0	13.00	100.00
301.000	530.00	587.41	0.0	-0.08	0.0	13.00	1.00
301.000	530.00	587.41	0.0	-0.08	0.0	13.00	1.00
302.000	530.00	587.62	0.0	0.21	0.0	13.00	36.00
302.000	530.00	587.62	0.0	0.21	0.0	13.00	36.00
303.000	530.00	587.90	0.0	0.28	0.0	13.00	1.00
303.000	530.00	587.90	0.0	0.28	0.0	13.00	1.00
350.000	530.00	588.57	0.0	0.67	0.0	38.97	100.00
350.000	530.00	588.57	0.0	0.67	0.0	38.97	100.00
1550.000	530.00	589.57	0.0	1.00	0.0	38.94	1150.00
1550.000	530.00	589.57	0.0	1.00	0.0	38.94	1150.00
2800.000	530.00	590.63	0.0	1.06	0.0	80.00	1200.00
2800.000	530.00	590.63	0.0	1.06	0.0	80.00	1200.00
2850.000	530.00	590.59	0.0	-0.04	0.0	80.00	100.00
2850.000	530.00	590.59	0.0	-0.04	0.0	80.00	100.00
2851.000	530.00	590.98	0.0	0.39	0.0	80.00	30.00
2851.000	530.00	590.98	0.0	0.39	0.0	80.00	30.00

SECNO	Q	CWSEL	DIFWSP	DIFWSK	DIFKWS	TOPWID	XLCP
2900.000	530.00	591.42	0.0	0.44	0.0	80.00	100.00
2900.000	530.00	591.42	0.0	0.44	0.0	80.00	100.00
3500.000	530.00	591.71	0.0	0.29	0.0	80.00	550.00
3500.000	530.00	591.71	0.0	0.29	0.0	80.00	550.00
3600.000	530.00	591.20	0.0	-0.51	0.0	47.93	100.00
3600.000	530.00	591.20	0.0	-0.51	0.0	47.93	100.00
3601.000	530.00	592.18	0.0	0.98	0.0	80.00	20.00
3601.000	530.00	592.18	0.0	0.98	0.0	80.00	20.00
3700.000	530.00	592.46	0.0	0.28	0.0	80.00	100.00
3700.000	530.00	592.46	0.0	0.28	0.0	80.00	100.00
4400.000	530.00	592.92	0.0	0.46	0.0	80.00	580.00
4400.000	530.00	592.92	0.0	0.46	0.0	80.00	580.00
4500.000	530.00	592.95	0.0	0.04	0.0	80.00	100.00
4500.000	530.00	592.95	0.0	0.04	0.0	80.00	100.00
4501.000	530.00	593.15	0.0	0.20	0.0	80.00	20.30
4501.000	530.00	593.15	0.0	0.20	0.0	80.00	20.30
4600.000	530.00	593.27	0.0	0.13	0.0	80.00	100.00
4600.000	530.00	593.27	0.0	0.13	0.0	80.00	100.00
4950.000	530.00	593.45	0.0	0.18	0.0	80.00	350.00
4950.000	530.00	593.45	0.0	0.18	0.0	80.00	350.00
5050.000	530.00	592.89	0.0	-0.56	0.0	9.00	100.00
5050.000	530.00	592.89	0.0	-0.56	0.0	9.00	100.00
5051.000	530.00	594.47	0.0	1.58	0.0	9.00	21.00
5051.000	530.00	594.47	0.0	1.58	0.0	9.00	21.00
5150.000	530.00	595.30	0.0	0.82	0.0	80.00	100.00
5150.000	530.00	595.30	0.0	0.82	0.0	80.00	100.00
5250.000	530.00	595.33	0.0	0.03	0.0	80.00	100.00
5250.000	530.00	595.33	0.0	0.03	0.0	80.00	100.00
5251.000	530.00	595.54	0.0	0.21	0.0	80.00	22.00
5251.000	530.00	595.54	0.0	0.21	0.0	80.00	22.00
5350.000	530.00	595.66	0.0	0.12	0.0	80.00	100.00
5350.000	530.00	595.66	0.0	0.12	0.0	80.00	100.00
5550.000	530.00	595.72	0.0	0.05	0.0	80.00	200.00
5550.000	530.00	595.72	0.0	0.05	0.0	80.00	200.00
5650.000	530.00	595.71	0.0	-0.01	0.0	80.00	100.00
5650.000	530.00	595.71	0.0	-0.01	0.0	80.00	100.00
5651.000	530.00	596.17	0.0	0.46	0.0	80.00	20.50
5651.000	530.00	596.17	0.0	0.46	0.0	80.00	20.50

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
5750.000	530.00	596.38	0.0	0.21	0.0	80.00	100.00
5750.000	530.00	596.38	0.0	0.21	0.0	80.00	100.00
5850.000	530.00	596.38	0.0	0.00	0.0	80.00	100.00
5850.000	530.00	596.38	0.0	0.00	0.0	80.00	100.00
5851.000	530.00	596.54	0.0	0.16	0.0	80.00	20.50
5851.000	530.00	596.54	0.0	0.16	0.0	80.00	20.50
6000.000	530.00	596.68	0.0	0.14	0.0	80.00	150.00
6000.000	530.00	596.68	0.0	0.14	0.0	80.00	150.00
6001.000	530.00	596.96	0.0	0.28	0.0	80.00	20.50
6001.000	530.00	596.96	0.0	0.28	0.0	80.00	20.50
6100.000	530.00	597.13	0.0	0.17	0.0	52.65	100.00
6100.000	530.00	597.13	0.0	0.17	0.0	52.65	100.00
6750.000	530.00	598.11	0.0	0.98	0.0	80.00	700.00
6750.000	530.00	598.11	0.0	0.98	0.0	80.00	700.00
6850.000	530.00	598.22	0.0	0.12	0.0	100.00	100.00
6850.000	530.00	598.22	0.0	0.12	0.0	100.00	100.00
6851.000	530.00	598.39	0.0	0.16	0.0	100.00	21.00
6851.000	530.00	598.39	0.0	0.16	0.0	100.00	21.00
6950.000	530.00	598.50	0.0	0.11	0.0	90.30	100.00
6950.000	530.00	598.50	0.0	0.11	0.0	90.30	100.00
7375.000	530.00	598.30	0.0	0.30	0.0	38.63	420.00
7375.000	530.00	598.30	0.0	0.30	0.0	38.63	420.00
7475.000	530.00	598.82	0.0	0.32	0.0	14.00	100.00
7475.000	530.00	598.82	0.0	0.32	0.0	14.00	100.00
7476.000	530.00	598.78	0.0	-0.04	0.0	14.00	1.00
7476.000	530.00	598.78	0.0	-0.04	0.0	14.00	1.00
7477.000	530.00	598.83	0.0	0.05	0.0	14.00	86.30
7477.000	530.00	598.83	0.0	0.05	0.0	14.00	86.30
7478.000	530.00	598.94	0.0	0.12	0.0	14.00	1.00
7478.000	530.00	598.94	0.0	0.12	0.0	14.00	1.00
7575.000	530.00	599.44	0.0	0.49	0.0	40.56	100.00
7575.000	530.00	599.44	0.0	0.49	0.0	40.56	100.00

SUMMARY OF ERRORS

FLOODWAY DATA, KOCHVILLE DRAIN
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE	
A 13340.000	67.	207.	4.4	581.1	581.0	0.1	13340
B 14530.000	85.	413.	2.2	582.2	532.2	0.0	14530
C 14580.000	49.	264.	3.4	582.1	582.1	0.0	
↓ 14581.000	49.	264.	3.4	582.1	582.1	0.0	14590
D 14630.000	85.	426.	2.1	532.3	582.3	0.0	14640
E 16240.000	119.	593.	1.5	582.7	582.7	0.0	16250
F 17240.000	93.	344.	2.6	582.9	582.9	0.0	17150
G 17290.000	70.	303.	3.0	583.0	583.0	0.0	
↓ 17291.000	70.	305.	3.0	583.0	583.0	0.0	17309
H 17340.000	150.	585.	1.6	583.2	583.2	0.0	17409
I 17415.000	77.	397.	2.3	583.3	583.3	0.0	18009
J 17465.000	80.	142.	6.4	583.1	583.1	0.0	
17466.000	80.	153.	6.0	583.3	583.3	0.0	
17467.000	77.	366.	2.5	533.9	583.9	0.0	18158
↓ 17468.000	77.	366.	2.5	583.9	583.9	0.0	
K 17515.000	76.	403.	2.3	533.9	583.9	0.0	18233
L 17600.000	46.	234.	3.2	583.9	583.9	0.0	
17601.000	45.	234.	3.2	583.9	583.9	0.0	
17602.000	46.	285.	3.2	583.9	583.9	0.0	18372
↓ 17603.000	45.	285.	3.2	533.9	583.9	0.0	
M 17655.000	46.	286.	3.2	584.0	584.0	0.0	
17666.000	46.	286.	3.2	534.0	584.0	0.0	
17667.000	46.	287.	3.2	534.0	584.0	0.0	18471
↓ 17668.000	46.	287.	3.2	534.0	584.0	0.0	
N 17715.000	84.	482.	1.9	534.1	584.1	0.0	18572
O 17915.000	85.	486.	1.6	584.2	584.2	0.0	18772
P 18940.000	296.	431.	1.8	584.4	584.4	0.0	19972
Q 19840.000	370.	1588.	0.5	584.5	584.5	0.0	20772
R 21040.000	327.	1116.	0.7	584.6	584.6	0.0	21972
S 22340.000	60.	350.	2.2	584.8	584.8	0.0	22972
T 22390.000	51.	304.	2.6	584.8	584.8	0.0	
↓ 22391.000	51.	305.	2.6	584.9	584.9	0.0	23032
U 22440.000	61.	353.	2.2	584.9	534.9	0.0	23082
V 22665.000	50.	290.	2.7	585.0	535.0	0.0	23282
W 22715.000	40.	245.	3.2	535.1	535.1	0.0	
22716.000	40.	238.	3.3	535.1	585.1	0.0	
22717.000	40.	238.	3.3	535.1	585.1	0.0	23409
↓ 22718.000	40.	248.	3.1	535.2	585.2	0.0	
X 22730.000	50.	282.	2.8	585.2	585.2	0.0	23425
Y 23090.000	51.	293.	2.7	535.4	585.4	0.0	23775
Z 23140.000	38.	239.	3.3	585.4	585.4	0.0	
23141.000	38.	239.	3.3	585.4	585.4	0.0	
23142.000	38.	239.	3.3	585.4	585.4	0.0	23842
↓ 23143.000	38.	240.	3.3	585.4	585.4	0.0	
AA 23190.000	50.	289.	2.7	585.5	585.5	0.0	23893
AB 24530.000	32.	170.	4.6	586.9	586.9	0.0	25233
AC 250.000	33.	188.	2.8	587.5	587.5	0.0	25418
AD 300.000	13.	90.	5.9	587.5	587.5	0.0	
301.000	13.	78.	6.8	587.4	587.4	0.0	
↓ 302.000	13.	80.	6.7	587.6	587.6	0.0	25555

FLOODWAY DATA, KOCHVILLE DRAIN
PROFILE NO. 2

	STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE	
AD	303.000	13.	96.	5.5	587.9	587.9	0.0	25556
AE	350.000	39.	220.	2.4	588.6	588.6	0.0	25656
AF	1550.000	39.	202.	2.6	589.6	589.6	0.0	26806
AG	2800.000	80.	240.	2.2	590.6	590.6	0.0	28006
AH	2850.000	80.	100.	5.3	590.6	590.6	0.0	
↓	2851.000	80.	131.	4.1	591.0	591.0	0.0	28136
AI	2900.000	80.	266.	2.0	591.4	591.4	0.0	28236
AJ	3500.000	80.	289.	1.8	591.7	591.7	0.0	28786
AK	3600.000	48.	72.	7.4	591.2	591.2	0.0	
↓	3601.000	80.	154.	3.4	592.2	592.2	0.0	28906
AL	3700.000	80.	234.	2.3	592.5	592.5	0.0	29006
AM	4400.000	80.	270.	2.0	592.9	592.9	0.0	29686
AN	4500.000	80.	182.	2.9	593.0	593.0	0.0	
↓	4501.000	80.	216.	2.5	593.1	593.1	0.0	29806
AO	4600.000	80.	257.	2.0	593.3	593.3	0.0	29906
AP	4950.000	80.	282.	1.9	593.5	593.5	0.0	30256
AQ	5050.000	9.	55.	3.2	592.9	592.9	0.0	
↓	5051.000	9.	79.	6.7	594.5	594.5	0.0	30377
AR	5150.000	80.	295.	1.8	595.3	595.3	0.0	30477
AS	5250.000	80.	186.	2.9	595.3	595.3	0.0	
↓	5251.000	80.	222.	2.4	595.5	595.5	0.0	30599
AT	5350.000	80.	345.	1.5	595.7	595.7	0.0	30699
AU	5550.000	80.	296.	1.8	595.7	595.7	0.0	30899
AV	5650.000	80.	141.	3.8	595.7	595.7	0.0	
↓	5651.000	80.	176.	3.0	596.2	596.2	0.0	31020
AW	5750.000	80.	314.	1.7	596.4	596.4	0.0	31120
AX	5850.000	80.	210.	2.5	596.4	596.4	0.0	
↓	5851.000	80.	223.	2.4	596.5	596.5	0.0	31240
AY	6000.000	80.	156.	3.4	596.7	596.7	0.0	
↓	6001.000	80.	179.	3.0	597.0	597.0	0.0	31411
AZ	6100.000	53.	155.	3.4	597.1	597.1	0.0	31511
BA	6750.000	80.	226.	2.3	598.1	598.1	0.0	32211
BB	6850.000	100.	210.	2.5	598.2	598.2	0.0	
↓	6851.000	100.	226.	2.3	598.4	598.4	0.0	32332
BC	6950.000	100.	253.	2.1	598.5	598.5	0.0	32432
BD	7375.000	39.	180.	2.9	598.8	598.8	0.0	32852
BE	7475.000	14.	97.	5.5	598.8	598.8	0.0	
	7476.000	14.	90.	5.9	598.8	598.8	0.0	
	7477.000	14.	90.	5.9	598.8	598.8	0.0	33039
↓	7478.000	14.	99.	5.4	598.9	598.9	0.0	
BF	7575.000	41.	199.	2.7	599.4	599.4	0.0	33140

1) COUNTY: SAGINAW

2) STUDY NAME: KOCHVILLE TWP

3) WATERCOURSE: KOCHVILLE DRAIN + S. BRANCH KOCHVILLE DRAIN

4) DOCUMENT TYPE: 100 YR NATURAL

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

C
T1      KOCHVILLE DRAIN-KOCHVILLE TOWNSHIP, PROJECT NO. 8554
T2      KOCHVILLE DRAIN
T3      KOCHVILLE DRAIN

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL      FQ

      0.       4.       0.       0.  0.002731     0.0       0.0       0.   581.000     0.0

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC     IBW      CHNIM     ITRACE

     1.000     0.0     -1.000    0.0      0.0      0.0      0.0      0.0      0.0      15.000

QT      4.000   510.000   790.000   910.000  1270.000     0.0       0.0       0.0       0.0       0.0
NC      0.035     0.035     0.035     0.100     0.300     0.0       0.0       0.0       0.0       0.0

        A

X1  13340.000     8.000   250.000   341.000     0.0       0.0       0.0       0.0       0.0       0.0
GR    586.500   228.000   586.800   250.000   581.000   258.000   576.500   272.500   575.700   287.800
GR    577.900   300.900   581.000   325.000   588.300   341.000     0.0       0.0       0.0       0.0
NC      0.035     0.035     0.035     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        B

X1  14530.000     9.000   226.000   319.000  1190.000  1190.000  1190.000     0.0       0.0       0.0
GR    587.200   200.000   586.700   226.000   581.200   232.000   576.800   250.000   575.300   270.000
GR    575.400   290.000   581.200   314.000   584.700   319.000   584.000   356.000     0.0       0.0
NC      0.035     0.035     0.035     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        C   FARM BRIDGE, DECK TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

X1  14580.000     9.000   250.000   303.000    50.000    50.000    50.000     0.0       0.0       0.0
GR    585.000   200.000   585.700   250.000   581.900   253.000   581.200   253.000   575.900   265.000
GR    574.400   277.000   575.400   290.000   581.200   301.000   585.600   303.000     0.0       0.0

X1  14581.000     0.0       0.0       0.0      10.000    10.000    10.000     0.0       0.0       0.0
NC      0.035     0.035     0.035     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        D

X1  14630.000     8.000   228.000   321.000    50.000    50.000    50.000     0.0       0.0       0.0
GR    585.700   228.000   581.200   236.000   575.900   255.000   572.800   275.000   578.200   295.000
GR    581.200   317.000   583.900   321.000   584.300   339.000     0.0       0.0       0.0       0.0
NC      0.035     0.035     0.035     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        E

X1  16240.000    19.000   142.000   276.000  1610.000  1610.000  1610.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     142.000     0.0     276.000     0.0       0.0       0.0       0.0
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GR	578.400	0.0	577.400	64.000	575.400	68.000	572.100	77.000	575.400	86.000
GR	587.300	128.000	586.900	142.000	581.200	150.000	577.400	180.000	575.900	210.000
GR	575.900	240.000	581.200	265.000	588.100	276.000	587.900	290.000	577.900	307.000
GR	572.900	324.000	577.900	341.000	580.300	348.000	580.900	510.000	0.0	0.0

F

X1	17240.000	10.000	247.000	353.000	900.000	900.000	900.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	247.000	0.0	353.000	0.0	0.0	0.0	0.0
GR	583.400	0.0	580.600	167.000	585.300	230.000	585.400	247.000	580.800	254.000
GR	580.200	275.000	576.300	295.000	578.900	320.000	580.800	340.000	587.800	353.000
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

G C & O R. R. BRIDGE , WIDTH 9, LENGTH 68, LC 583.6, TR 587.2

X1	17290.000	9.000	250.000	320.000	150.000	150.000	150.000	0.0	0.0	0.0
GR	587.200	0.0	587.200	250.000	580.800	250.000	580.000	260.000	576.400	285.000
GR	579.300	310.000	580.800	320.000	587.200	320.000	587.200	580.000	0.0	0.0
SB	1.250	1.500	2.500	0.0	70.000	4.800	330.000	0.0	578.400	578.400

X1	17291.000	0.0	0.0	0.0	9.000	9.000	9.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	583.600	587.200	0.0	0.0	0.0	0.0	0.0
BT	2.000	0.0	587.200	0.0	580.000	587.200	0.0	0.0	0.0	0.0

H

X1	17340.000	9.000	200.000	350.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	200.000	0.0	350.000	0.0	0.0	0.0	0.0
GR	579.700	0.0	580.800	200.000	580.800	209.000	580.000	240.000	576.400	275.000
GR	579.300	310.000	580.800	343.000	581.900	350.000	581.600	570.000	0.0	0.0
NC	0.060	0.060	0.035	0.100	0.300	0.0	0.0	0.0	0.0	0.0

I

X1	17415.000	10.000	233.000	313.000	600.000	600.000	600.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	183.000	0.0	363.000	0.0	0.0	0.0	0.0
GR	585.300	0.0	585.200	200.000	584.500	233.000	580.800	241.000	576.600	260.000
GR	576.300	275.000	576.500	290.000	580.800	310.000	584.200	313.000	586.800	580.000
NC	0.035	0.035	0.035	0.300	0.500	0.0	0.0	0.0	0.0	0.0

J NORTHBOUND I-675, WIDTH 44, LENGTH 80,LC 587.5, TR 590.4

X1	17465.000	8.000	240.000	320.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	591.000	240.000	582.500	240.000	582.500	248.000	580.800	259.000	580.800	306.000
GR	582.800	312.000	582.900	320.000	591.000	320.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.025	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	17466.000	0.0	0.0	0.0	5.000	5.000	5.000	0.0	0.0	0.0
BT	2.000	240.000	591.000	584.800	320.000	591.000	585.300	0.0	0.0	0.0

X1	17467.000	13.000	250.000	330.000	44.000	44.000	44.000	0.0	0.0	0.0
BT	2.000	250.000	590.400	587.400	330.000	590.400	587.600	0.0	0.0	0.0
GR	590.400	0.0	590.400	250.000	582.700	252.000	582.600	253.000	580.800	263.000
GR	576.900	277.000	575.200	290.000	577.500	305.000	580.800	318.000	583.000	322.000
GR	583.100	328.000	590.400	330.000	590.400	400.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MOORE BUSINESS FORMS INC 27

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X1   17463.000     0.0        0.0        0.0        5.000      5.000      5.000      0.0        0.0        0.0

     K

X1   17515.000    10.000    250.000    340.000     70.000     70.000     70.000      0.0        0.0        0.0
GR     587.300     0.0      587.000    200.000    585.900    256.000    580.800    267.000    576.900    280.000
GR     576.700   300.000    577.100    315.000    580.300    328.000    585.400    340.000    587.500    580.000

     L   NORTHBOUND I-75 BRIDGE, WIDTH 61, LENGTH 46, LC 584.9, TR 588.8

X1   17600.000     8.000    253.000    299.000     70.000     70.000     70.000      0.0        0.0        0.0
GR     588.800     0.0      588.800    253.000    580.700    253.000    576.100    270.000    576.400    285.000
GR     580.700   299.000    588.800    299.000    588.800    550.000      0.0        0.0        0.0        0.0
NC       0.0       0.0      0.025       0.0        0.0        0.0        0.0        0.0        0.0        0.0

X1   17601.000     0.0        0.0        0.0        1.000      1.000      1.000      0.0        0.0        0.0
BT       2.000   253.000    583.600    584.900    299.000    588.600    584.900      0.0        0.0        0.0

X1   17602.000     0.0        0.0        0.0       67.500     67.500     67.500      0.0        0.0        0.0
X2       0.0       0.0        0.0        0.0        0.0        0.0      1.000      0.0        0.0        0.0

X1   17603.000     0.0        0.0        0.0        1.000      1.000      1.000      0.0        0.0        0.0

     M   SOUTHBOUND I-75 BRIDGE, SAME DIMENSIONS AS NORTHBOUND

X1   17665.000     0.0        0.0        0.0       30.000     30.000     30.000      0.0        0.0        0.0

X1   17666.000     0.0        0.0        0.0        1.000      1.000      1.000      0.0        0.0        0.0
BT       2.000   253.000    583.600    584.900    299.000    588.600    584.900      0.0        0.0        0.0

X1   17667.000     0.0        0.0        0.0       67.500     67.500     67.500      0.0        0.0        0.0
X2       0.0       0.0        0.0        0.0        0.0        0.0      1.000      0.0        0.0        0.0

X1   17668.000     0.0        0.0        0.0        1.000      1.000      1.000      0.0        0.0        0.0
NC       0.0       0.0      0.035       0.0        0.0        0.0        0.0        0.0        0.0        0.0

     N

X1   17715.000     9.000    242.000    329.000    100.000    100.000    100.000      0.0        0.0        0.0
X3       0.0       0.0        0.0      215.000      0.0      355.000      0.0        0.0        0.0        0.0
GR     584.300     0.0      584.400    200.000    584.500    242.000    580.700    250.000    576.400    275.000
GR     576.200   300.000    580.700    322.000    585.300    329.000    582.800    550.000      0.0        0.0
QT       4.000   435.000    570.000    780.000   1070.000      0.0        0.0        0.0        0.0        0.0
NC       0.050     0.050    0.035      0.100      0.300      0.0        0.0        0.0        0.0        0.0

     O   U/S OF CONFLUENCE POINT WITH GOETZ DRAIN, REPEATING N

X1   17915.000     0.0        0.0        0.0      200.000    200.000    200.000      0.0        0.0        0.0
X3       0.0       0.0        0.0      200.000      0.0      350.000      0.0        0.0        0.0        0.0
NC       0.100     0.100    0.035      0.100      0.300      0.0        0.0        0.0        0.0        0.0

     P   REPEATING N WITH ELEV ADJUSTMENT

X1   18900.000     0.0        0.0        0.0     1200.000   1200.000   1200.000      0.0      1.000        0.0
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X3        0.0        0.0        0.0      230.000        0.0      540.000        0.0        0.0        0.0        0.0

          Q

X1  19840.000       18.000    155.000    236.000    800.000    800.000    800.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      100.000        0.0      470.000        0.0        0.0        0.0        0.0
GR    584.700        0.0    581.300      8.000    581.200      9.000    579.800     45.000    579.400    115.000
GR    581.200    145.000    582.400    146.000    581.400    155.000    581.300    156.000    578.700    182.000
GR    578.000    208.000    578.700    220.000    581.300    235.000    582.100    236.000    582.200    257.000
GR    581.200    258.000    580.200    337.000    580.200    490.000        0.0        0.0        0.0        0.0
NC      0.070      0.070      0.045        0.0        0.0        0.0        0.0        0.0        0.0        0.0

          R   REPEATING Q WITH ELEV ADJUSTMENT

X1  21040.000        0.0        0.0        0.0   1200.000   1200.000   1200.000        0.0      1.000        0.0
X3        0.0        0.0        0.0        0.0        0.0    330.000        0.0        0.0        0.0        0.0
NC      0.035      0.035      0.045      0.300      0.500        0.0        0.0        0.0        0.0        0.0

          S

X1  22340.000       10.000    243.000    307.000   1000.000   1000.000   1000.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      243.000        0.0      307.000        0.0        0.0        0.0        0.0
GR    584.100        0.0    582.700    220.000    586.500    233.000    586.400    243.000    580.600    251.000
GR    576.600    270.000    577.700    285.000    580.600    302.000    586.600    307.000    582.700    552.000
NC        0.0        0.0      0.045        0.0        0.0        0.0        0.0        0.0        0.0        0.0

          T   FARM BRIDGE, DECK-TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

X1  22390.000       12.000    245.000    307.000     50.000     50.000     50.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      245.000        0.0      307.000        0.0        0.0        0.0        0.0
GR    583.800        0.0    583.200    214.000    587.500    233.000    586.800    245.000    585.300    250.000
GR    580.600    250.000    579.300    265.000    577.800    285.000    580.600    300.000    587.400    302.000
GR    586.800    307.000    582.900    552.000        0.0        0.0        0.0        0.0        0.0        0.0

X1  22391.000        0.0        0.0        0.0     10.000     10.000     10.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      245.000        0.0      307.000        0.0        0.0        0.0        0.0
NC        0.0        0.0      0.045        0.0        0.0        0.0        0.0        0.0        0.0        0.0

          U

X1  22440.000       10.000    241.000    303.000     50.000     50.000     50.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      233.000        0.0      303.000        0.0        0.0        0.0        0.0
GR    584.000        0.0    584.000    214.000    586.100    233.000    585.500    241.000    580.600    250.000
GR    578.100    260.000    577.500    288.000    580.600    301.000    584.200    303.000    583.000    552.000
NC        0.0        0.0        0.0      0.100      0.300        0.0        0.0        0.0        0.0        0.0

          V

X1  22665.000        9.000    240.000    290.000    200.000    200.000    200.000        0.0        0.0        0.0
X3        0.0        0.0        0.0      240.000        0.0      290.000        0.0        0.0        0.0        0.0
GR    586.400        0.0    584.900    200.000    585.100    240.000    581.100    240.000    579.600    255.000
GR    578.000    272.000    581.100    290.000    586.000    290.000    586.000    500.000        0.0        0.0
NC        0.0        0.0        0.0      0.300      0.500        0.0        0.0        0.0        0.0        0.0

          W   FOOT BRIDGE, WIDTH 26, LENGTH 41, LC 584.9, TR 586.9

X1  22715.000        8.000    251.000    292.000    100.000    100.000    100.000        0.0        0.0        0.0
GR    586.900        0.0    585.900    251.000    581.100    251.000    577.700    265.000    577.000    275.000
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GR     581.100     239.000     586.900     292.000     587.000     500.000       0.0       0.0       0.0       0.0

XL   22716.000       0.0         0.0         0.0         1.000       1.000       1.000       0.0       0.0       0.0
BT       2.000     251.000     586.900     584.900     292.000     586.900     584.900       0.0       0.0       0.0

XL   22717.000       0.0         0.0         0.0        26.000      26.000      26.000       0.0       0.0       0.0
X2       0.0         0.0         0.0         0.0         0.0         0.0         1.000       0.0       0.0       0.0

XL   22871.000       0.0         0.0         0.0         1.000       1.000       1.000       0.0       0.0       0.0

         X   USING Y

XL   22730.000      11.000     243.000     296.000      15.000      15.000      15.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       243.000       0.0       296.000       0.0         0.0       0.0       0.0
GR     586.200       0.0       585.900     200.000     585.300     243.000     581.100     244.000     578.200     260.000
GR     578.500     275.000     581.100     290.000     588.100     296.000     587.800     330.000     584.800     380.000
GR     584.300     540.000       0.0         0.0         0.0         0.0         0.0         0.0         0.0         0.0
NC       0.020       0.035       0.035       0.100       0.300       0.0         0.0         0.0         0.0         0.0

         Y

XL   23090.000       0.0         0.0         0.0       350.000     350.000     350.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       243.000       0.0       296.000       0.0         0.0       0.0       0.0
NC       0.0         0.0         0.040       0.300       0.500       0.0         0.0         0.0       0.0       0.0

         Z   FARM BRIDGE, WIDTH 16, LENGTH 40, LC 586.1, TR 587.6

XL   23140.000      10.000     250.000     290.000      50.000      50.000      50.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       250.000       0.0       290.000       0.0         0.0       0.0       0.0
GR     586.300       0.0       586.700     200.000     587.600     250.000     581.100     250.000     577.900     262.000
GR     577.600     275.000     581.100     285.000     587.800     290.000     585.000     380.000     584.700     540.000

XL   23141.000       0.0         0.0         0.0         1.000       1.000       1.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       250.000       0.0       290.000       0.0         0.0       0.0       0.0
BT       2.000     250.000     587.600     586.200     290.000     587.800     586.200       0.0       0.0       0.0

XL   23142.000       0.0         0.0         0.0        16.000      16.000      16.000       0.0       0.0       0.0
X2       0.0         0.0         0.0         0.0         0.0         0.0         1.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       250.000       0.0       290.000       0.0         0.0       0.0       0.0

XL   23143.000       0.0         0.0         0.0         1.000       1.000       1.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       250.000       0.0       290.000       0.0         0.0       0.0       0.0

         AA

XL   23190.000       9.000     244.000     298.000      50.000      50.000      50.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       244.000       0.0       298.000       0.0         0.0       0.0       0.0
GR     586.100       0.0       586.400     200.000     586.300     244.000     581.100     250.000     577.900     263.000
GR     577.600     275.000     581.100     290.000     587.800     298.000     588.600     330.000       0.0         0.0
NC       0.020       0.030       0.050       0.100       0.300       0.0         0.0         0.0         0.0         0.0

         AB

XL   24530.000       9.000     132.000     168.000    1340.000    1340.000    1340.000       0.0       0.0       0.0
X3       0.0         0.0         0.0       132.000       0.0       168.000       0.0         0.0       0.0       0.0
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GR	588.200	0.0	589.400	100.000	589.200	132.000	580.400	142.000	578.500	150.000
GR	580.400	158.000	588.400	168.000	589.000	200.000	587.700	400.000	0.0	0.0
QT	4.000	290.000	460.000	530.000	760.000	0.0	0.0	0.0	0.0	0.0
NC	0.020	0.030	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AC SOUTH BRANCH, U/S OF CONFLUENCE POINT WITH KOCHVILLE DRAIN

X1	250.000	0.0	0.0	0.0	185.000	185.000	185.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	132.000	0.0	168.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AD MICHIGAN ROAD CULVERT, INVERT 580.1, CROWN 588.4, TR 589.9

STRUCTURAL PLATE PIPE ARCH 12'10 X 8'4 X 36'

X1	300.000	15.000	193.500	206.500	100.000	100.000	100.000	0.0	0.0	0.0
GR	589.900	50.000	589.900	193.500	582.100	193.500	581.400	194.000	580.900	194.500
GR	580.600	196.000	580.300	198.000	580.100	200.000	580.200	202.000	580.500	204.000
GR	580.800	205.500	581.200	206.000	582.100	206.500	589.900	206.500	589.900	400.000
NC	0.0	0.0	0.031	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	301.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	13.000	50.000	589.900	589.900	193.500	589.900	582.100	194.000	589.900	584.300
BT	194.500	589.900	585.300	196.000	589.900	587.000	198.000	589.900	588.000	200.000
BT	589.900	588.400	202.000	589.900	588.000	204.000	589.900	587.000	205.500	589.900
BT	585.300	206.000	589.900	584.300	206.500	589.900	582.100	400.000	589.900	589.900

X1	302.000	0.0	0.0	0.0	36.000	36.000	36.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
NC	0.020	0.030	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	303.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0

AE

X1	350.000	8.000	130.000	171.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	130.000	0.0	171.000	0.0	0.0	0.0	0.0
GR	589.700	0.0	589.400	100.000	589.500	130.000	580.400	145.000	579.200	152.000
GR	580.400	158.000	588.900	171.000	590.100	200.000	0.0	0.0	0.0	0.0
NC	0.020	0.030	0.050	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AF

X1	1550.000	8.000	237.000	277.000	1150.000	1150.000	1150.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	237.000	0.0	277.000	0.0	0.0	0.0	0.0
GR	589.600	0.0	589.900	200.000	590.200	237.000	582.500	250.000	579.900	257.000
GR	582.500	263.000	589.400	277.000	589.700	300.000	0.0	0.0	0.0	0.0
NC	0.020	0.040	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AG

X1	2800.000	9.000	235.000	268.000	1200.000	1200.000	1200.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	589.400	0.0	589.500	200.000	589.800	236.000	582.600	244.000	582.200	249.000
GR	582.600	254.000	589.600	268.000	589.300	300.000	589.500	500.000	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

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AH DAVIS ROAD CULVERT, INVERT 582.2, CROWN 589.6, TR 590.5

STRUCTURAL PLATE PIPE ARCH 11'7 X 7'5 X 30'

X1	2850.000	16.000	194.100	205.900	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
GR	590.000	0.0	590.500	150.000	590.500	194.100	584.400	194.100	583.500	194.500
GR	583.000	195.000	582.700	196.000	582.400	198.000	582.200	200.000	582.400	202.000
GR	582.700	204.000	583.000	205.000	583.500	205.500	584.400	205.900	590.500	205.900
GR	590.500	400.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.0	1.800	2.500	0.0	11.800	0.0	67.000	0.0	582.200	582.200

X1	2851.000	0.0	0.0	0.0	30.000	30.000	30.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	589.600	590.500	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	14.000	150.000	590.000	590.000	150.000	590.200	590.200	194.100	590.500	584.400
BT	194.500	590.500	585.800	195.000	590.500	586.900	196.000	590.500	588.100	198.000
BT	590.500	589.300	200.000	590.500	589.500	202.000	590.500	589.300	204.000	590.500
BT	588.100	205.000	590.500	586.900	205.500	590.500	585.800	205.900	590.500	584.400
BT	250.000	590.500	590.500	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AI

X1	2900.000	9.000	233.000	263.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	589.000	0.0	589.800	200.000	590.100	233.000	582.600	245.000	582.300	247.000
GR	582.600	248.000	589.200	263.000	588.900	300.000	589.700	500.000	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AJ REPEATING AI

X1	3500.000	0.0	0.0	0.0	550.000	550.000	550.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AK DRIVEWAY CULVERT, INVERT 583.7, CROWN 589.8, TR 591.0

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'11 X 20'

X1	3600.000	13.000	195.500	204.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
X4	1.000	592.200	175.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	592.200	0.0	591.000	195.500	585.500	195.500	584.500	196.000	584.000	197.000
GR	583.800	198.000	583.700	200.000	583.800	202.000	584.000	203.000	584.500	204.000
GR	585.500	204.500	591.000	204.500	591.000	500.000	0.0	0.0	0.0	0.0
SB	0.0	1.750	2.500	0.0	9.000	0.0	43.000	0.0	583.700	583.700

X1	3601.000	0.0	0.0	0.0	20.000	20.000	20.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	589.800	591.000	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	592.200	592.200	195.500	591.000	585.500	196.000	591.000	586.800
BT	197.000	591.000	588.100	198.000	591.000	583.900	200.000	591.000	589.800	202.000
BT	591.000	588.900	203.000	591.000	588.100	204.000	591.000	586.900	204.500	591.000
BT	585.500	240.000	591.000	591.000	0.0	0.0	0.0	0.0	0.0	0.0

AL REPEATING AO WITH ELEV ADJUSTMENT

X1	3700.000	10.000	239.000	268.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	593.200	0.0	590.900	190.000	592.300	200.000	592.200	239.000	584.100	250.000

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GR	583.700	254.000	584.100	258.000	589.900	269.000	589.800	300.000	592.700	500.000
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AM REPEATING AL

X1	4400.000	0.0	0.0	0.0	680.000	680.000	680.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0

AN DRIVEWAY CULVERT, INVERT 583.7, CROWN 590.3, TR 591.3

STRUCTURAL PLATE PIPE ARCH 9'9 X 6'7 X 20.3'

X1	4500.000	13.000	195.000	205.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
X4	1.000	592.500	170.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	592.500	0.0	591.300	195.000	585.600	195.000	584.300	196.000	584.000	197.000
GR	583.900	198.000	583.700	200.000	583.900	202.000	584.000	203.000	584.300	204.000
GR	585.600	205.000	591.300	205.000	591.300	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.720	2.500	0.0	10.000	0.0	52.000	0.0	583.700	583.700

X1	4501.000	0.0	0.0	0.0	20.300	20.300	20.300	0.0	0.0	0.0
X2	0.0	0.0	1.000	590.300	591.300	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	592.500	592.500	195.000	591.300	585.600	196.000	591.300	588.100
BT	197.000	591.300	589.100	198.000	591.300	589.800	200.000	591.300	590.300	202.000
BT	591.300	589.800	203.000	591.300	589.100	204.000	591.300	588.100	205.000	591.300
BT	585.600	240.000	591.300	591.300	0.0	0.0	0.0	0.0	0.0	0.0

AO

X1	4600.000	10.000	239.000	268.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	593.200	0.0	591.600	190.000	593.000	200.000	592.600	239.000	584.900	250.000
GR	584.500	254.000	584.900	258.000	589.900	268.000	589.800	300.000	592.700	500.000
NC	0.020	0.035	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AP REPEATING AO

X1	4950.000	0.0	0.0	0.0	350.000	350.000	350.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
NC	0.020	0.035	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AQ DRIVEWAY CULVERT, INVERT 585.3, CROWN 591.5, TR 594.4

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'11 X 21'

X1	5050.000	13.000	195.500	204.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
X4	1.000	594.400	175.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	594.400	0.0	594.400	195.500	587.200	195.500	586.200	196.000	585.700	197.000
GR	585.500	198.000	585.300	200.000	585.500	202.000	585.700	203.000	586.200	204.000
GR	587.200	204.500	594.400	204.500	594.400	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.750	2.500	0.0	9.000	0.0	43.000	0.0	582.800	582.800

X1	5051.000	0.0	0.0	0.0	21.000	21.000	21.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	591.500	594.400	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	195.500	0.0	204.500	0.0	0.0	0.0	0.0
BT	11.000	160.000	594.400	594.400	195.500	594.400	587.200	196.000	594.400	589.100
BT	197.000	594.400	590.500	198.000	594.400	591.100	200.000	594.400	591.500	202.000

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BT	594.400	591.100	203.000	594.400	590.500	204.000	594.400	589.100	204.500	594.400
BT	587.200	240.000	594.400	594.400	0.0	0.0	0.0	0.0	0.0	0.0

AR REPEATING AD WITH ELEV ADJUSTMENT

X1	5150.000	8.000	239.000	268.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	594.400	0.0	594.400	239.000	585.800	250.000	585.400	254.000	585.400	258.000
GR	592.200	268.000	592.200	300.000	593.800	500.000	0.0	0.0	0.0	0.0
NC	0.020	0.035	0.050	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AS DRIVEWAY CULVERT, INVERT 585.4, CROWN 592.5, TR 593.8

STRUCTURAL PLATE PIPE ARCH 10'11 X 7'1 X 22°

X1	5250.000	13.000	194.500	205.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
X4	1.000	595.100	175.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	595.100	0.0	593.800	194.500	587.500	194.500	586.500	195.000	586.000	196.000
GR	585.600	198.000	585.400	200.000	585.600	202.000	586.000	204.000	586.500	205.000
GR	587.500	205.500	593.800	205.500	593.800	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.700	2.500	0.0	11.000	0.0	61.000	0.0	585.400	585.400

X1	5251.000	0.0	0.0	0.0	22.000	22.000	22.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	592.500	593.800	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	595.100	595.100	194.500	593.800	587.500	195.000	593.800	589.400
BT	196.000	593.800	590.800	198.000	593.800	592.100	200.000	593.800	592.300	202.000
BT	593.800	592.100	204.000	593.800	590.800	205.000	593.800	589.400	205.500	593.800
BT	587.500	240.000	593.800	593.800	0.0	0.0	0.0	0.0	0.0	0.0

AT REPEATING AD WITH ELEV ADJUSTMENT

X1	5350.000	8.000	239.000	268.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	595.100	0.0	594.000	239.000	585.600	250.000	585.200	254.000	585.600	258.000
GR	591.900	268.000	591.900	300.000	594.000	500.000	0.0	0.0	0.0	0.0

AU REPEATING AT

X1	5550.000	8.000	239.000	268.000	200.000	200.000	200.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
X4	1.000	593.700	220.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
GR	594.900	0.0	594.900	239.000	586.500	250.000	586.100	254.000	586.500	258.000
GR	592.800	268.000	592.800	300.000	594.900	500.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AV DRIVEWAY CULVERT, INVERT 586.1, CROWN 592.2, TR 594.9

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'1 X 20.5°

X1	5650.000	13.000	195.500	204.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
GR	594.900	0.0	594.900	195.500	587.900	195.500	586.900	196.000	586.400	197.000
GR	586.300	198.000	586.100	200.000	586.300	202.000	586.400	203.000	586.900	204.000
GR	587.900	204.500	594.900	204.500	594.900	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.750	2.500	0.0	9.000	0.0	43.000	0.0	586.100	586.100

X1	5651.000	0.0	0.0	0.0	20.500	20.500	20.500	0.0	0.0	0.0

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X2	0.0	0.0	1.000	592.200	594.900	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	594.900	594.900	195.500	594.900	587.900	196.000	594.900	589.700
BT	197.000	594.900	591.000	198.000	594.900	591.700	200.000	594.900	592.200	202.000
BT	594.900	591.700	203.000	594.900	591.000	204.000	594.900	589.700	204.500	594.900
BT	587.900	240.000	594.900	594.900	0.0	0.0	0.0	0.0	0.0	0.0

AW REPEATING AO WITH ELEV ADJUSTMENT

X1	5750.000	8.000	239.000	268.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	595.100	0.0	595.100	239.000	587.100	250.000	586.700	254.000	587.100	258.000
GR	592.800	268.000	592.800	300.000	594.900	500.000	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AX DRIVEWAY CULVERT, INVERT 587.3, CROWN 593.4, TR 594.5

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'1 X 20.5'

X1	5850.000	13.000	195.500	204.500	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
GR	595.100	0.0	594.500	195.500	589.100	195.500	588.000	196.000	587.600	197.000
GR	587.400	198.000	587.300	200.000	587.400	202.000	587.600	203.000	588.000	204.000
GR	589.100	204.500	594.500	204.500	594.500	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.750	2.500	0.0	9.000	0.0	43.000	0.0	587.300	587.300

X1	5851.000	0.0	0.0	0.0	20.500	20.500	20.500	0.0	0.0	0.0
X2	0.0	0.0	1.000	593.400	594.500	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	595.100	595.100	195.500	594.500	589.100	196.000	594.500	590.900
BT	197.000	594.500	592.200	198.000	594.500	592.900	200.000	594.500	593.400	202.000
BT	594.500	592.900	203.000	594.500	592.200	204.000	594.500	590.900	204.500	594.500
BT	589.100	240.000	594.500	594.500	0.0	0.0	0.0	0.0	0.0	0.0

AY DRIVEWAY CULVERT, INVERT 587.5, CROWN 593.4, TR 595.6

STRUCTURAL PLATE PIPE ARCH 8'7 X 5'11 X 20.5

X1	6000.000	13.000	195.500	204.500	150.000	150.000	150.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
GR	595.200	0.0	595.600	195.500	589.400	195.500	588.500	196.000	587.900	197.000
GR	587.700	198.000	587.500	200.000	587.700	202.000	587.900	203.000	588.500	204.000
GR	589.400	204.500	595.600	204.500	595.600	400.000	0.0	0.0	0.0	0.0
SB	0.0	1.760	2.500	0.0	9.000	0.0	40.000	0.0	587.500	587.500

X1	6001.000	0.0	0.0	0.0	20.500	20.500	20.500	0.0	0.0	0.0
X2	0.0	0.0	1.000	593.400	595.600	0.0	0.0	0.0	0.0	0.0
X3	0.0	0.0	0.0	160.000	0.0	240.000	0.0	0.0	0.0	0.0
BT	11.000	160.000	595.200	595.200	195.500	595.600	589.400	196.000	595.600	590.700
BT	197.000	595.600	592.200	198.000	595.600	592.900	200.000	595.600	593.400	202.000
BT	595.600	592.600	203.000	595.600	592.200	204.000	595.600	590.700	204.500	595.600
BT	589.400	240.000	595.600	595.600	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.050	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AZ

X1	6100.000	9.000	239.000	263.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	210.000	0.0	290.000	0.0	0.0	0.0	0.0
GR	599.400	0.0	595.300	200.000	596.300	239.000	589.800	245.000	589.500	249.000
GR	589.800	253.000	597.400	263.000	597.300	300.000	600.200	500.000	0.0	0.0

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NC      0.040     0.045     0.040     0.100     0.300     0.0       0.0       0.0       0.0       0.0

        BA   REPEATING AZ

X1   6750.000     0.0       0.0       0.0     700.000   700.000   700.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     210.000     0.0     290.000     0.0       0.0       0.0       0.0
NC      0.035     0.035     0.050     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        BB   FARM CULVERT, INVERT 589.6, CROWN 595.7, TR 596.6

             STRUCTURAL PLATE PIPE ARCH 8'10  X 6'1  X 21"

X1   6850.000    14.000   195.500   204.500   100.000   100.000   100.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     150.000     0.0     250.000     0.0       0.0       0.0       0.0
GR    596.600     0.0     596.600   195.500   591.400   195.500   590.300   196.000   589.900   197.000
GR    589.700   198.000   589.600   200.000   589.700   202.000   589.900   203.000   590.300   204.000
GR    591.400   204.500   596.600   204.500   597.800   300.000   600.200   500.000     0.0       0.0
SB      0.0       2.190     2.500     0.0       9.000     0.0      43.000     0.0     589.600   589.600

X1   6851.000     0.0       0.0       0.0      21.000    21.000    21.000     0.0       0.0       0.0
X2      0.0       0.0       1.000   595.700   596.600     0.0       0.0       0.0       0.0       0.0
X3      0.0       0.0       0.0     150.000     0.0     250.000     0.0       0.0       0.0       0.0
BT     12.000   150.000   596.600   596.600   195.500   596.600   591.400   196.000   596.600   593.200
BT    197.000   596.600   594.500   198.000   596.600   595.100   200.000   596.600   595.700   202.000
BT    596.600   595.100   203.000   596.600   594.500   204.000   596.600   593.200   204.500   596.600
BT    591.400   250.000   597.800   597.800   500.000   600.200   600.200     0.0       0.0       0.0

        BC

X1   6950.000     9.000   235.000   262.000   100.000   100.000   100.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     200.000     0.0     300.000     0.0       0.0       0.0       0.0
GR    599.300     0.0     596.000   200.000   596.000   235.000   589.800   244.000   589.000   247.000
GR    589.800   251.000   593.600   262.000   598.200   300.000   600.400   500.000     0.0       0.0
NC      0.030     0.030     0.040     0.300     0.500     0.0       0.0       0.0       0.0       0.0

        BD

X1   7375.000     9.000   232.000   272.000   420.000   420.000   420.000     0.0       0.0       0.0
X3      0.0       0.0       0.0     232.000     0.0     272.000     0.0       0.0       0.0       0.0
GR    601.800     0.0     599.600   200.000   599.500   232.000   591.800   247.000   591.500   250.000
GR    591.800   253.000   596.400   272.000   598.400   300.000   600.400   500.000     0.0       0.0
NC      0.030     0.030     0.050     0.300     0.500     0.0       0.0       0.0       0.0       0.0

        BE   BAY ROAD CULVERT, INVERT 590.9, CROWN 599.7, TR 601.8

             ELLIPTICAL CONCRETE PIPE 13'10  X 8'10  X 86"

X1   7475.000    15.000   193.000   207.000   100.000   100.000   100.000     0.0       0.0       0.0
GR    601.800     0.0     601.800   193.000   595.300   193.000   593.200   194.000   592.100   195.000
GR    591.600   196.000   591.000   198.000   590.900   200.000   591.000   202.000   591.600   204.000
GR    592.100   205.000   593.200   206.000   595.300   207.000   601.800   207.000   602.200   450.000
NC      0.0       0.0       0.012     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1   7476.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
BT     13.000     0.0     601.800   601.800   193.000   601.800   595.300   194.000   601.800   597.400
BT    195.000   601.800   598.500   196.000   601.800   599.000   198.000   601.800   599.600   200.000
BT    601.800   599.700   202.000   601.800   599.600   204.000   601.800   599.000   205.000   601.800
BT    598.500   206.000   601.800   597.400   207.000   601.800   595.300   450.000   602.200   602.200
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X1	7477.000	0.0	0.0	0.0	86.000	86.000	86.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	7478.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
NC	0.0	0.0	0.055	0.0	0.0	0.0	0.0	0.0	0.0	0.0
BF										
X1	7575.000	9.000	237.000	279.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	237.000	0.0	279.000	0.0	0.0	0.0	0.0
GR	600.600	0.0	599.700	200.000	599.000	237.000	591.800	248.000	591.100	253.000
GR	591.300	258.000	600.000	279.000	600.600	300.000	600.500	500.000	0.0	0.0
EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MOORE BUSINESS FORMS, INC 27

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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C
T1      KOCHVILLE DRAIN-KOCHVILLE TOWNSHIP, PROJECT NO. 8554
T2      KOCHVILLE DRAIN
T3      KOCHVILLE DRAIN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

    -10.      4.        0.        0.        0.0       0.0       0.0       0.        581.000   0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    1.000     0.0       -1.000    0.0       0.0       0.0       0.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   200.000   150.000   0.0       0.0       0.0       0.0       0.0       0.0       0.0

*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 13340.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

     A

 13340.00    5.30      581.00    0.0       581.00    581.32    0.32      0.0       0.0       586.80
    910.     0.        910.      0.        0.        200.      0.        0.        0.        588.30
    0.0      0.0       4.55      0.0       0.035     0.035     0.035     0.0       575.70    258.00
 0.002731    0.        0.        0.        0         0         0         -0.00     67.00     325.00

*SECNO 14530.000

     B

 14530.00    6.86      582.16    0.0       0.0       582.24    0.08      0.89      0.02      586.70
    910.     0.        910.      0.        0.        410.      0.        8.        2.        584.70
    0.15     0.0       2.22      0.0       0.035     0.035     0.035     0.035     575.30    230.94
 0.000344    1190.     1190.     1190.     3         0         0         -0.01     84.44     315.38

*SECNO 14580.000

     C   FARM BRIDGE, DECK TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

 14580.00    7.71      582.11    0.0       0.0       582.29    0.19      0.02      0.03      585.70
    910.     0.        910.      0.        0.        262.      0.        9.        2.        585.60
    0.15     0.0       3.47      0.0       0.035     0.035     0.035     0.035     574.40    252.84
 0.000788    50.       50.       50.       2         0         0         -0.00     48.58     301.41
```

*SECNO 14581.000

14581.00	7.72	582.12	0.0	0.0	582.30	0.19	0.01	0.00	585.70
910.	0.	910.	0.	0.	262.	0.	9.	2.	585.60
0.15	0.0	3.47	0.0	0.035	0.035	0.035	0.035	574.40	252.83
0.000785	10.	10.	10.	0	0	0	-0.00	48.58	301.41

*SECNO 14630.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
O	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TTA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IOC	ICONT	CORAR	TOPWID	ENDST

D

14630.00	9.47	582.27	0.0	0.0	582.34	0.07	0.02	0.01	585.70
910.	0.	910.	0.	0.	423.	0.	9.	2.	583.90
0.16	0.0	2.15	0.0	0.035	0.035	0.035	0.035	572.80	234.11
0.000313	50.	50.	50.	2	0	0	-0.00	84.47	319.58

*SECNO 16240.000

3280 CROSS SECTION 16240.00 EXTENDED 1.75 FEET

3470 ENCROACHMENT STATIONS 142.0 276.0 TYPE 1 TARGET 134.000

E

16240.00	6.76	582.66	0.0	0.0	582.69	0.04	0.35	0.00	586.90
910.	0.	910.	0.	0.	589.	0.	28.	6.	100000.00
0.45	0.0	1.55	0.0	0.035	0.035	0.035	0.035	575.90	147.96
0.000161	1610.	1610.	1610.	2	0	0	-0.01	119.35	267.32

*SECNO 17240.000

3470 ENCROACHMENT STATIONS 247.0 353.0 TYPE 1 TARGET 106.000

F

17240.00	6.57	582.87	0.0	0.0	582.98	0.11	0.27	0.02	585.40
910.	0.	910.	0.	0.	341.	0.	37.	8.	100000.00
0.54	0.0	2.67	0.0	0.035	0.035	0.035	0.035	576.30	250.85
0.000714	900.	900.	900.	0	0	0	-0.01	92.99	343.84

CCHV 0.300 CEHV 0.500

*SECNO 17290.000

G C & O R. R. BRIDGE , WIDTH 9, LENGTH 68, LC 583.6, TR 587.2

17290.00	6.57	582.97	0.0	0.0	583.11	0.14	0.11	0.02	587.20
910.	0.	910.	0.	0.	302.	0.	39.	8.	587.20
0.56	0.0	3.01	0.0	0.035	0.035	0.035	0.035	576.40	250.00
0.000786	150.	150.	150.	2	0	0	-0.00	70.00	320.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	ROLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.50	2.50	0.0	70.00	4.80	330.00	0.0	578.40	578.40

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*SECNO 17291.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     582.95 BRIDGE VELOCITY .      3.07      CALCULATED CHANNEL AREA .      296.

 EGPRS      EGLWC       H3       QWEIR       QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                  AREA
    0.0     583.13     0.02          0.      910.       330.      339.      583.60     587.20

 17291.00     6.59   582.99      0.0       0.0    583.13      0.14      0.02      0.0     587.20
     910.       0.     910.       0.        0.      304.        0.       39.       8.     587.20
     0.56      0.0     3.00      0.0     0.035     0.035     0.035     0.035    576.40    250.00
 0.000772       9.       9.       9.         0         0         0     -0.00     70.00    320.00

*SECNO 17340.000
3280 CROSS SECTION  17340.00 EXTENDED      1.56 FEET

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

3470 ENCROACHMENT STATIONS      200.0      350.0  TYPE      1  TARGET      150.000

        H

 17340.00     5.76   583.16      0.0       0.0    583.20      0.04      0.04      0.03    580.80
     910.       0.     910.       0.        0.      581.        0.       40.       9. 100000.00
     0.58      0.0     1.56      0.0     0.035     0.035     0.035     0.035    576.40    200.00
 0.000231     100.     100.     100.         2         0         0     -0.01    150.00    350.00

CCHV    0.100 CEHV    0.300
*SECNO 17415.000

3470 ENCROACHMENT STATIONS      183.0      363.0  TYPE      1  TARGET      180.000

        I

 17415.00     7.00   583.30      0.0       0.0    583.38      0.08      0.17      0.01    584.50
     910.       0.     910.       0.        0.      396.        0.       46.      10.     534.20
     0.65      0.0     2.30      0.0     0.060     0.035     0.060     0.035    576.30    235.60
 0.000343     600.     600.     600.         2         0         0     -0.01     76.60    312.20

CCHV    0.300 CEHV    0.500
*SECNO 17465.000

3301 HV CHANGED MORE THAN HVINS

        J   NORTHBOUND I-675, WIDTH 44, LENGTH 80,LC 587.5, TR 590.4

 17465.00     2.31   583.11      0.0       0.0    583.77      0.66      0.10      0.29    591.00
     910.       0.     910.       0.        0.      140.        0.       47.      10.     591.00
     0.65      0.0     6.51      0.0     0.035     0.035     0.035     0.035    580.80    240.00
 0.011407     100.     100.     100.         2         0         0     -0.00     80.00    320.00

*SECNO 17466.000
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3370 NORMAL BRIDGE,NRD 2 MIN ELTRD 591.00 MAX ELLC 585.30

17466.00	2.47	583.27	0.0	0.0	583.83	0.56	0.03	0.03	591.00
910.	0.	910.	0.	0.	151.	0.	47.	10.	591.00
0.65	0.0	6.02	0.0	0.035	0.025	0.035	0.035	580.80	240.00
0.004498	5.	5.	5.	3	0	0	-0.00	80.00	320.00

*SECNO 17467.000

3370 NORMAL BRIDGE,NRD 2 MIN ELTRD 590.40 MAX ELLC 587.60

17467.00	7.70	583.90	0.0	0.0	584.00	0.10	0.03	0.14	590.40
910.	0.	910.	0.	0.	366.	0.	47.	11.	590.40
0.66	0.0	2.49	0.0	0.035	0.025	0.035	0.035	576.20	251.69
0.000231	44.	44.	44.	2	0	0	-0.01	76.53	328.22

*SECNO 17468.000

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
17468.00	7.70	583.90	0.0	0.0	584.00	0.10	0.00	0.00	590.40
910.	0.	910.	0.	0.	366.	0.	47.	11.	590.40
0.66	0.0	2.48	0.0	0.035	0.030	0.035	0.035	576.20	251.69
0.000330	5.	5.	5.	0	0	0	-0.01	76.54	328.22

*SECNO 17515.000

K

17515.00	7.24	583.94	0.0	0.0	584.02	0.08	0.02	0.00	585.90
910.	0.	910.	0.	0.	403.	0.	48.	11.	585.40
0.67	0.0	2.26	0.0	0.035	0.030	0.035	0.035	576.70	260.22
0.000234	70.	70.	70.	2	0	0	-0.01	75.97	336.20

*SECNO 17600.000

L NORTHBOUND I-75 BRIDGE, WIDTH 61, LENGTH 46, LC 584.9, TR 588.8

17600.00	7.82	583.92	0.0	0.0	584.08	0.16	0.02	0.04	588.80
910.	0.	910.	0.	0.	284.	0.	48.	11.	588.80
0.67	0.0	3.20	0.0	0.035	0.030	0.035	0.035	576.10	253.00
0.000453	70.	70.	70.	2	0	0	-0.00	46.00	299.00

*SECNO 17601.000

3370 NORMAL BRIDGE,NRD 2 MIN ELTRD 588.60 MAX ELLC 584.90

17601.00	7.82	583.92	0.0	0.0	584.08	0.16	0.00	0.00	588.80
910.	0.	910.	0.	0.	284.	0.	48.	11.	588.80
0.67	0.0	3.20	0.0	0.035	0.025	0.035	0.035	576.10	253.00
0.000314	1.	1.	1.	0	0	0	-0.00	46.00	299.00

*SECNO 17602.000

3370 NORMAL BRIDGE,NRD 2 MIN ELTRD 588.60 MAX ELLC 584.90

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17602.00     7.85    583.95     0.0      0.0    584.10     0.16     0.02     0.00   588.80
   910.        0.      910.      0.       0.     285.       0.      49.      11.    588.80
   0.68      0.0       3.19     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000311      68.      68.      68.       0        0        0    -0.00    46.00   299.00


*SECNO 17603.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

17603.00     7.85    583.95     0.0      0.0    584.10     0.16     0.00     0.00   588.80
   910.        0.      910.      0.       0.     285.       0.      49.      11.    588.80
   0.68      0.0       3.19     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000311       1.       1.       1.       0        0        0    -0.00    46.00   299.00


*SECNO 17665.000

      M   SOUTHBOUND I-75 BRIDGE, SAME DIMENSIONS AS NORTHBOUND

17665.00     7.86    583.96     0.0      0.0    584.11     0.16     0.01     0.00   588.80
   910.        0.      910.      0.       0.     286.       0.      49.      11.    588.80
   0.68      0.0       3.18     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000310      30.      30.      30.       0        0        0    -0.00    46.00   299.00


*SECNO 17666.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

17666.00     7.86    583.96     0.0      0.0    584.11     0.16     0.00     0.00   588.80
   910.        0.      910.      0.       0.     286.       0.      49.      11.    588.80
   0.68      0.0       3.18     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000310       1.       1.       1.       0        0        0    -0.00    46.00   299.00


*SECNO 17667.000

3370 NORMAL BRIDGE,NRD   2 MIN ELTRD   588.60 MAX ELLC   584.90

17667.00     7.88    583.98     0.0      0.0    584.14     0.16     0.02     0.00   588.80
   910.        0.      910.      0.       0.     287.       0.      50.      11.    588.80
   0.69      0.0       3.17     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000306      68.      68.      68.       0        0        0    -0.00    46.00   299.00


*SECNO 17668.000
17668.00     7.88    583.98     0.0      0.0    584.14     0.16     0.00     0.00   588.80
   910.        0.      910.      0.       0.     287.       0.      50.      11.    588.80
   0.69      0.0       3.17     0.0    0.035    0.025    0.035    0.034   576.10   253.00
0.000306       1.       1.       1.       0        0        0    -0.00    46.00   299.00


*SECNO 17715.000
3280 CROSS SECTION  17715.00 EXTENDED      1.34 FEET

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST
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3470 ENCROACHMENT STATIONS       215.0      355.0  TYPE       1  TARGET       140.000

        N

 17715.00      7.93    584.13      0.0       0.0     584.19      0.06      0.02      0.03    584.50
     910.        0.      910.       0.        0.      482.        0.       50.       11.     585.30
     0.70       0.0      1.89      0.0     0.035     0.035     0.035     0.034    576.20    242.77
 0.000202      100.      100.     100.         2         0         0     -0.01     84.46    327.23

CCHV     0.100 CEHV     0.300
*SECNO 17915.00D
3280 CROSS SECTION  17915.00 EXTENDED       1.39 FEET


3470 ENCROACHMENT STATIONS       200.0      350.0  TYPE       1  TARGET       150.000

        O   U/S OF CONFLUENCE POINT WITH GOETZ DRAIN, REPEATING N

 17915.00      7.99    584.19      0.0       0.0     584.23      0.04      0.03      0.00    584.50
     780.        0.      780.       0.        0.      486.        0.       53.       12.     585.30
     0.74       0.0      1.60      0.0     0.050     0.035     0.050     0.034    576.20    242.66
 0.000145      200.      200.     200.         0         0         0     -0.01     84.64    327.30

CCHV     0.100 CEHV     0.300
*SECNO 18940.000

3265 DIVIDED FLOW

3280 CROSS SECTION  18940.00 EXTENDED       0.59 FEET


3470 ENCROACHMENT STATIONS       230.0      540.0  TYPE       1  TARGET       310.000

        P   REPEATING N WITH ELEV ADJUSTMENT

 18940.00      7.19    584.39      0.0       0.0     584.44      0.05      0.21      0.00    585.50
     780.        0.      779.       1.        0.      420.       10.       65.       14.     586.30
     0.92       0.0      1.85      0.09     0.100     0.035     0.100     0.034    577.20    244.33
 0.000223     1200.     1200.    1200.         0         0         0     -0.01    124.26    540.00

*SECNO 19840.000
3280 CROSS SECTION  19840.00 EXTENDED       4.33 FEET


3470 ENCROACHMENT STATIONS       100.0      470.0  TYPE       1  TARGET       370.000

        Q

 19840.00      6.52    584.52      0.0       0.0     584.53      0.01      0.09      0.00    581.40
     780.       67.      436.     277.      230.      427.      931.       84.       19.     582.10
     1.23       0.29      1.02      0.30     0.100     0.035     0.100     0.034    578.00    100.00
 0.000064      800.      800.     800.         1         0         0     -0.01    370.00    470.00

*SECNO 21040.000
3280 CROSS SECTION  21040.00 EXTENDED       3.43 FEET
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3470 ENCROACHMENT STATIONS          0.0      330.0  TYPE       1  TARGET       329.999

        R   REPEATING Q WITH ELEV ADJUSTMENT

 21040.00      5.63    584.63      0.0       0.0     584.64      0.01      0.11      0.00    582.40
     780.       303.      365.      113.      521.      354.      241.      121.       29.    583.10
     1.66      0.58      1.03      0.47     0.070     0.045     0.070     0.036    579.00      2.51
 0.000138     1200.     1200.     1200.         2         0         0     -0.02    327.49    330.00

CCHV    0.300 CEHV    0.500
*SECNO 22340.000
3280 CROSS SECTION  22340.00 EXTENDED      2.13 FEET

   SECNO     DEPTH     CWSEL     CRTWS     WSELK     EG        HV        HL        CLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLCBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

3470 ENCROACHMENT STATIONS        243.0      307.0  TYPE       1  TARGET        64.000

        S

 22340.00      8.23    584.83      0.0       0.0     584.91      0.08      0.23      0.03    586.40
     780.        0.       780.       0.        0.       350.       0.       138.       33. 100000.00
     1.79       0.0      2.23      0.0     0.035     0.045     0.035     0.037    576.60    245.16
 0.000477     1000.     1000.     1000.         2         0         0     -0.01     60.36    305.53

*SECNO 22390.000
3280 CROSS SECTION  22390.00 EXTENDED      1.95 FEET

3470 ENCROACHMENT STATIONS        245.0      307.0  TYPE       1  TARGET        62.000

        T   FARM BRIDGE, DECK-TRUSS, REGARDED AS CROSS SECTION WITH HIGHER N

 22390.00      7.05    584.85      0.0       0.0     584.95      0.10      0.03      0.01    586.80
     780.        0.       730.       0.        0.       304.       0.       138.       33. 100000.00
     1.79       0.0      2.55      0.0     0.035     0.045     0.035     0.037    577.80    250.00
 0.000678       50.       50.       50.         0         0         0     -0.00     51.25    301.25

*SECNO 22391.000
3280 CROSS SECTION  22391.00 EXTENDED      1.95 FEET

3470 ENCROACHMENT STATIONS        245.0      307.0  TYPE       1  TARGET        62.000
 22391.00      7.05    584.85      0.0       0.0     584.96      0.10      0.01      0.00    586.80
     780.        0.       780.       0.        0.       305.       0.       138.       33. 100000.00
     1.80       0.0      2.56      0.0     0.035     0.045     0.035     0.037    577.80    250.00
 0.000676       10.       10.       10.         0         0         0     -0.00     51.25    301.25

*SECNO 22440.000
3280 CROSS SECTION  22440.00 EXTENDED      1.92 FEET

3470 ENCROACHMENT STATIONS        233.0      303.0  TYPE       1  TARGET        70.000
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        J
  22440.00      7.42    584.92      0.0       0.0     584.99      0.08      0.03      0.01    585.50
      780.        0.      780.        0.        0.      353.        0.      139.       33.  100000.00
      1.80       0.0      2.21       0.0     0.035     0.045     0.035     0.037    577.50    242.07
  0.000473       50.       50.       50.         2         0         0     -0.00     60.93    303.00

CCHV     0.100 CEHV     0.300
*SECNO 22665.000

3470 ENCROACHMENT STATIONS       240.0      290.0  TYPE       1  TARGET        50.000

        V

  22665.00      7.01    585.01      0.0       0.0     585.12      0.11      0.12      0.01    585.10
      780.        0.      780.        0.        0.      290.        0.      140.       33.  100000.00
      1.82       0.0      2.69       0.0     0.035     0.045     0.035     0.037    578.00    240.00
  0.000784      200.      200.      200.         2         0         0     -0.00     50.00    290.00

CCHV     0.300 CEHV     0.500
*SECNO 22715.000
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

        W   FOOT BRIDGE, WIDTH 26, LENGTH 41, LC 584.9, TR 586.9

  22715.00      8.08    585.08      0.0       0.0     585.23      0.16      0.09      0.02    586.90
      780.        0.      780.        0.        0.      245.        0.      141.       33.    586.90
      1.83       0.0      3.18       0.0     0.035     0.045     0.035     0.037    577.00    251.00
  0.001041      100.      100.      100.         0         0         0     -0.00     40.05    291.05

*SECNO 22716.000

3370 NORMAL BRIDGE,NRD    2 MIN ELTRD    586.90 MAX ELLC    584.90

  22716.00      8.07    585.07      0.0       0.0     585.24      0.17      0.00      0.00    586.90
      780.        0.      780.        0.        0.      238.        0.      141.       33.    586.90
      1.83       0.0      3.28       0.0     0.035     0.045     0.035     0.037    577.00    251.00
  0.002572        1.        1.        1.         0         0         0     -7.12     40.06    291.06

*SECNO 22717.000

3370 NORMAL BRIDGE,NRD    2 MIN ELTRD    586.90 MAX ELLC    584.90

  22717.00      8.14    585.14      0.0       0.0     585.31      0.17      0.07      0.0     586.90
      780.        0.      780.        0.        0.      238.        0.      141.       34.    586.90
      1.83       0.0      3.28       0.0     0.035     0.045     0.035     0.037    577.00    251.00
  0.002572       26.       26.       26.         1         0         0     -9.24     40.08    291.08

*SECNO 22871.000
  22871.00      8.16    585.16      0.0       0.0     585.31      0.15      0.00      0.00    586.90
      780.        0.      780.        0.        0.      243.        0.      141.       34.    586.90
      1.83       0.0      3.14       0.0     0.035     0.045     0.035     0.037    577.00    251.00
  0.001003        1.        1.        1.         1         0         0     -0.00     40.10    291.10

*SECNO 22730.000
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3280 CROSS SECTION  22730.00 EXTENDED      0.92 FEET


3470 ENCROACHMENT STATIONS       243.0      296.0  TYPE       1  TARGET        53.000

        X   USING Y

 22730.00      7.02    535.22      0.0       0.0    585.34      0.12      0.01      0.01    585.30
     780.        0.     780.       0.        0.     282.        0.      141.       34.  100000.00
     1.83       0.0      2.76      0.0     0.035     0.045     0.035     0.037    578.20    243.12
 0.000811       15.      15.       15.         2         0         0     -0.00     50.40    293.53


CCHV    0.100 CEHV    0.300
*SECNO 23090.000
3280 CROSS SECTION  23090.00 EXTENDED      1.13 FEET

   SECNO     DEPTH     CHSEL     CPINS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       HTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IOC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS       243.0      296.0  TYPE       1  TARGET        53.000

        Y

 23090.00      7.23    585.43      0.0       0.0    585.54      0.11      0.20      0.00    585.80
     780.        0.     730.       0.        0.     293.        0.      143.       34.  100000.00
     1.87       0.0      2.66      0.0     0.020     0.035     0.035     0.037    578.20    243.08
 0.000438      350.     350.      350.         2         0         0     -0.00     50.63    293.71


CCHV    0.300 CEHV    0.500
*SECNO 23140.000
3280 CROSS SECTION  23140.00 EXTENDED      0.73 FEET


3470 ENCROACHMENT STATIONS       250.0      290.0  TYPE       1  TARGET        40.000

        Z   FARM BRIDGE, WIDTH 16, LENGTH 40, LC 586.1, TR 587.6

 23140.00      7.83    585.43      0.0       0.0    585.60      0.17      0.03      0.03    587.60
     780.        0.     730.       0.        0.     239.        0.      144.       34.  100000.00
     1.88       0.0      3.25      0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000853       50.      50.       50.         2         0         0     -0.00     38.23    288.23


*SECNO 23141.000
3280 CROSS SECTION  23141.00 EXTENDED      0.73 FEET


3370 NORMAL BRIDGE,NRD    2 MIN ELTRD   587.60 MAX ELLC   586.20


3470 ENCROACHMENT STATIONS       250.0      290.0  TYPE       1  TARGET        40.000
 23141.00      7.83    585.43      0.0       0.0    585.60      0.17      0.00      0.00    587.60
     780.        0.     780.       0.        0.     239.        0.      144.       34.  100000.00
     1.88       0.0      3.25      0.0     0.020     0.040     0.035     0.037    577.60    250.00
 0.000852        1.       1.        1.         0         0         0     -0.00     38.23    288.23
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*SECNO 23142.000
3280 CROSS SECTION  23142.00 EXTENDED      0.75 FEET


3370 NORMAL BRIDGE,NRD   2 MIN ELTRC   587.60 MAX ELLC   556.20


3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE      1  TARGET        40.000
 23142.00      7.85    585.45      0.0        0.0    585.61      0.16      0.01      0.00    587.60
     780.        0.      780.       0.         0.     239.        0.       144.       34.  100000.00
     1.88      0.0       3.26      0.0      0.020    0.040     0.035     0.037    577.60    250.00
 0.000847       16.       16.       16.         0        0         0     -0.00     38.24    288.24


*SECNO 23143.000
3280 CROSS SECTION  23143.00 EXTENDED      0.75 FEET


3470 ENCROACHMENT STATIONS        250.0      290.0  TYPE      1  TARGET        40.000
 23143.00      7.85    585.45      0.0        0.0    585.61      0.16      0.00      0.00    587.60
     780.        0.      780.       0.         0.     240.        0.       144.       34.  100000.00
     1.88      0.0       3.26      0.0      0.020    0.040     0.035     0.037    577.60    250.00
 0.000846        1.        1.        1.         0        0         0     -0.00     38.24    288.24


*SECNO 23190.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
     Q       QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       NTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS        244.0      295.0  TYPE      1  TARGET        54.000

       AA

 23190.00      7.95    585.55      0.0        0.0    585.66      0.11      0.03      0.02    586.30
     780.        0.      780.       0.         0.     289.        0.       144.       34.  100000.00
     1.88      0.0       2.70      0.0      0.020    0.040     0.035     0.037    577.60    244.87
 0.000574       50.       50.       50.         2        0         0     -0.00     50.45    295.31


CCHV    0.100 CEHV    0.300
*SECNO 24530.000

3470 ENCROACHMENT STATIONS        132.0      168.0  TYPE      1  TARGET        36.000

       AB

 24530.00      8.40    586.90      0.0        0.0    587.23      0.33      1.50      0.06    589.20
     780.        0.      780.       0.         0.     170.        0.       151.       35.  100000.00
     1.96      0.0       4.59      0.0      0.020    0.050     0.030     0.039    578.50    134.61
 0.003101     1340.     1340.     1340.         2        0         0     -0.00     31.52    166.13


*SECNO 250.000

3470 ENCROACHMENT STATIONS        132.0      168.0  TYPE      1  TARGET        36.000

       AC   SOUTH BRANCH,  U/S OF CONFLUENCE POINT WITH KOCHVILLE DRAIN

   250.00      8.98    587.48      0.0        0.0    587.60      0.12      0.35      0.02    589.20
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     530.        0.      530.        0.        0.      183.        0.      152.       35. 100000.00
     1.98       0.0      2.82       0.0     0.020     0.050     0.030     0.039   578.50    133.96
 0.001081      185.      185.      185.         2         0         0     -0.00    32.89    166.85

CCHV    0.300 CEHV    0.500
*SECNO 300.000

      AD   MICHIGAN ROAD CULVERT, INVERT 580.1, CROWN 580.4, TR 589.9

           STRUCTURAL PLATE PIPE ARCH 12'10  X 8'4  X 36"

   300.00      7.40   537.50       0.0       0.0   583.03      0.54      0.22      0.21   589.90
     530.        0.     530.        0.        0.     90.        0.     152.       36.    589.90
     1.99       0.0      5.87       0.0     0.020     0.050     0.030     0.039   580.10    193.50
 0.007096      100.      100.      100.         2         0         0     -0.00    13.00    206.50

*SECNO 301.000

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD   589.90 MAX ELLC   589.90

   301.00      7.31   587.41       0.0       0.0   588.13      0.71      0.01      0.09   589.90
     530.        0.     530.        0.        0.     78.        0.     152.       36.    589.90
     1.99       0.0      6.77       0.0     0.020     0.031     0.030     0.039   580.10    193.50
 0.004950        1.        1.        1.         2         0         0    -10.96    13.00    206.50

*SECNO 302.000
   SECNO     DEPTH     CHSEL     CRINS     WSELK        EG        HV        HL     OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       ITN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD   589.90 MAX ELLC   589.90

   302.00      7.52   587.62       0.0       0.0   588.31      0.69      0.18      0.01   589.90
     530.        0.     530.        0.        0.     80.        0.     152.       36.    589.90
     1.99       0.0      6.66       0.0     0.020     0.031     0.030     0.039   580.10    193.50
 0.004910       36.       36.       36.         0         0         0    -12.50    13.00    206.50

*SECNO 303.000
   303.00      7.80   587.90       0.0       0.0   588.38      0.48      0.01      0.06   589.90
     530.        0.     530.        0.        0.     96.        0.     152.       36.    589.90
     1.99       0.0      5.55       0.0     0.020     0.050     0.030     0.039   580.10    193.50
 0.006126        1.        1.        1.         2         0         0     -0.00    13.00    206.50

*SECNO 350.000

3470 ENCROACHMENT STATIONS      130.0     171.0  TYPE      1  TARGET      41.000

      AE

   350.00      9.37   588.57       0.0       0.0   588.66      0.09      0.17      0.12   589.50
     530.        0.     530.        0.        0.    220.        0.     153.       36. 100000.00
     2.00       0.0      2.41       0.0     0.020     0.050     0.030     0.039   579.20    131.53
 0.000764      100.      100.      100.         2         0         0     -0.00    38.97    170.50

CCHV    0.100 CEHV    0.300
*SECNO 1550.000
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3470 ENCROACHMENT STATIONS 237.0 277.0 TYPE 1 TARGET 40.000

AF

1550.00	9.67	589.57	0.0	0.0	589.68	0.11	1.01	0.01	590.20
530.	0.	530.	0.	0.	202.	0.	158.	37.	100000.00
2.12	0.0	2.63	0.0	0.020	0.050	0.030	0.040	579.90	238.06
0.001015	1150.	1150.	1150.	3	0	0	-0.00	38.94	277.00

*SECNO 2800.000
3280 CROSS SECTION 2300.00 EXTENDED 1.13 FEET

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AG

2800.00	3.43	590.63	0.0	0.0	590.71	0.08	1.03	0.00	589.80
530.	78.	426.	26.	34.	181.	25.	164.	38.	589.60
2.27	2.30	2.35	1.06	0.020	0.050	0.040	0.041	582.20	210.00
0.000737	1200.	1200.	1200.	1	0	0	-0.00	80.00	290.00

CCHV 0.300 CEHV 0.500
*SECNO 2850.000
3280 CROSS SECTION 2850.00 EXTENDED 0.09 FEET

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

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AH DAVIS ROAD CULVERT, INVERT 582.2, CROWN 589.6, TR 590.5

STRUCTURAL PLATE PIPE ARCH 11'7 X 7'5 X 30'

2850.00	8.39	590.59	0.0	0.0	591.08	0.48	0.16	0.20	590.50
530.	4.	525.	2.	3.	93.	3.	165.	38.	590.50
2.27	1.19	5.61	0.60	0.020	0.050	0.040	0.041	582.20	160.00
0.006390	100.	100.	100.	2	0	0	-0.00	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	1.80	2.50	0.0	11.80	0.0	67.00	0.0	582.20	582.20

*SECNO 2851.000
3280 CROSS SECTION 2851.00 EXTENDED 0.48 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD

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  592.34    591.08      0.0       196.      334.       67.       37.      589.60    590.50


3470 ENCROACHMENT STATIONS       160.0     240.0  TYPE      1  TARGET       80.000
  2851.00     8.78   590.98      0.0       0.0    591.29     0.31      0.21      0.0    590.50
     530.      48.     459.      24.       16.      98.      16.      165.      38.    590.50
     2.27     2.91     4.63     1.45     0.020    0.050    0.040     0.041   582.20   160.00
 0.004163      30.      30.      30.         3        0        3     -0.00    80.00   240.00


*SECNO 2900.000
3280 CROSS SECTION   2900.00 EXTENDED      1.72 FEET


3470 ENCROACHMENT STATIONS       210.0     290.0  TYPE      1  TARGET       80.000

        AI

  2900.00     9.12   591.42      0.0       0.0    591.48     0.06      0.12      0.07   590.10
     530.      72.     364.      94.       33.     170.      63.      165.      39.    589.20
     2.29     2.19     2.14     1.50     0.020    0.050    0.040     0.041   582.30   210.00
 0.000592     100.     100.     100.         2        0        0     -0.01    80.00   290.00


CCHV    0.100 CEHV    0.300
*SECNO 3500.000
3280 CROSS SECTION   3500.00 EXTENDED      2.00 FEET


3470 ENCROACHMENT STATIONS       210.0     290.0  TYPE      1  TARGET       80.000

        AJ   REPEATING AI

  3500.00     9.41   591.71      0.0       0.0    591.77     0.06      0.28      0.00   590.10
     530.      85.     346.      99.       39.     179.      71.      169.      40.    589.20
     2.37     2.15     1.93     1.41     0.020    0.050    0.040     0.041   582.30   210.00
 0.000454     550.     550.     550.         2        0        0     -0.01    80.00   290.00


CCHV    0.100 CEHV    0.300
*SECNO 3600.000
3280 CROSS SECTION   3600.00 EXTENDED      0.20 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS       160.0     240.0  TYPE      1  TARGET       80.000

        AK   DRIVEWAY CULVERT, INVERT 583.7, CROWN 589.8, TR 591.0

             STRUCTURAL PLATE PIPE ARCH 8'10  X 6'11  X 20'

  3600.00     7.50   591.20   588.77      0.0    592.18     0.98      0.13      0.28   591.00
     530.       1.     518.      12.        0.      65.       7.      169.      40.    591.00
     2.37     2.08     8.02     1.65     0.020    0.050    0.040     0.041   583.70   192.07
 0.016856     100.     100.     100.         6       11        0     -0.00    47.93   240.00


SPECIAL BRIDGE
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SB  XK        XKOR      COFQ      ROLEV     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.75      2.50      0.0       9.00      0.0       43.00     0.0       583.70    583.70

*SECNO 3601.000
3280 CROSS SECTION   3601.00 EXTENDED      1.19 FEET


3301 HV CHANGED MORE THAN HVINS

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

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC      H3       QWEIR      OPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
   595.33    592.18     0.0       245.      285.       43.       55.      589.80    591.00


3470 ENCROACHMENT STATIONS      160.0     240.0  TYPE      1  TARGET       80.000
  3601.00     8.48   592.18     0.0       0.0    592.39     0.21     0.21     0.0     591.00
     530.     162.     273.      95.       38.      73.      42.     169.      40.     591.00
     2.37     4.24     3.72     2.25     0.020    0.050    0.040    0.041   583.70    160.00
 0.003058      20.      20.      20.         2        0        4    -0.00    80.00    240.00

*SECNO 3700.000

3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AL   REPEATING AO WITH ELEV ADJUSTMENT

  3700.00     8.76   592.46     0.0       0.0    592.54     0.09     0.14     0.01    592.20
     530.       5.     421.     104.        6.     170.      57.     170.      40.     589.90
     2.39     0.76     2.47     1.32     0.020    0.050    0.040    0.041   583.70    210.00
 0.000783     100.     100.     100.         2        0        0    -0.00    80.00    290.00

CCHV    0.100 CEHV    0.300
*SECNO 4400.000
3280 CROSS SECTION   4400.00 EXTENDED      0.21 FEET


3470 ENCROACHMENT STATIONS      210.0     290.0  TYPE      1  TARGET       80.000

        AM   REPEATING AL

  4400.00     9.22   592.92     0.0       0.0    592.98     0.06     0.44     0.00    592.20
     530.      25.     394.     111.       20.     184.      67.     174.      41.     589.90
     2.48     1.30     2.15     1.65     0.020    0.050    0.040    0.042   583.70    210.00
 0.000534     680.     680.     680.         2        0        0    -0.00    80.00    290.00

*SECNO 4500.000
3280 CROSS SECTION   4500.00 EXTENDED      1.65 FEET
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3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AN DRIVEWAY CULVERT. INVERT 583.7, CROWN 590.3, TR 591.3

STRUCTURAL PLATE PIPE ARCH 9'9 X 6'7 X 20.3'

4500.00	9.25	592.95	0.0	0.0	593.10	0.14	0.09	0.02	591.30
530.	117.	285.	129.	36.	88.	59.	174.	41.	591.30
2.49	3.25	3.23	2.22	0.020	0.050	0.040	0.042	583.70	160.00
0.001941	100.	100.	100.	2	0	0	-0.01	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFC	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	1.72	2.50	0.0	10.00	0.0	52.00	0.0	583.70	583.70

*SECNO 4501.000
3280 CROSS SECTION 4501.00 EXTENDED 1.85 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	HB	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
595.73	593.10	0.0	355.	176.	52.	66.	590.30	591.30

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

4501.00	9.45	593.15	0.0	0.0	593.26	0.11	0.17	0.0	591.30
530.	203.	215.	112.	61.	90.	65.	174.	42.	591.30
2.49	3.34	2.38	1.73	0.020	0.050	0.040	0.042	583.70	160.00
0.001023	20.	20.	20.	2	0	4	-0.00	80.00	240.00

*SECNO 4600.000
3280 CROSS SECTION 4600.00 EXTENDED 0.57 FEET

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

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AO

4600.00	8.77	593.27	0.0	0.0	593.34	0.06	0.07	0.00	592.60
530.	17.	379.	134.	15.	177.	75.	175.	42.	589.90
2.51	1.12	2.14	1.78	0.020	0.050	0.040	0.042	584.50	210.00
0.000544	100.	100.	100.	2	0	0	-0.00	80.00	290.00

*SECNO 4950.000
3280 CROSS SECTION 4950.00 EXTENDED 0.75 FEET

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

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        AP   REPEATING AO

  4950.00      3.95    593.45      0.0       0.0     593.51      0.06      0.17      0.00    592.60
     530.       25.      357.      148.       20.      182.       79.      177.       42.     589.90
     2.56      1.22      1.96      1.88     0.020     0.050     0.035     0.042    584.50    210.00
 0.000438      350.      350.      350.         2         0         0     -0.00     80.00    290.00

*SECNO 5050.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS       160.0      240.0  TYPE       1  TARGET        80.000

        AQ   DRIVEWAY CULVERT, INVERT 585.3, CROWN 591.5, TR 594.4

             STRUCTURAL PLATE PIPE ARCH 8'10  X 6'11  X 21'

  5050.00      7.59    592.89      0.0       0.0     593.94      1.04      0.13      0.30    594.40
     530.        0.      530.        0.        0.       65.        0.      177.       42.     594.40
     2.56      0.0       8.19      0.0     0.020     0.050     0.035     0.042    585.30    195.50
 0.017944      100.      100.      100.         2         0         0     -0.00      9.00    204.50

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.0       1.75       2.50       0.0        9.00       0.0        43.00      0.0       582.80     582.80

*SECNO 5051.000
3280 CROSS SECTION   5051.00 EXTENDED       0.08 FEET

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC       H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                     AREA
   597.02    592.85      0.0        136.       394.        43.        78.       591.50     594.40

3470 ENCROACHMENT STATIONS       195.5      204.5  TYPE       1  TARGET         9.000
  5051.00      9.17    594.47      0.0       0.0     595.17      0.70      1.24      0.0     594.40
     530.        0.      530.        0.        0.       79.        0.      177.       42.  100000.00
     2.56      0.0       6.72      0.0     0.020     0.050     0.035     0.042    585.30    195.50
 0.011082       21.       21.       21.         2         0         4     -0.00      9.00    204.50

*SECNO 5150.000
3280 CROSS SECTION   5150.00 EXTENDED       1.50 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS       210.0      290.0  TYPE       1  TARGET        80.000

        AR   REPEATING AO WITH ELEV ADJUSTMENT

  5150.00      9.90    595.30      0.0       0.0     595.35      0.05      0.11      0.06    594.40
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     530.      35.     384.     111.      26.     200.      68.     178.      43.    592.20
     2.58     1.34     1.92     1.63   0.020    0.050   0.035    0.042    585.40    210.00
 0.000391     100.     100.     100.       2        0       0    -0.00     80.00    290.00


CCHV    0.300 CEHV    0.500
*SECNO 5250.000
3280 CROSS SECTION    5250.00 EXTENDED      1.53 FEET

   SECNO     DEPTH     CWSEL     CRIWS     *SELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       T.A    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS     160.0     240.0  TYPE      1  TARGET       80.000

        AS   DRIVEWAY CULVERT, INVERT 585.4, CROWN 592.5, TR 593.8

             STRUCTURAL PLATE PIPE ARCH 10'11  X 7'1  X 22'

  5250.00      9.93    595.33      0.0       0.0    595.46      0.13      0.07      0.04    593.80
     530.       77.       332.     121.       29.     104.       53.      178.       43.    593.80
     2.59      2.69      3.19     2.29    0.020    0.050    0.035    0.042    585.40    160.00
 0.001739      100.      100.     100.        2        0        0    -0.00     80.00    240.00


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      ROLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    0.0       1.70      2.50      0.0       11.00     0.0       61.00     0.0       585.40    585.40

*SECNO 5251.000
3280 CROSS SECTION    5251.00 EXTENDED      1.74 FEET

PRESSURE AND WEIR FLOW

 EGPRS     EGLWC     H3        QWEIR     OPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                             AREA
 597.32    595.46    0.0       321.      209.      61.       78.       592.50    593.80


3470 ENCROACHMENT STATIONS     160.0     240.0  TYPE      1  TARGET       80.000
  5251.00     10.14    595.54      0.0       0.0    595.64      0.10      0.18      0.0     593.80
     530.      170.      251.     109.       56.     106.       60.      178.       43.    593.80
     2.59      3.04      2.36     1.81    0.020    0.050    0.035    0.042    585.40    160.00
 0.000925       22.       22.      22.        2        0        4    -0.00     80.00    240.00


*SECNO 5350.000
3280 CROSS SECTION    5350.00 EXTENDED      1.67 FEET


3470 ENCROACHMENT STATIONS     210.0     290.0  TYPE      1  TARGET       80.000
        AT REPEATING AD WITH ELEV ADJUSTMENT

  5350.00     10.46    595.66      0.0       0.0    595.70      0.04      0.04      0.02    594.00
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     530.      70.     341.     113.      46.     216.      83.     179.      43.    591.90
     2.61     1.52     1.58     1.43    0.020    0.050    0.035    0.042   585.20    210.00
 0.000238     100.     100.     100.        1        0        0    -0.00    80.00    290.00

*SECNO 5550.000
3280 CROSS SECTION    5550.00 EXTENDED       0.82 FEET

3470 ENCROACHMENT STATIONS       210.0      290.0  TYPE       1  TARGET        80.000

        AU   REPEATING AT

  5550.00     9.62   595.72      0.0      0.0   595.77     0.05     0.06     0.01   594.90
     530.      74.     355.     101.      41.     191.      54.     181.      43.    592.80
     2.64     1.81     1.86     1.57    0.020    0.050    0.035    0.042   586.10    210.00
 0.000387     200.     200.     200.        2        0        0    -0.00    80.00    290.00

CCHV    0.300 CEHV    0.500
*SECNO 5650.000
3280 CROSS SECTION    5650.00 EXTENDED       0.81 FEET

3470 ENCROACHMENT STATIONS       160.0      240.0  TYPE       1  TARGET        80.000

        AV   DRIVEWAY CULVERT, INVERT 586.1, CROWN 592.2, TR 594.9

             STRUCTURAL PLATE PIPE ARCH 8'10  X 6'1  X 20.5'

  5650.00     9.61   595.71      0.0      0.0   595.95     0.25     0.09     0.10   594.90
     530.     114.     350.      65.      29.      83.      29.     181.      43.    594.90
     2.64     3.98     4.21     2.28    0.020    0.050    0.035    0.042   586.10    160.00
 0.003941     100.     100.     100.        2        0        0    -0.00    80.00    240.00

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.0       1.75      2.50       0.0      9.00       0.0      43.00      0.0      586.10    586.10

*SECNO 5651.000
3280 CROSS SECTION    5651.00 EXTENDED       1.27 FEET

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

PRESSURE AND WEIR FLOW

 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
  599.84    595.95      0.0       325.      205.       43.       55.      592.20    594.90

3470 ENCROACHMENT STATIONS       160.0      240.0  TYPE       1  TARGET        80.000
  5651.00    10.07   596.17      0.0      0.0   596.32     0.15     0.37      0.0    594.90
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     530.      163.      255.       96.       45.       87.       45.      181.       44.     594.90
     2.65      3.73      3.04      2.13     0.020     0.050     0.035     0.042     586.10     160.00
 0.001921       21.       21.       21.         2         0         4     -0.00      80.00     240.00

*SECNO 5750.000
3280 CROSS SECTION    5750.00 EXTENDED       1.48 FEET

3470 ENCROACHMENT STATIONS       210.0      290.0  TYPE       1  TARGET        80.000

        AW   REPEATING AO WITH ELEV ADJUSTMENT

  5750.00      9.68    596.38       0.0       0.0    596.42      0.04      0.06      0.03     595.10
     530.       56.      347.      127.       37.      198.       79.      182.       44.     592.80
     2.66      1.52      1.75      1.61     0.020     0.050     0.035     0.042     586.70     210.00
 0.000321      100.      100.      100.         2         0         0     -0.00      80.00     290.00

CCHV    0.100 CEHV    0.300
*SECNO 5850.000
3280 CROSS SECTION    5850.00 EXTENDED       1.89 FEET

3470 ENCROACHMENT STATIONS       160.0      240.0  TYPE       1  TARGET        80.000

        AX   DRIVEWAY CULVERT, INVERT 587.3, CROWN 593.4. TR 594.5

             STRUCTURAL PLATE PIPE ARCH 8'10  X 6'1  X 20.5'

  5850.00      9.08    596.38       0.0       0.0    596.49      0.12      0.05      0.02     594.50
     530.      221.      177.      132.       65.       79.       67.      182.       44.     594.50
     2.67      3.41      2.25      1.98     0.020     0.050     0.035     0.042     587.30     160.00
 0.001007      100.      100.      100.         2         0         0     -0.00      80.00     240.00

SPECIAL BRIDGE

SB  XK        XKOR       COFQ       RDLEN      BWC        BWP        BAREA      SS         ELCHU      ELCHD
     0.0       1.75       2.50        0.0       9.00       0.0       43.00      0.0       587.30     587.30

*SECNO 5851.000
3280 CROSS SECTION    5851.00 EXTENDED       2.04 FEET

PRESSURE AND WEIR FLOW

 EGPRS       EGLWC       H3        QWEIR       QPR        BAREA    TRAPEZOID       ELLC      ELTRD
                                                                      AREA
  600.51     596.49      0.0        396.       134.        43.        55.       593.40     594.50

3470 ENCROACHMENT STATIONS       160.0      240.0  TYPE       1  TARGET        80.000
  5851.00      9.24    596.54       0.0       0.0    596.64      0.11      0.15      0.0     594.50
     530.      228.      165.      136.       70.       80.       72.      182.       44.     594.50
     2.68      3.25      2.06      1.89     0.020     0.050     0.035     0.042     587.30     160.00
 0.000823       21.       21.       21.         2         0         4     -0.00      80.00     240.00

*SECNO 6000.000
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3280 CROSS SECTION 6000.00 EXTENDED 1.07 FEET

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

AY DRIVEWAY CULVERT, INVERT 587.5, CROWN 593.4, TR 595.6

STRUCTURAL PLATE PIPE ARCH 8'7 X 5'11 X 20.5

6000.00	9.18	596.68	0.0	0.0	596.98	0.20	0.21	0.03	595.60
530.	162.	231.	87.	39.	79.	38.	183.	44.	595.60
2.69	4.10	3.57	2.30	0.020	0.050	0.035	0.042	587.50	160.00
0.002771	150.	150.	150.	0	0	0	-0.00	80.00	240.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHO
	0.0	1.75	2.50	0.0	9.00	0.0	40.00	0.0	587.50	587.50

*SECNO 6001.000
3280 CROSS SECTION 6001.00 EXTENDED 1.36 FEET

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

PRESSURE AND WEIR FLOW

EGPRS	EGLUC	HB	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
601.48	596.88	0.0	371.	159.	40.	53.	593.40	595.60

3470 ENCROACHMENT STATIONS 160.0 240.0 TYPE 1 TARGET 80.000

6001.00	9.46	596.96	0.0	0.0	597.11	0.15	0.23	0.0	595.60
530.	189.	238.	103.	49.	81.	48.	183.	44.	595.60
2.69	3.82	2.93	2.15	0.020	0.050	0.035	0.042	587.50	160.00
0.001787	21.	21.	21.	2	0	4	-0.00	80.00	240.00

*SECNO 6100.000

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

AZ

6100.00	7.63	597.13	0.0	0.0	597.34	0.21	0.21	0.02	596.30
530.	71.	459.	0.	35.	120.	0.	184.	44.	597.40
2.70	2.03	3.84	0.0	0.040	0.050	0.050	0.042	589.50	210.00
0.002515	100.	100.	100.	2	0	0	-0.00	52.65	262.65

CCHV 0.100 CEHV 0.300
*SECNO 6750.000

3470 ENCROACHMENT STATIONS 210.0 290.0 TYPE 1 TARGET 80.000

BA REPEATING AZ

6750.00	8.61	598.11	0.0	0.0	598.22	0.11	0.67	0.01	596.30
530.	101.	415.	14.	63.	143.	20.	187.	45.	597.40
2.77	1.60	2.90	0.72	0.040	0.040	0.045	0.042	589.50	210.00
0.000742	700.	700.	700.	2	0	0	-0.01	80.00	290.00

*SECNO 6850.000

3470 ENCROACHMENT STATIONS 150.0 250.0 TYPE 1 TARGET 100.000

BB FARM CULVERT, INVERT 589.6, CROWN 595.7, TR 596.6

STRUCTURAL PLATE PIPE ARCH 8'10 X 6'1 X 21'

6850.00	8.62	598.22	0.0	0.0	598.33	0.10	0.11	0.00	596.60
530.	180.	219.	131.	74.	75.	61.	187.	46.	596.60
2.78	2.43	2.93	2.15	0.035	0.050	0.035	0.042	589.60	150.00
0.001794	100.	100.	100.	2	0	0	-0.01	100.00	250.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.0	2.19	2.50	0.0	9.00	0.0	43.00	0.0	589.60	589.60

*SECNO 6851.000
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
603.39	598.33	0.0	415.	117.	43.	55.	595.70	596.60

3470 ENCROACHMENT STATIONS 150.0 250.0 TYPE 1 TARGET 100.000

6851.00	8.79	598.39	0.0	0.0	598.48	0.09	0.15	0.0	596.60
530.	187.	202.	141.	81.	76.	68.	187.	46.	596.60
2.79	2.30	2.65	2.06	0.035	0.050	0.035	0.042	589.60	150.00
0.001424	21.	21.	21.	2	0	5	-0.01	100.00	250.00

*SECNO 6950.000

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS 200.0 300.0 TYPE 1 TARGET 100.000

BC

6950.00	9.50	598.50	0.0	0.0	598.57	0.07	0.09	0.00	596.00
530.	167.	361.	1.	87.	161.	4.	188.	46.	598.60
2.80	1.91	2.24	0.30	0.035	0.050	0.035	0.042	589.00	200.00
0.000657	100.	100.	100.	2	0	0	-0.00	90.30	300.00

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CCHV     0.300 CEHV     0.500
*SECNO 7375.000

3470 ENCROACHMENT STATIONS       232.0      272.0  TYPE       1  TARGET        40.000

        BD

  7375.00      7.30    598.80      0.0       0.0     598.93      0.14      0.33      0.03    599.50
     530.        0.      530.       0.        0.      180.        0.      190.       47.  100000.00
     2.84       0.0      2.95      0.0     0.030     0.040     0.030     0.042    591.50    233.37
 0.000944      420.      420.     420.         2         0         0     -0.00     38.63    272.00


CCHV     0.300 CEHV     0.500
*SECNO 7475.000

        BE   BAY ROAD CULVERT, INVERT 590.9, CROWN 599.7, TR 601.8

             ELLIPTICAL CONCRETE PIPE 13'10  X 8'10  X 86'

  7475.00      7.92    598.82      0.0       0.0     599.28      0.46      0.19      0.16    601.80
     530.        0.      530.       0.        0.       97.        0.      190.       47.    601.80
     2.84       0.0      5.46      0.0     0.030     0.050     0.030     0.042    590.90    193.00
 0.005570      100.      100.     100.         2         0         0     -0.00     14.00    207.00


*SECNO 7476.000

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD    601.80 MAX ELLC    602.20

  7476.00      7.88    598.78      0.0       0.0     599.32      0.54      0.00      0.04    601.80
     530.        0.      530.       0.        0.       90.        0.      190.       47.    601.80
     2.84       0.0      5.90      0.0     0.030     0.012     0.030     0.042    590.90    193.00
 0.000457        1.        1.       1.         2         0         0     -6.69     14.00    207.00


*SECNO 7477.000

3370 NORMAL BRIDGE,NRD  13 MIN ELTRD    601.80 MAX ELLC    602.20

  7477.00      7.93    598.83      0.0       0.0     599.36      0.54      0.04      0.00    601.80
     530.        0.      530.       0.        0.       90.        0.      190.       47.    601.80
     2.85       0.0      5.88      0.0     0.030     0.012     0.030     0.042    590.90    193.00
 0.000454       86.       86.      86.         2         0         0     -6.93     14.00    207.00


*SECNO 7478.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

  7478.00      6.04    598.94      0.0       0.0     599.39      0.45      0.00      0.03    601.80
     530.        0.      530.       0.        0.       99.        0.      190.       47.    601.80
     2.85       0.0      5.37      0.0     0.030     0.012     0.030     0.042    590.90    193.00
 0.000307        1.        1.       1.         2         0         0     -0.00     14.00    207.00


*SECNO 7575.000

3470 ENCROACHMENT STATIONS       237.0      279.0  TYPE       1  TARGET        42.000

        BF
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7575.00	8.34	599.44	0.0	0.0	599.55	0.11	0.06	0.10	599.00
530.	0.	530.	0.	0.	199.	0.	191.	47.	100000.00
2.86	0.0	2.66	0.0	0.030	0.035	0.030	0.042	591.10	237.00
0.001325	100.	100.	100.	2	0	0	-0.00	40.55	277.56

1) COUNTY: SAGINAW

2) STUDY NAME: KOCHVILLE TWP

3) WATERCOURSE: KOCHVILLE DRAIN + S. BRANCH KOCHVILLE DRAIN

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

KOCHVILLE DRAIN

AND

SOUTH BRANCH KOCHVILLE DRAIN

KOCHVILLE TOWNSHIP, MICHIGAN

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001
(616) 385-0011

June 6, 1980

Mr. Daniel H. Morgan, P.E.
Flood Insurance Unit
Flood Plain Management Section
Water Management Division
Michigan Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

Re: Kochville Township Flood Insurance Study

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the Kochville Drain and the South Branch Kochville Drain through the Township of Kochville, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood
2. Summary tables for 10-, 50-, 100- and 500-year floods
3. IPLOT for 100-year flow
4. Topographic map
5. Hydraulic Analysis Report

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES INC.

William J. McDonough, P.E.
Associate

WJM/tk

Enclosure: as listed above

KOCHVILLE DRAIN AND SOUTH BRANCH KOCHVILLE DRAIN

HYDRAULIC ANALYSIS

1. INTRODUCTION

The streams being studied are the Kochville Drain and the South Branch Kochville Drain, located in Kochville Township, Saginaw County, Michigan. Flows were developed at four points along the Kochville drainage system; for the South Branch where it enters the Kochville Drain (D.A. = 4.50 mi^2), for the Kochville Drain immediately upstream of the confluence with the South Branch (D.A. = 3.44 mi^2), for the combined flows of the Kochville and South Branch upstream of the confluence with the Goetz Drain (D.A. = 8.78 mi^2), and for the total drainage basin at the Kochville Drain Outlet (D.A. = 11.46 mi^2). These flows have been approved by the Michigan Department of Natural Resources and shown below:

TABLE 1 FLOWS FOR KOCHVILLE DRAIN

Peak Flows (cfs)

Location	10-year	50-year	100-year	500-year
South Branch U/S of confluence point with Kochville	290	460	530	760
Kochville Drain U/S of confluence point with South Branch	215	290	320	400
Kochville Drain U/S of confluence point with Goetz Drain	435	670	780	1070
Kochville Drain Outlet	510	790	910	1270

The project managers for the Flood Insurance Studies are William McDonough and Duane Ellis.

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100-, and 500-year floods were computed through the HEC-2 computer program, developed by U.S. Army Corps of Engineers (Ref. 1). Since South Branch of Kochville Drain is in the line with combining flow, the combining flow and South Branch were treated as a single stream. The Kochville Drain upstream to the junction with the South Branch was treated as a tributary to the combining flow.

2.1 Cross Sections

Cross Sections used in this study were obtained from field survey which was made in June of 1979. The locations of the cross sections are shown in Table 2 and Table 3. There are several farm bridges and driveway culverts in this study. For the bridges and culverts which experienced pressure or pressure and weir flow for 100-year flood, the special bridge routine was used. The hand calculations for XKORs were included in this report.

2.2 Roughness Coefficients

The Manning's Roughness Coefficients were established by field descriptions taken in April of 1980. Through comparison with the materials and photographs shown in page 101 to page 123 in Chow's Open Channel Hydraulics (Ref. 2), the roughness coefficients for channel and flood plains were determined. In this study the roughness coefficients for channel and flood plains are in the range of 0.025 to 0.065 and 0.02 to 0.1, respectively. In general, the channel is an excavated drain without any maintenance with brush

on the sides. The flood plains are regarded as cultivated areas. The n factor for Kochville Road is 0.02.

2.3 Starting Point and Starting Elevation

The starting elevation for Kochville Drain was determined by convergence test as shown in Figure 1. The starting elevation of 581 feet and starting energy slope of 0.002731 were used for all flows. The time of concentrations for South Branch and Kochville Drain upstream to the junction with South Branch are approximately equal. Therefore, the starting elevations for upstream Kochville Drain and South Branch Kochville Drain are the same as the combining flow at the confluence point.

Is not the Bay level Higher? Why

2.4 Encroachments

It is recognized that the flood plains for Kochville Drain system are very flat. Whenever the water goes over the top of the banks, the flooding will go every where. To fulfill the continuity under this circumstance, encroachments along both banks are necessary. The widths of the encroachments in this study were determined through trial and error procedures so that a better continuity along the channel can be obtained. In this study the natural floodway is regarded as the designated floodway.

Reference

1. HEC-2 Water Surface Profiles, Users Manual, Hydrological Engineering Center, U.S. Army Corps of Engineers, August, 1979.
2. Open-Channel Hydraulics, Ven Te Chow, McGraw-Hill, 1959.

TABLE 2 LOCATIONS OF CROSS SECTIONS - KOCHVILLE DRAIN AND SOUTH BRANCH

CROSS SECTION	SECNO	LOCATION
A	13340	13340' U/S from mouth to Saginaw River
B	14530	1190' U/S from A
C	14580 14581	Farm Bridge, Deck Truss Regular Cross Section Coding
D	14630	50' U/S from U/S face of Farm Bridge
E	16240	1660' U/S from U/S face of Farm Bridge
F	17240	150' D/S from D/S face of C & O Railroad Bridge
G	17290 17291	C & O Railroad Bridge Special Bridge Routine
H	17340	100' U/S from U/S face of C & O Railroad Bridge
I	17415	700' U.S from U/S face of C & O Railroad Bridge
J	17465 17466 17467 17468	Northbound I-675 Normal Bridge Routine
K	17515	70' D/S from D/S face of Northbound I-75
L	17600 17601 17602 17603	Northbound I-75 Normal Bridge Routine
M	17665 17666 17667 17668	Southbound I-75 Normal Bridge Routine
N	17715	100' U/S from U/S face of Southbound I-75
O	17915	U/S of the junction with Goetz Drain

CROSS SECTION	SECNO	LOCATION
P	18940	1200' U/S from the junction with Goetz Drain
Q	19840	2000' U/S from the junction with Goetz Drain
R	21040	3200' U/S from the junction with Goetz Drain
S	22340	4200' U/S from the junction with Goetz Drain
T	22390 22391	Farm Bridge Deck Truss Regular Cross Section Coding
U	22440	50' U/S from the Farm Bridge
V	22665	100' D/S from D/S face of Kochville Road Bridge
W	22715 22716 22717 22718	Kochville Road Bridge Normal Bridge Routine
X	22730	15' U/S from U/S face of Kochville Road Bridge
Y	23090	365' U/S from U/S face of Kochville Road Bridge
Z	23140 23141 23142 23143	Farm Bridge Normal Bridge Routine
AA	23190	50' U/S from Farm Bridge
AB	24530	Junction with South Branch
AC	250	South Branch Kochville Drain
AD	300 301 302 303	Michigan Road Culvert Normal Bridge Routine
AE	350	100' U/S from U/S face of Michigan Road Culvert
AF	1550	1250' U/S from U/S face of Michigan Road Culvert

CROSS SECTION	SECNO	LOCATION
AG	2800	100' D/S from D/S face of Davis Road Culvert
AH	2850 2851	Davis Road Culvert Special Bridge Routine
AI	2900	100' U/S from U/S face of Davis Road Culvert
AJ	3500	650' U/S from U/S face of Davis Road Culvert
AK	3600 3601	Driveway Culvert Special Bridge Routine
AL	3700	100' U/S from AK
AM	4400	650' U/S from AL
AN	4500 4501	Driveway Culvert Special Bridge Routine
AO	4600	100' U/S from AN
AP	4950	350' U/S from AO
AQ	5050 5051	Driveway Culvert Special Bridge Routine
AR	5150	100' U/S from AQ
AS	5250 5251	Driveway Culvert Special Bridge Routine
AT	5350	100' U/S from AS
AU	5550	200' U/S from AT
AV	5650 5651	Driveway Culvert Special Bridge Routine
AW	5750	100' U/S from AV
AX	5850 5851	Driveway Culvert Special Bridge Routine
AY	6000 6001	Driveway Culvert Special Bridge Routine
AZ	6100	100' U/S from AY

CROSS SECTION	SECNO	LOCATION
BA	6750	700' U/S from AZ
BB	6850 6851	Farm Culvert Special Bridge Routine
BC	6950	100' U/S from BB
BD	7375	420' U/S from BC
BE	7475 7476 7477 7478	Bay Road Culvert Special Bridge Routine
BF	7575	100' U/S from U/S face of Bay Road Culvert

TABLE 3 LOCATION OF CROSS SECTIONS - KOCHVILLE DRAIN

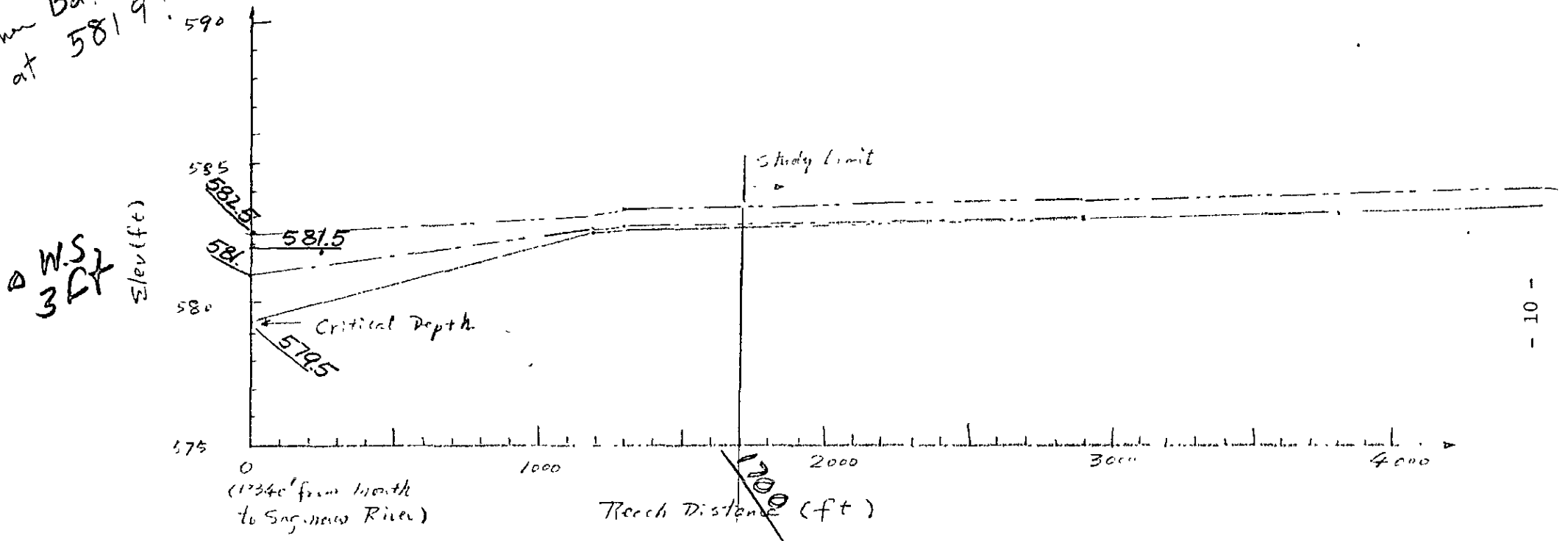
UPSTREAM OF THE JUNCTION WITH SOUTH BRANCH

CROSS SECTION	SECNO	LOCATION
A	24640 24641	Kochville Road Culvert At confluence with South Branch
B	24890 24891	Michigan Road Culvert
C	24940	100' U/S from U/S face of Michigan Road Culvert
D	25565	675' U/S from U/S face of Michigan Road Culvert
E	25615 25616	Farm Bridge
F	25665	80' U/S from E
G	26510	300' U/S from F
H	26560 26561	Farm Bridge
I	26610	50' U/S from H
J	26790	180' U/S from I
K	26840	Culvert
L	26890	50' U/S from K
M	28300	1410' U/S from L
N	28350 28351	50' U/S from M
O	28400	50' U/S from N
P	29140	760' U/S from O
Q	29190 29191	Liberty Road Bridge
R	29240	50' U/S from U/S face of Liberty Road Bridge

CROSS SECTION	SECNO	LOCATION
S	30240	1050' U/S from U/S face of Liberty Road Bridge
T	30290 30291	Davis Road Bridge
U	30340	50' U/S from U/S face of Davis Road Bridge
V	32450	2660' U/S from U/S face of Davis Road Bridge
W	32500 32501	Farm Bridge
X	32550	50' U/S from W
Y	34740	2190' U/S from X
Z	34790 34791	M-84 Culvert
AA	34840	50' U/S from U/S face of M-84 Culvert

Why start at 5 19.3 when Bay Level is normally at 5819?

Kochville Drain 04 1480



Δ W.S. 3 ft

Fig 1 Convergence Test

BRIDGE DATA

AND

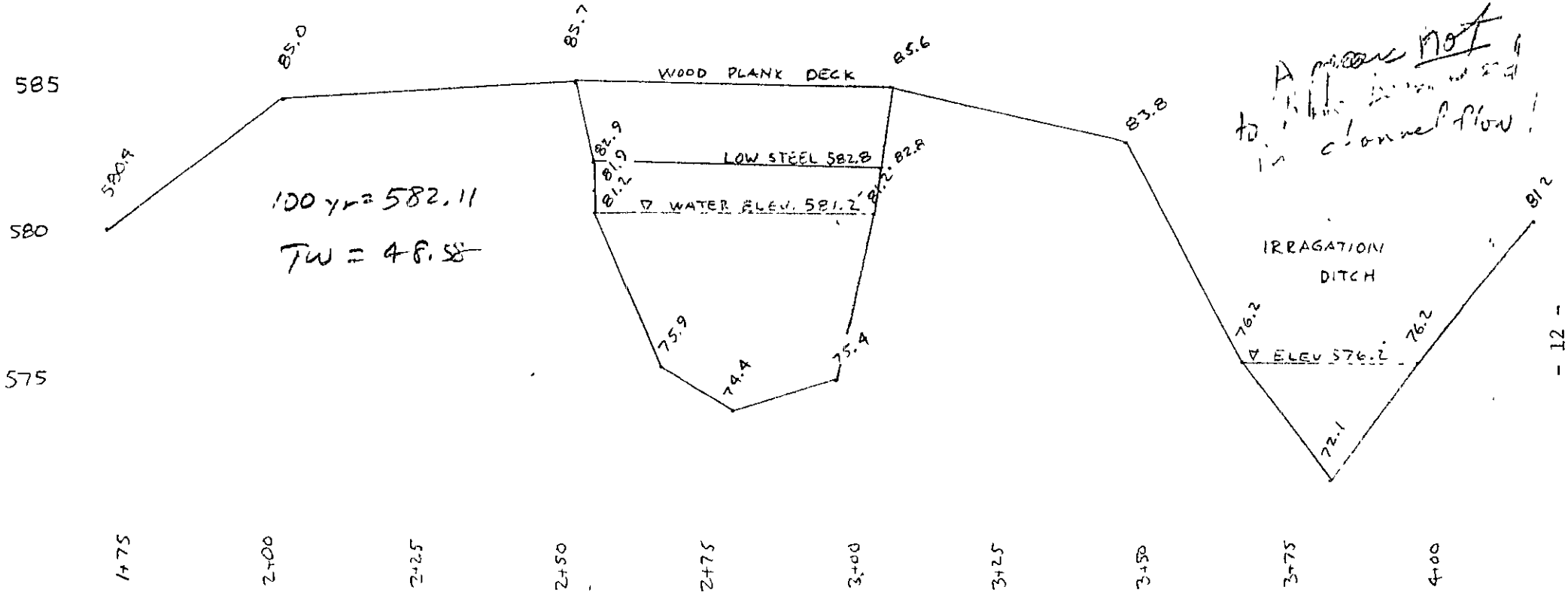
XKOR CALCULATION

KOCHVILLE TWP KOCHVILLE DRAIN 145+80 FARM BRIDGE 300' NORTH OF GOETZ RD EXT

OPEN TRUSS BRIDGE - ASSUMED TO MAKE NO DIFFERENCE

4/3/80
JB

A [illegible] not [illegible] to [illegible] in channel flow!

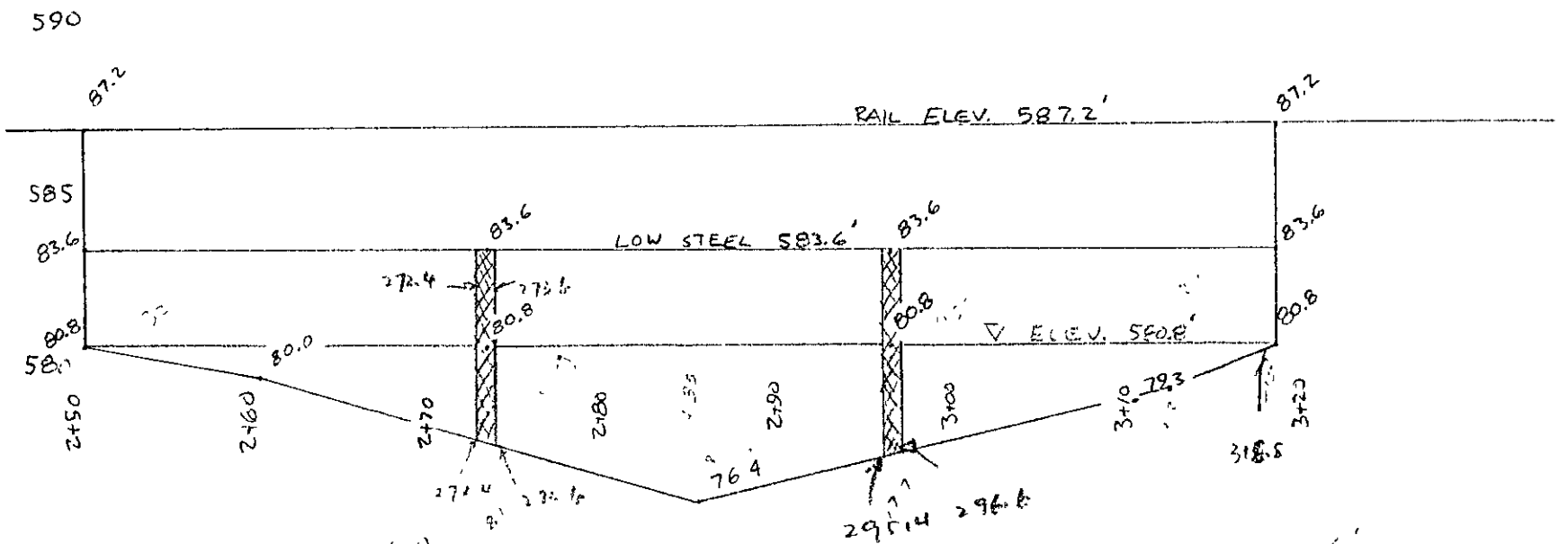


AREA = $12\ \frac{1}{2}(1.7 + 7.0) + 12.5\ \frac{1}{2}(7.0 + 8.4) + 17.5\ \frac{1}{2}(8.4 + 7.4) + 7.4(7.5)$

$= 342.20\ FT^2$

KOCHVILLE TWP KOCHVILLE DRAIN 172+90 C&O R.R. BRIDGE NORTH OF I-75 I-675 INTER.

9' LONG



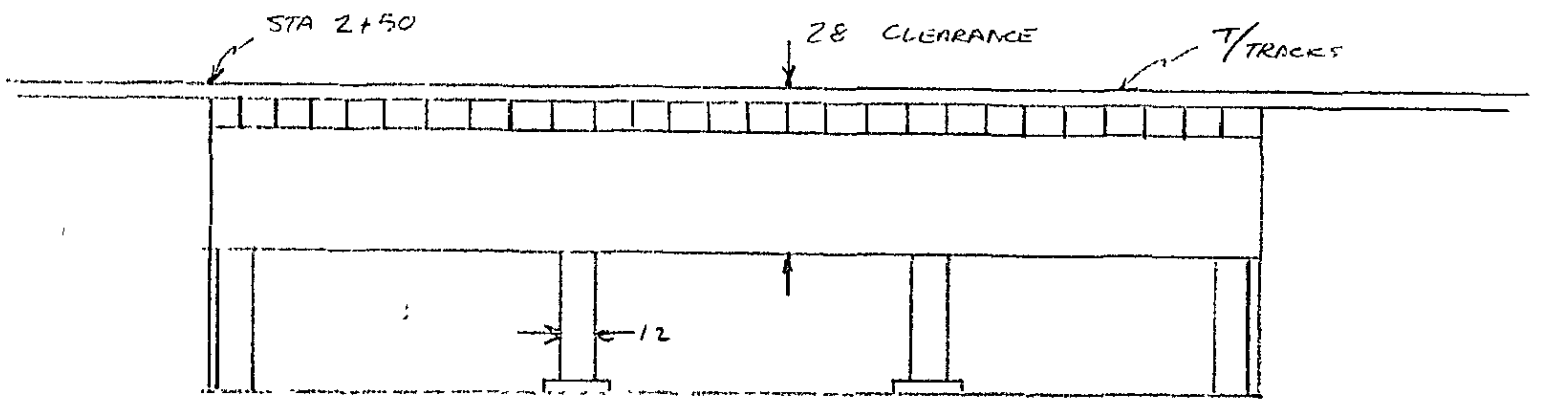
$$AREA = 2.8(68 + 2(1.2)) + \tfrac{1}{2}\,10(0.8) + 12\,\tfrac{1}{2}(0.8 + 2.5) + 11.5\,\tfrac{1}{2}(3.0 + 4.4) + 10.5\,\tfrac{1}{2}(4.4 + 3.5)$$
$$+ 15\,\tfrac{1}{2}(3.0 + 1.5) + \tfrac{1}{2}(1.5)\,6 \left(\begin{matrix}330.20\\ -9.87\end{matrix}\right) = 330\ \square'$$

✓ 7/4/70

$K_e = 0.4$ with wingwall

$x_{KOR} \doteq 1.5$

Community: KOCHVILLE	Structure: C&O RR BRIDGE NORTH OF I-75 - I-675 INTERCHANGE	Type: WOOD PILE - STEEL I-BEAM	Station: 172+96



PROFILE SKETCH
(Looking Downstream)

Length: 66.0 FT.	Width: 9.0 FT	Skew:	Water Elevation: 582.8
No. of Piers: 1	Width of Piers: 2.5 FT.	Shape of Piers: BARREL	

Notes:

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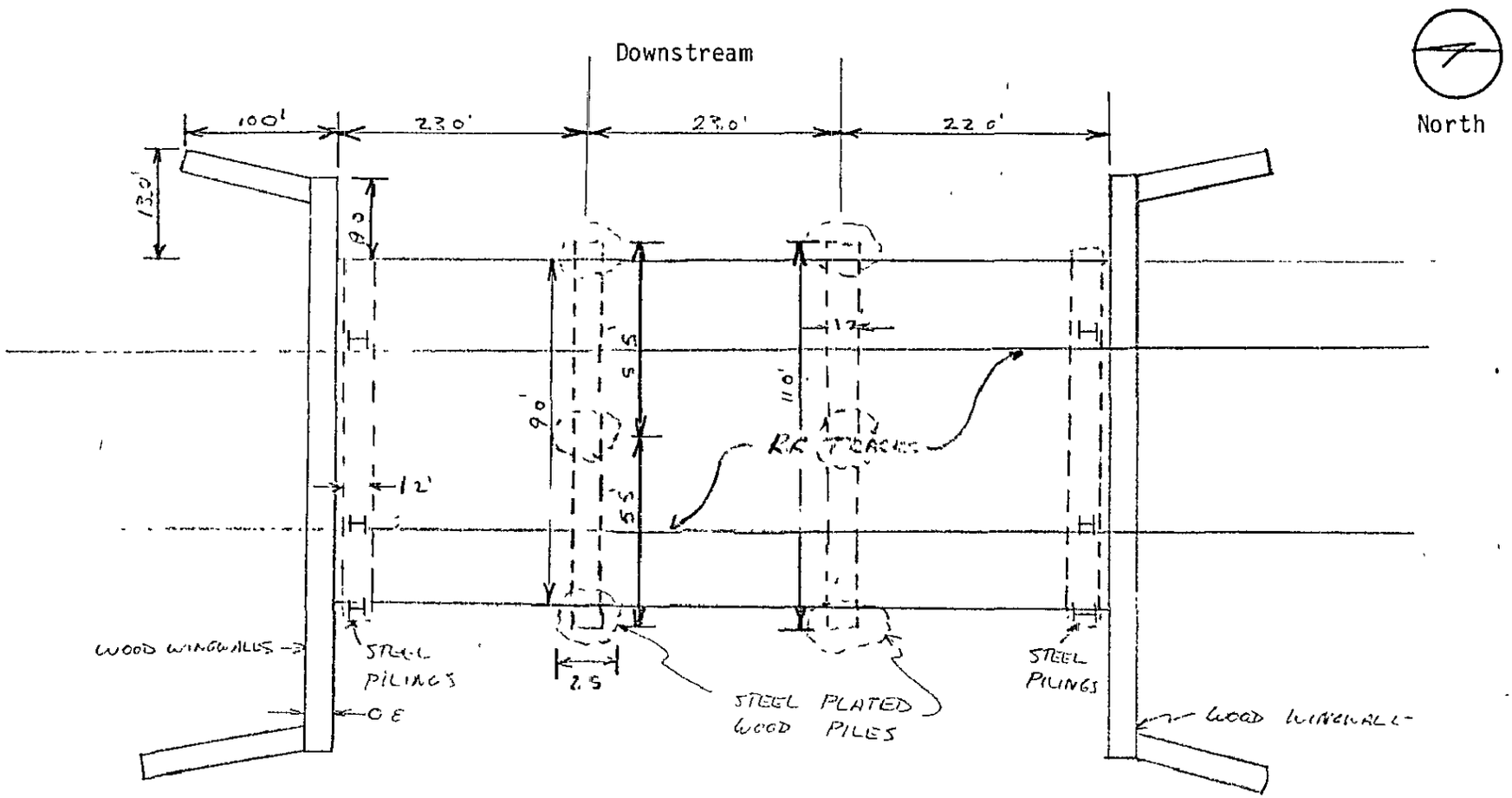
LANSING, MICHIGAN 48933
(517) 485-0555

By: C.S.C.

Date: 6/14/79

Sheet 1 of 2

Community: ROCHELLE	Structure: C&O R.R. BRIDGE NORTH OF I-75 - I-675 INTER	Type: WOOD PILE STEEL I BEAM	Station: 172+90



Upstream

PLAN VIEW SKETCH

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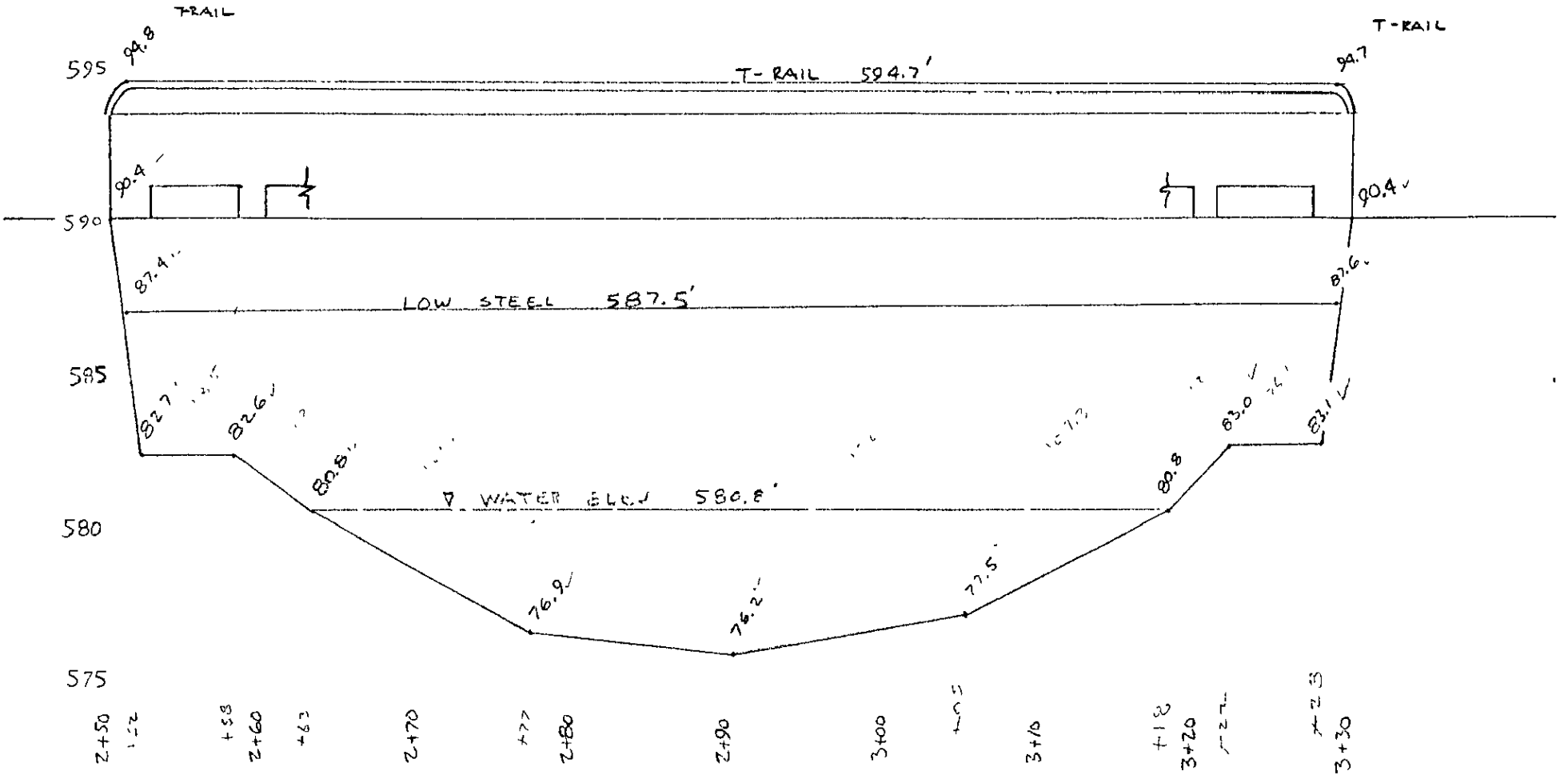
By: C.S.C.

Date: 6/14/79

Sheet 2 of 2

KOCHVILLE TWP KOCHVILLE DRAIN 174+65 NORTHBOUND I-675 BRIDGE TO I-75

44' LONG - SEE NOTES FOR SKEW



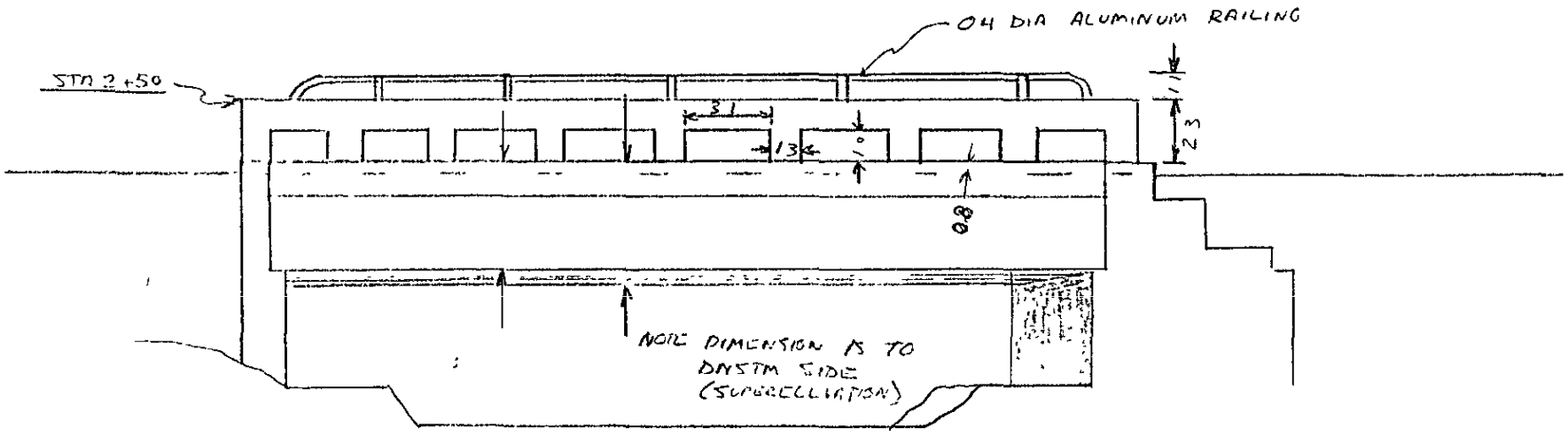
$$AREA = 6.5\tfrac{1}{2}(4.8 + 4.9) + 5\tfrac{1}{2}(4.9 + 6.7) + 14\tfrac{1}{2}(6.7 + 10.6) + 13\tfrac{1}{2}(10.6 + 11.3) + 15\tfrac{1}{2}(11.3 + 10.0) + 13\tfrac{1}{2}(10.0 + 6.7)$$
$$+ 4\tfrac{1}{2}(6.7 + 4.5) + 6.5\tfrac{1}{2}(4.5 + 4.6)$$
$$= 644.25 \ FT^2$$

+43 ✓

✓ 3

4/4/80

Community: Lochville	Structure: NORTHBD I-675 BRIDGE TO I-75	Type: STEEL I-BEAM & CONC.	Station: 174+65



PROFILE SKETCH
(Looking Downstream)

Length: 800	Width: 440 FT.	Skew: 44 FT x 10 FT	Water Elevation: 58078
No. of Piers: --	Width of Piers:	Shape of Piers: -	

Notes:

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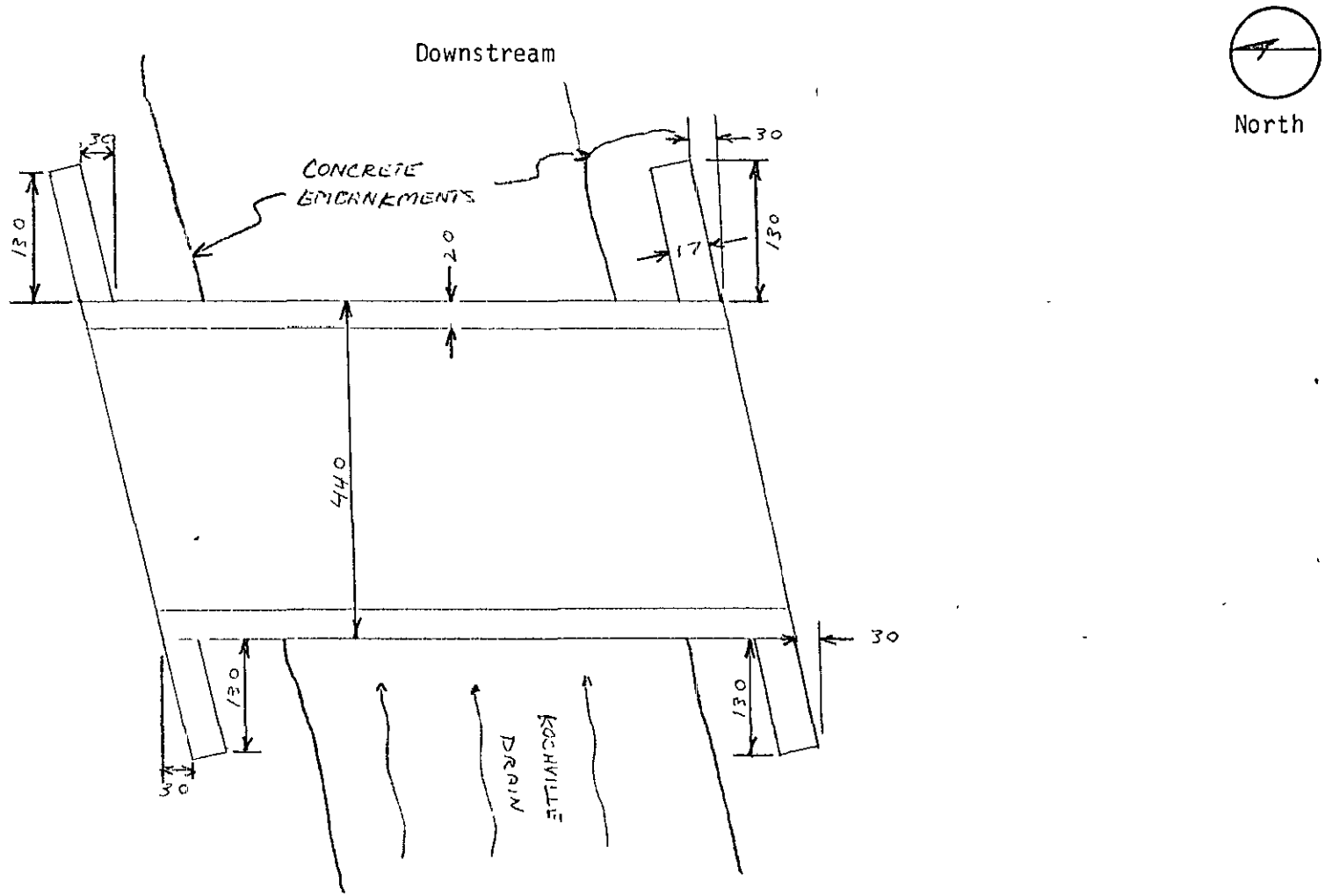
By: ASC

Date: 6/14/79

Sheet 1 of 2

Community: Rochville	Structure: Northbound I-675 Bridge to I-75	Type: Steel T-Beam & Conc	Station: 174+65



PLAN VIEW SKETCH

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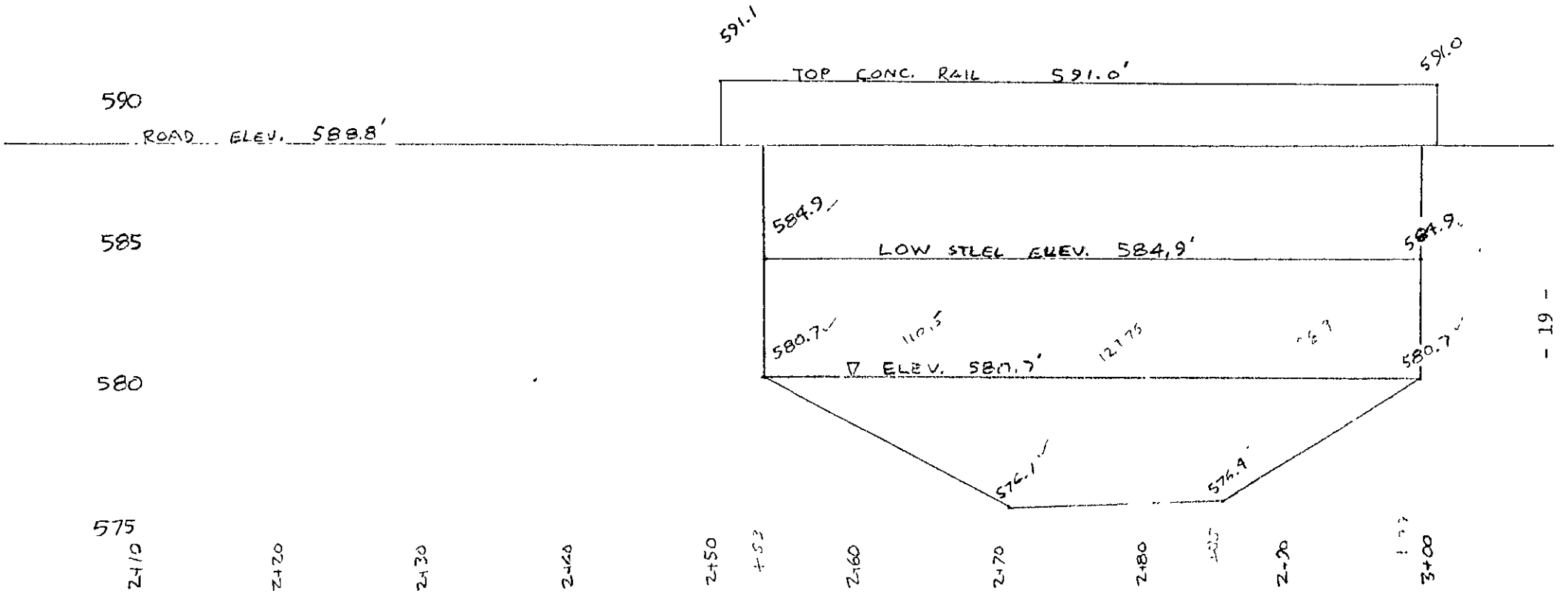
By: JSC

Date: 6/14/79

Sheet 2 of 2

KOCHVILLE TWP KOCHVILLE DRAIN · 177+65 I-75 SOUTHBOUND BRIDGE

61' LONG – SEE NOTES FOR SKEW

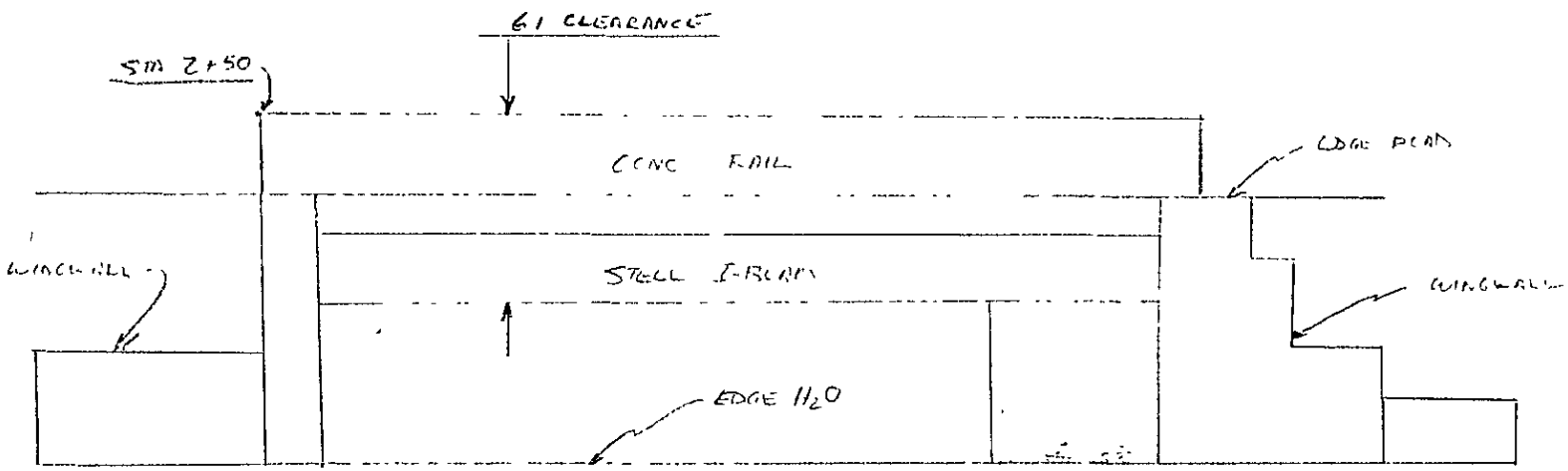


AREA = $46(4.2) + \frac{1}{2}(17)(4.6) + 15\ \frac{1}{2}(4.6 + 4.3) + \frac{1}{2}(14)(4.3)$

$= 329.15\ FT^2$

✓ JB
4/9/80

Community: ROCKVILLE TWP	Structure: I-75 SOUTHBOUND BRIDGE	Type: STEEL I-BEAM & CONC.	Station: SM 177+15



PROFILE SKETCH
(Looking Downstream)

Length: 56 C	Width: 61 C	Skew: 29 FT x 61 FT	Water Elevation: 586.66
No. of Piers: –	Width of Piers:	Shape of Piers: –	

Notes:

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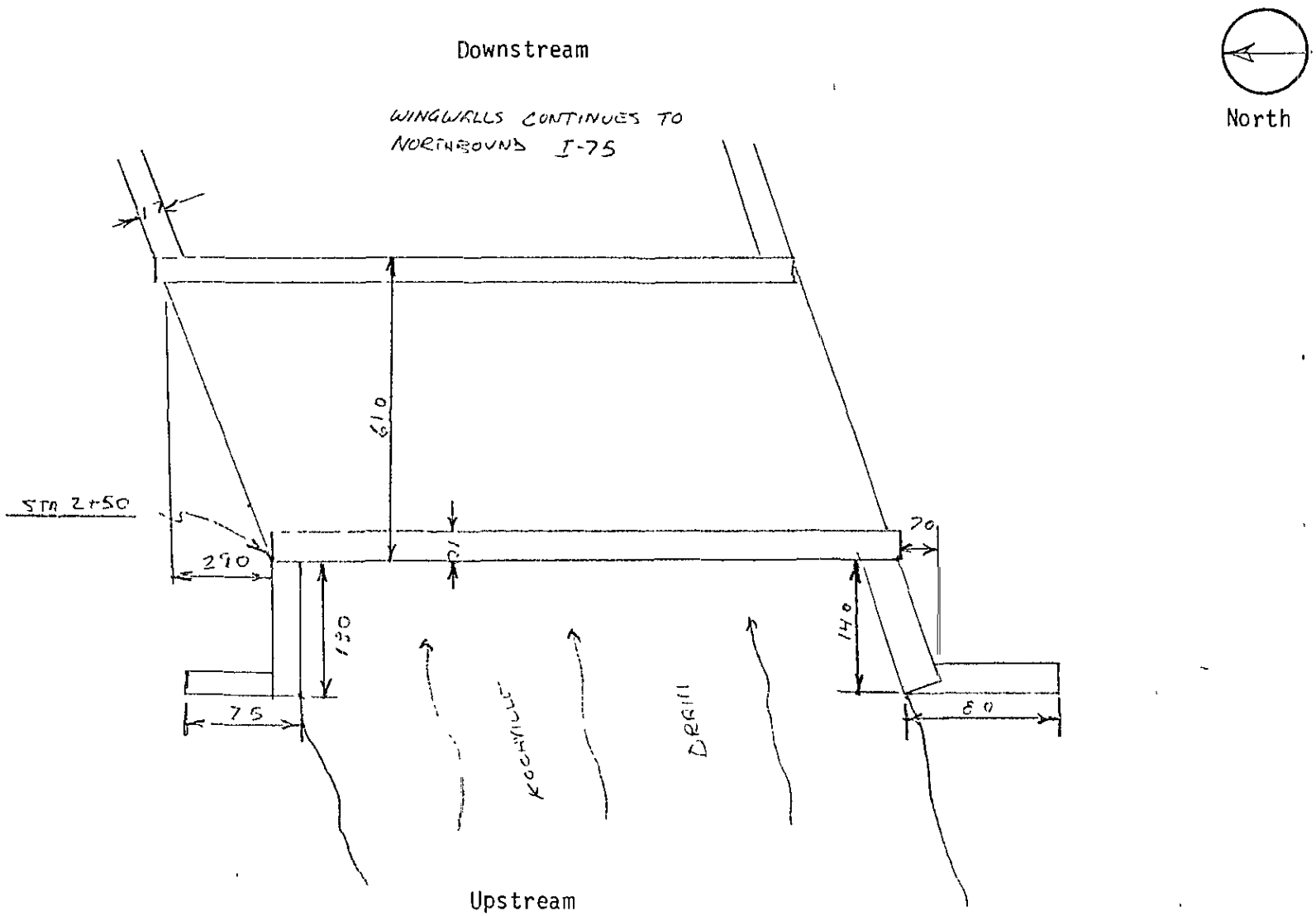
By: C.S.C.

Date: 6/14/79

Sheet 1 of 2

Community: KOCHVILLE TWP	Structure: SOUTHBD I 75 BRIDGE	Type: STEEL I-BEAM & CONCRETE	Station: STA 177+15



PLAN VIEW SKETCH

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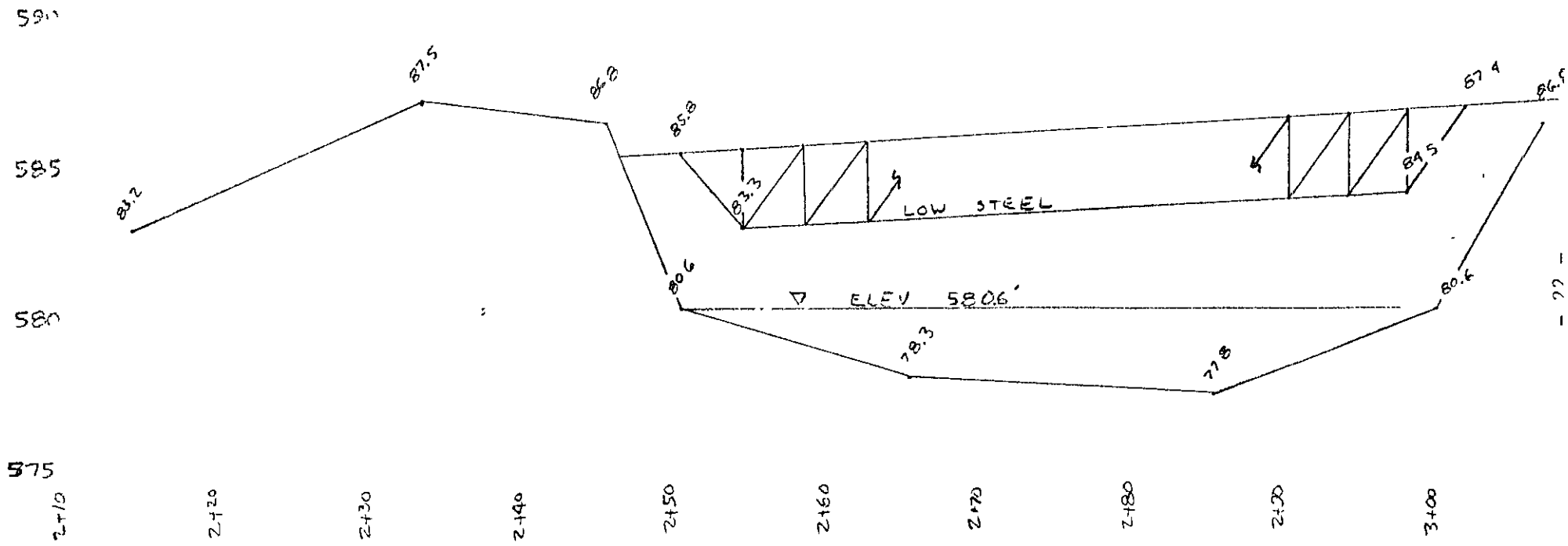
By: J.S.C.

Date: 6/14/79

Sheet 2 of 2

KOCHVILLE TWP KOCHVILLE DRAIN • 22.3 + 40 FARM BRIDGE EAST OF HSE # 1220 KOCHVILLE RD

Assume the steel frame no effect to the flow



$$\text{AREA} = \left(\tfrac{1}{2}\,15(2.3) + 20\,\tfrac{1}{2}\left[2.3 + 2.8\right] + \tfrac{1}{2}\,15(2.8)\right) + \tfrac{1}{2}(2.7 + 3.9)\,56$$

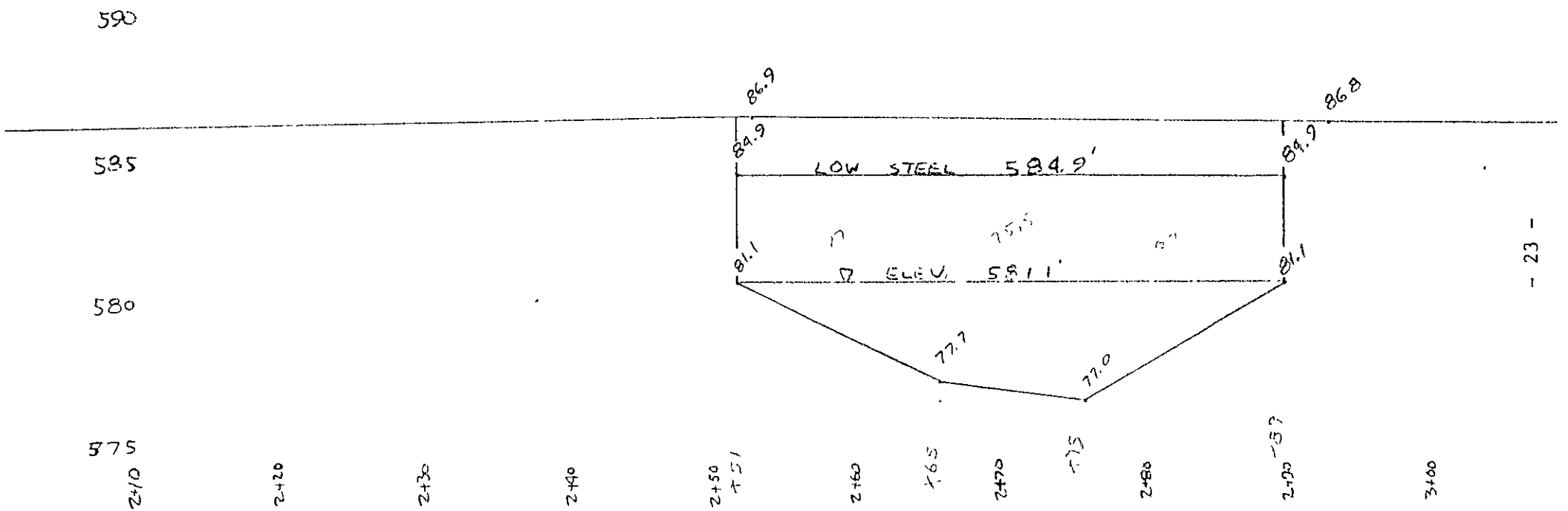
$$= 89.25 + 184.80$$

$$= 274.05 \text{ FT}^2$$

AWB

KOCHVILLE TWP KOCHVILLE DRAIN · 226+65 (227+15) KOCHVILLE RD BRIDGE

26' LONG – SEE NOTES FOR SKEW

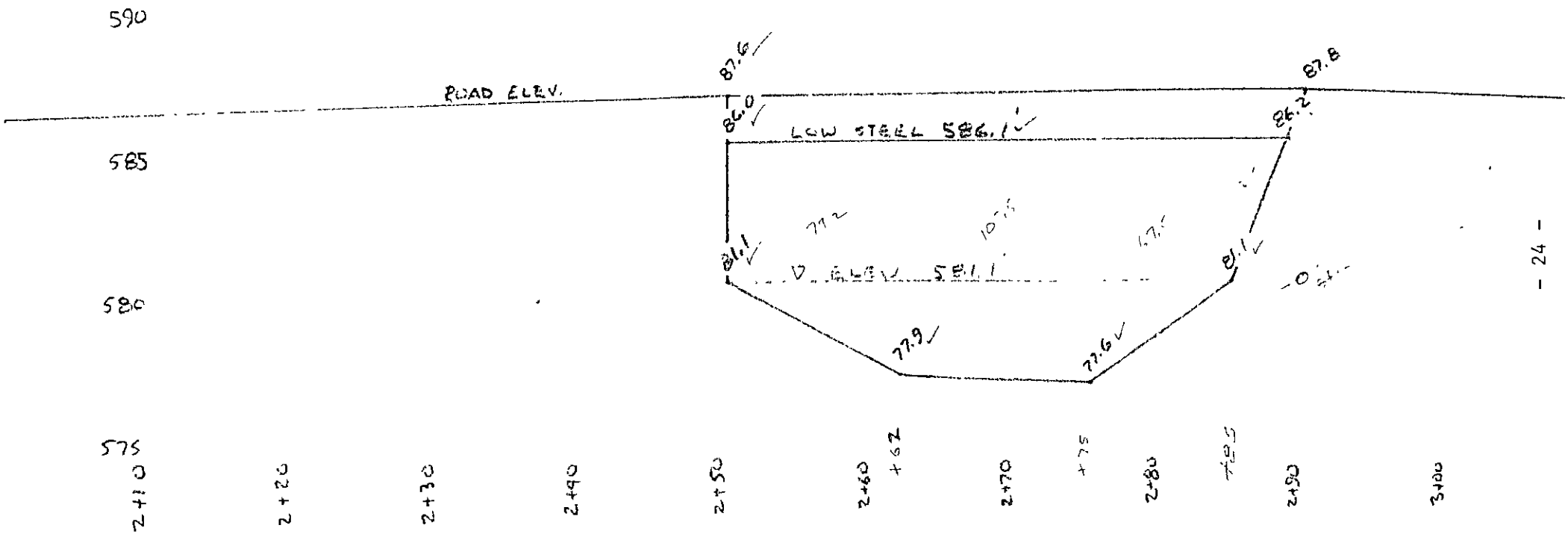


$$\text{AREA} = 38(3.8) + \tfrac{1}{2}\,14(3.4) + 10\cdot\tfrac{1}{2}(3.4+4.1) + \tfrac{1}{2}\,14(4.1) = 234.40 \text{ FT}^2$$

4/4/80

KOCHVILLE TWP KOCHVILLE DRAIN • 231+40 FARM BRIDGE SOUTH OF HSE # 1220 KOCHVILLE RD.

16' LONG



AREA = $12\frac{1}{2}[5.0 + 8.2] + 13\frac{1}{2}[8.2 + 8.5] + 10\frac{1}{2}[8.5 + 5.0] + 4\frac{1}{2} \cdot 5.0$

$= 265.25$ FT^2

265.25 ✓

JB 4/4/90

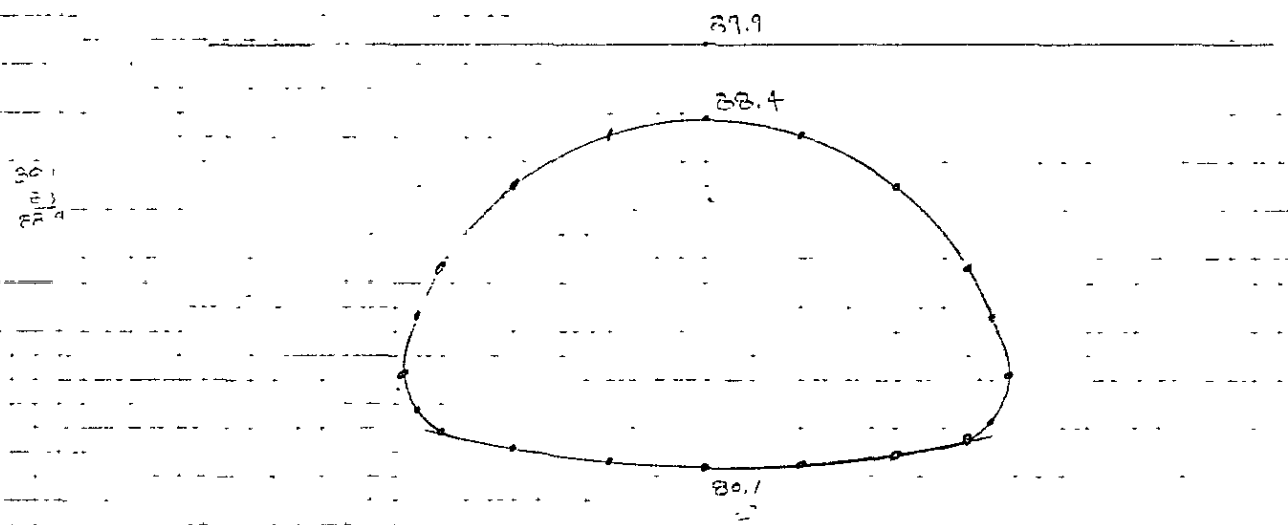
#8554
4/2/80
JB

SOUTH BRANCH KOCHVILLE DRAIN

3+00 STRUCTURAL PLATE PIPE ARCH

13.0' x 8.3' =

12'10" x 8'4" x 36' LONG



82.1 84.3 85.3 87.0 88.9 88.4 88.0 87.0 85.3 84.3 82.1

192.5 194 194.5 196 198 200 202 204 205.5 206 206.5

82.1 81.4 80.9 80.6 80.3 80.1 80.2 80.5 80.8 81.4 82.1

A = 85 □'

Ke = .5

n = .0311

How do we know Min is not projected?

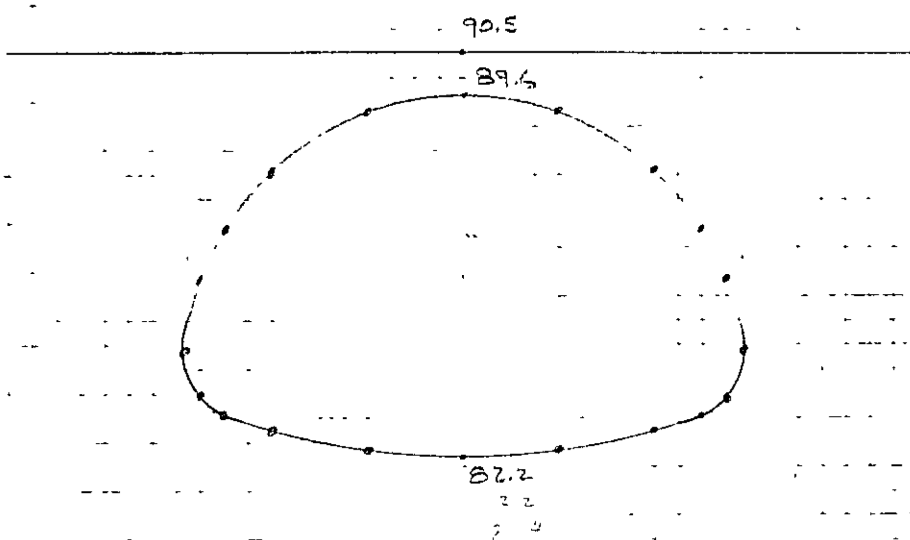
#855
1/12/88
3

SOUTH BRANCH KOCHVILLE DRAIN

28+50 STRUCTURE ... PIPE ARCH

12' X 7.2' =

11'7" X 7'5" X 30' LONG



84.7 85.3 86.9 88.1 89.3 89.6 89.3 88.1 86.9 85.3 84.4

194 194+5 195 196 198 200 202 204 205 205.5 205.9

84.9 83.5 82.7 82.7 82.4 82.2 82.4 82.7 83.0 83.5 84.9

$A = 67 \square'$

$Ke = .5$

$n = .0314$

$l = 30$

$R = 2.17$

$$Kf = \frac{29.1 \times (0.0314)^2 \times 30}{2.17^{1.33}} = 0.3$$

$XKOR = 1.8$

8554
4/1/80
3

SOUTH BRANCH KOCHVILLE DRAIN

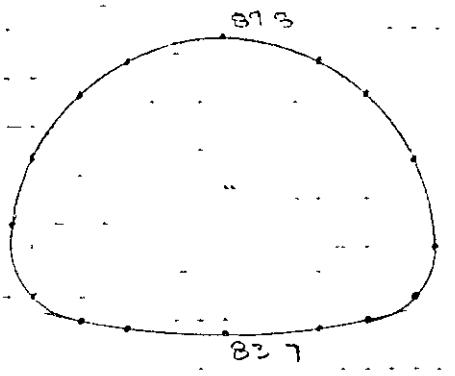
36+00 STRUCTURAL PLATE PIPE ARCH

8.5 X 6.1 =

8'10" X 6'1" X 20' LONG

℄ ROAD
-92.2

91.2



85 86.3 88 89 89.8 89.9 88 86 85.5

195 196 197 198 200 202 203 204 204.5

85 84.5 84.0 83.9 83.7 83.8 84 84.5 85.5

A = 43.8'

Ke = .5

n = .0319

l = 18

R = 1.77

$$K_p = \frac{29.1 \times (0.0319)^2 \times 18}{1.77^{1.33}} = 0.25$$

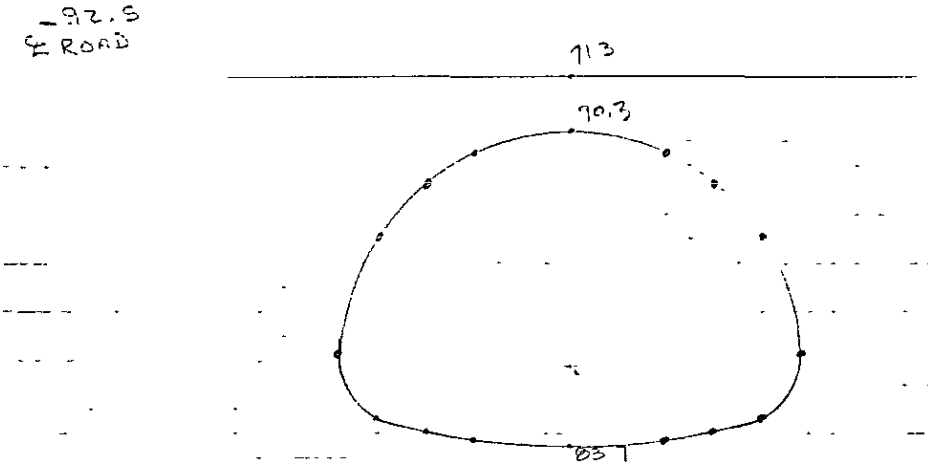
XKOR = 1.75

8554
4/1/20
JB

SOUTH BRANCH KOCHVILLE DRAIN

45+00 CULVERT - STRUCTURAL PLATE PIPE ARCH

11' x 6.5' = 9'-9" x 6'7" x (~~18' LONG~~ 20.3' LONG)
52 □'



85.6 88.1 89.1 89.8 90.3 89.8 89.1 88.1 85.6

195 196 197 198 200 202 203 204 205

85.6 84.3 84.0 83.9 83.7 83.9 84.0 84.3 85.6

A = 52 □'

Ke = .5

n = .0317

l = 18

R = 1.93

$K_f = \frac{29.1 \times (0.0317)^2 \times 18}{1.93^{1.33}} = 0.22$

XKOR = 1.72

AQ SOUTH BRANCH KOCHVILLE DRAIN

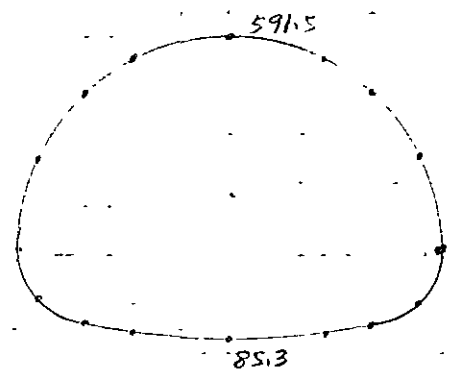
50+50 STRUCTURAL PLATE PIPE ARCH

#8554
4/1/80
B

8.5' X 6.2' =

6'10" X 6'1" (21' LONG ~~18' LONG~~ ?) 94.4

ROAD 94.37



87.2 89.1 90.5 91.1 91.5 91.1 90.5 89.1 87.2

195.5 197 197 198 200 202 203 204 204.5

87.2 86.2 85.7 85.5 85.3 85.5 85.7 86.2 87.2

A = 43 □'

Ke = .50

n = .0319

l = 18.0

R = 1.77

$$k_f = \frac{29.1 \times (0.0319)^2 \times 18}{1.77^{1.33}} = 0.25$$

XFOR = 1.75

#8554
4/1/80
B

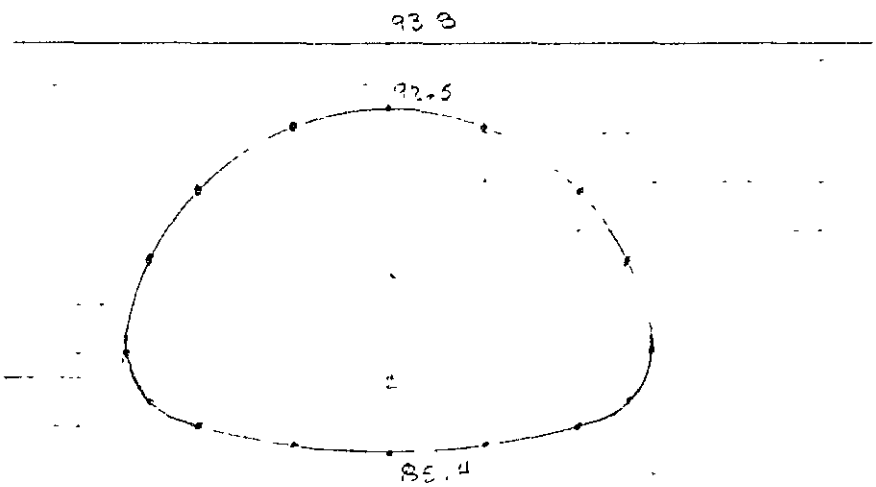
SOUTH BRANCH KOCHVILLE DRAIN

52+50 STRUCTURAL PLATE PIPE ARCH

? x 7.0' =

10'11" x 7'1" (~~18' LONG~~ ? 22' LONG)

93.1
? parts



87.5	87.4	90.8	92.1	92.5	92.1	90.8	87.4	87.5
1[illegible]	175	196	198	200	202	20[illegible]	205	205.5
87.5	86.5	86.0	85.6	85.4	85.4	86.0	86.5	87.5

$A = 61\ \square'$

$K_e = .5$

$n = .0316$

$l = 18$

$R = 2.07$

$$K_f = \frac{29.1 \times (0.0316)^2 \times 18}{2.07^{1.03}} = 0.20$$

$XKOR = 1.70$

#8554
4/1/80
B

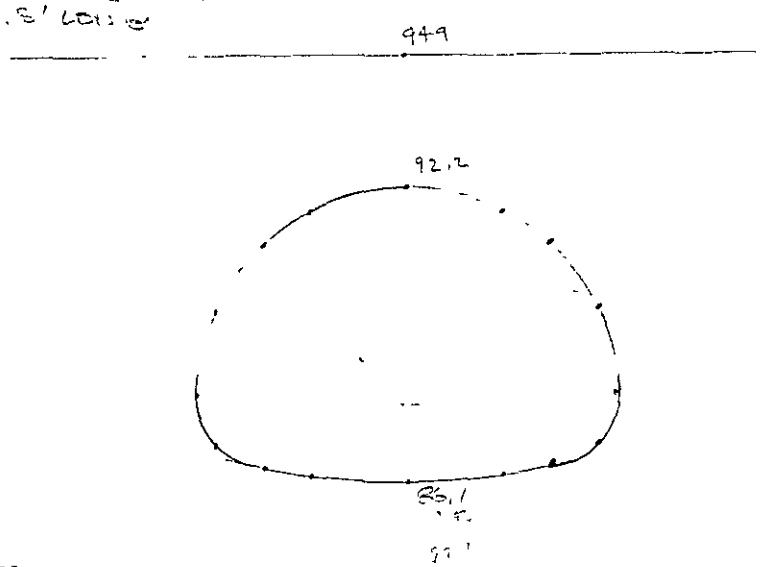
SOUTH BRANCH KOCHVILLE DRAIN

56+50 STRUCTURAL PLATE PIPE ARCH

8 5' x 6.5' =

8'10" x 6'1" (~~18'~~ LONG ?, 20.8' LONG)

℄ ROAD
94.7



87.8 87.7 91.0 91.7 92.2 91.7 91.0 89.7 87.9

195 196 197 198 200 202 203 204 204.5

87.9 87.7 87.4 87.3 86.1 86.3 86.1 86.9 87.9

A = 43 □'

Ke = .5

n = .0320

R = 1.77

l = 18

$K_p = \frac{29.1 \times (0.032)^2 \times 18}{1.77^{1.33}} = 0.25$

x KPR = 1.75

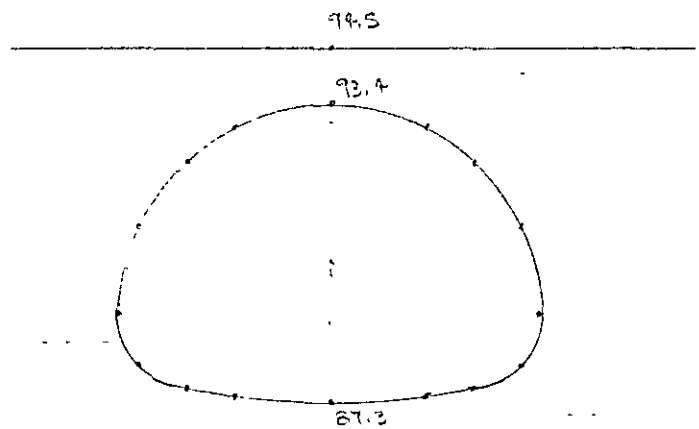
SOUTH BRANCH KOCHVILLE DRAIN

58+50 STRUCTURAL PLATE PIPE ARCH

8.5' x 6.1' =

8'10" x 6'1" x (~~2'~~ 20.5' LONG ?)

℄ ROAD
95.1



89.1 90.9 92.2 92.9 93.4 92.9 92.2 90.9 89.1

195 196 197 198 200 202 203 204 204.5

89.1 88 87.6 87.4 87.3 87.4 87.6 88 89.1

A = 43 □'

Ke = .5

h = .032

ℓ = 18

R = 1.77

X FOR R = 1.75

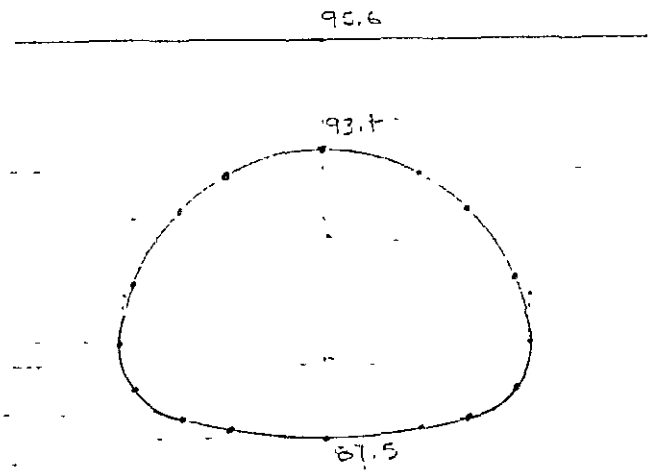
#8554
4/1/80
B

SOUTH BRANCH KOCHVILLE DRAIN

60+00 STRUCTURAL PLATE PIPE ARCH

8.5' x 5.9' =
8'7" x 5'-11" (~~18'~~ 20.5' LONG ?)

℄ ROAD
95.2



89.9 90.7 92 92.9 93.4 92.9 92.2 90.7 89.4

195 196 197 198 200 202 203 204 204.5

89.1 88.5 87.7 87.7 87.5 87.7 87.9 88.5 89.1

A = 40 □'

K_e = 5

h = .032

R = 1.71

l = 18

$$K_f = \frac{29.1 \times (0.032)^2 \times 18}{1.71^{1.33}} = 0.26$$

XKOR = 1.76

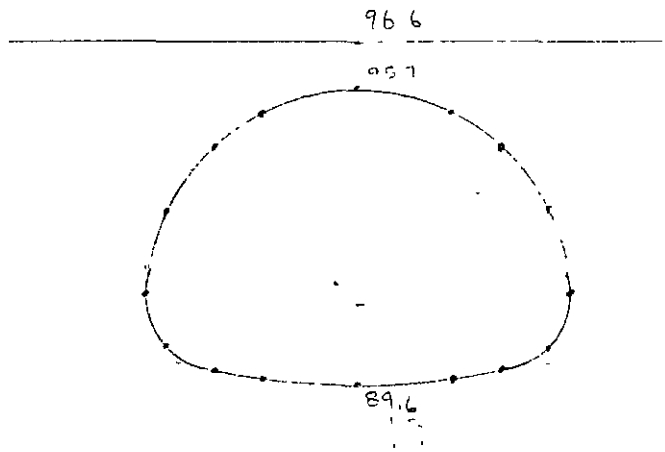
#8554
4/1/80
B

SOUTH BRANCH KOCHVILLE DRAIN

68+50 STRUCTURAL PLATE PIPE ARCH

9.0' x 6.1' x 21' LONG

8'10" x 6'1" x 21' LONG



91.4	93.2	94.5	95.1	95.7	95.1	94.5	93.2	91.4	
195.5	196	197	198	200	198	197	204	209.5	
91.4	90.3	89.9	89.7	89.6	89.7	89.9	90.3	91.4	

$A = +3\ \square'$

$K_e = .9$

$n = .032$

$l = 21$

$R = 1.77$

$$K_f = \frac{29.1 \times (0.032)^2 \times 21}{1.77^{1.33}} = 0.29$$

$\times K_o l = 2.19$

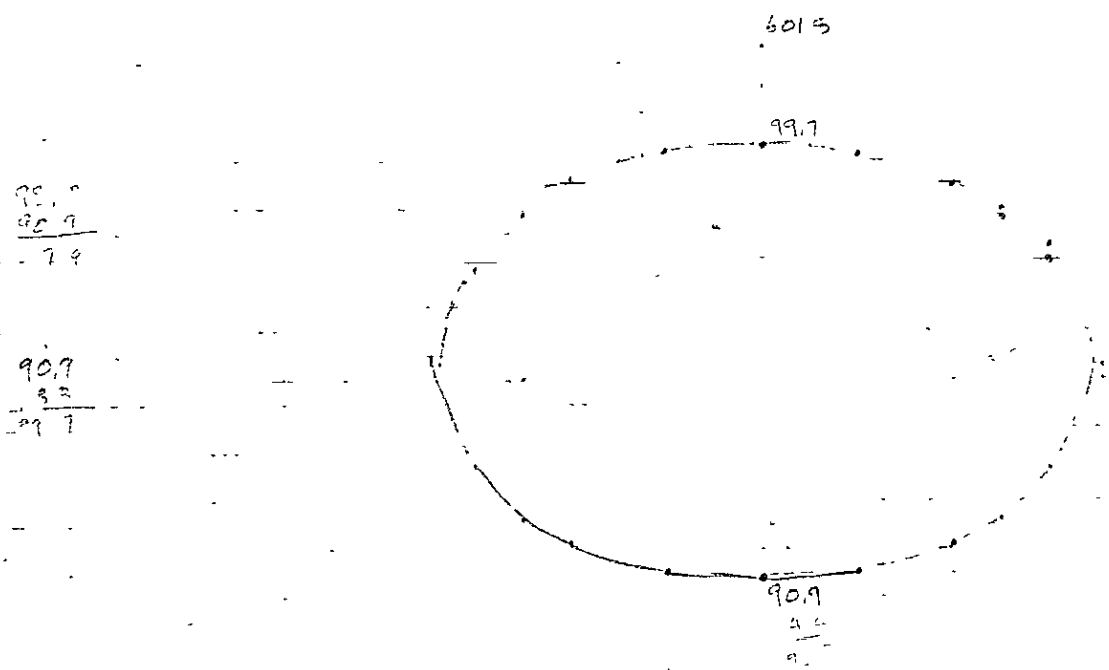
SOUTH BRANCH KOCHVILLE DRAIN

74+75 ELLIPTICAL CONCRETE PIPE

#8554
4/1/20
JB

14.0' x 8.0' = 168" x 96" =

186" x 106" =
13'10" x 8'10" x 86' LONG



95.3	97.1	98.5	99.0	99.6	99.7	99.6	99.0	98.5	97.4	95.3
[illegible]	190	195	198	[illegible]	200	[illegible]	[illegible]	205	206	207
95.3	93.2	92.1	91.6	91.0	90.9	91.0	91.6	92.1	93.2	95.3

A = 99.0'

K = .2

n = .012

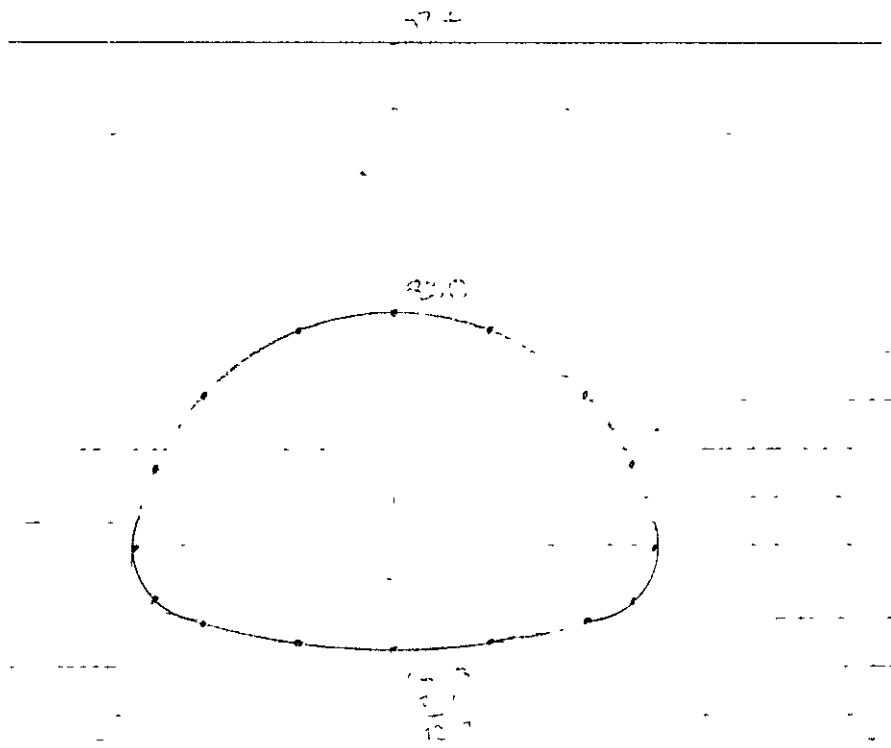
#8554
4/3/90
B

KOCHVILLE DRAIN

316+70 [illegible] ROAD CULVERT

[illegible] TURAL PLATE PIPE ARCH

7' x 11' =
10'11" x 7'1" x 75' [illegible] (SEE NOTES FOR SKEWS)



78.9	80.6	82.2	83.4	83.8	83.4	82.2	80.6	78.9
194.5	195	196	198	[illegible]	[illegible]	[illegible]	205	205.5
78.9	[illegible]	77.4	[illegible]	75.8	[illegible]	[illegible]	[illegible]	78.9

$A = 61\ \square'$

$K_e = .7$

$r = .0316$

$R = 2.07$

$$K_f = \frac{29.1 \times (0.0316)^2 \times 75}{2.07^{1.33}} = 0.83$$

$\times KOR = 1 + 0.9 + 0.83 = 2.73$

KOCHVILLE RD KOCHVILLE DRAIN 248+90 MICHIGAN ROAD CULVERT (ON SKEW WITH ROAD)

CORR. STEEL PIPE 12'-4" × 7'-9"* X NO LENGTH GIVEN

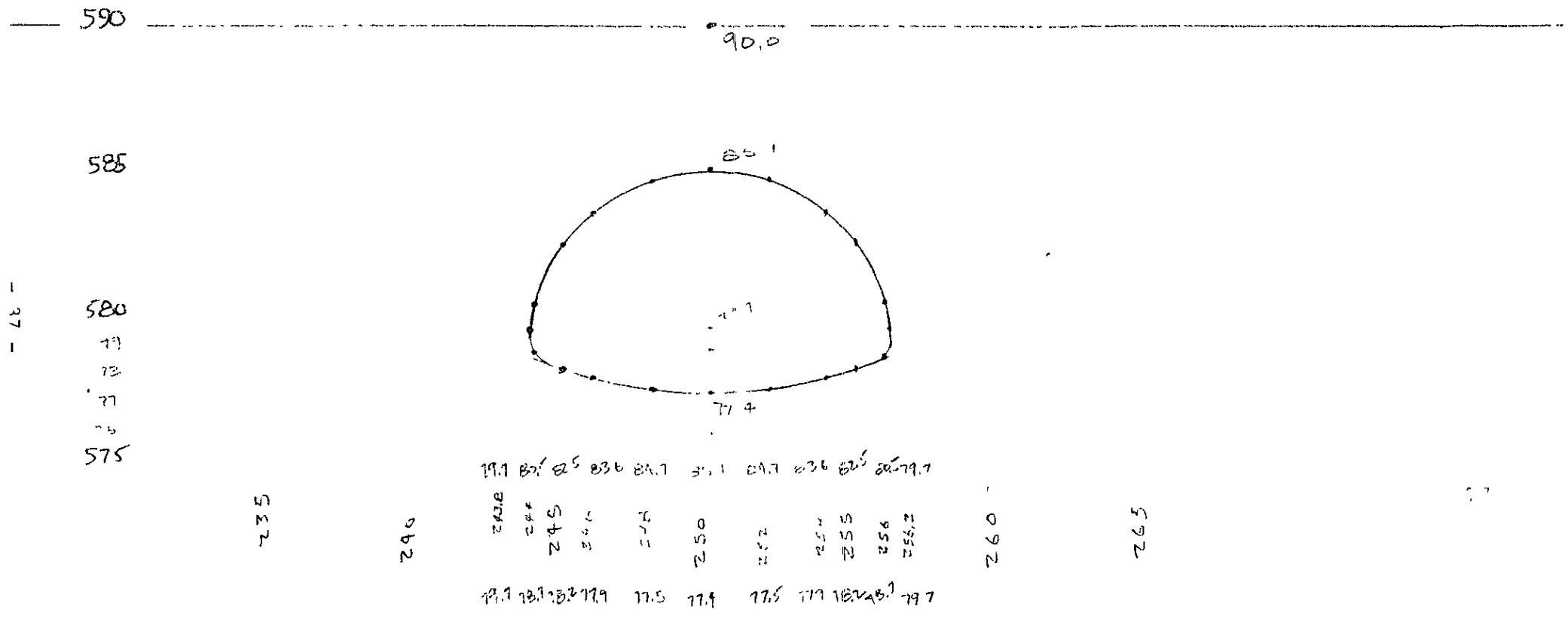
12.33' 7.8'

AREA = 74 FT²

40'

Ke = .5 — hand up what?

n = .0313



R = 2.26'

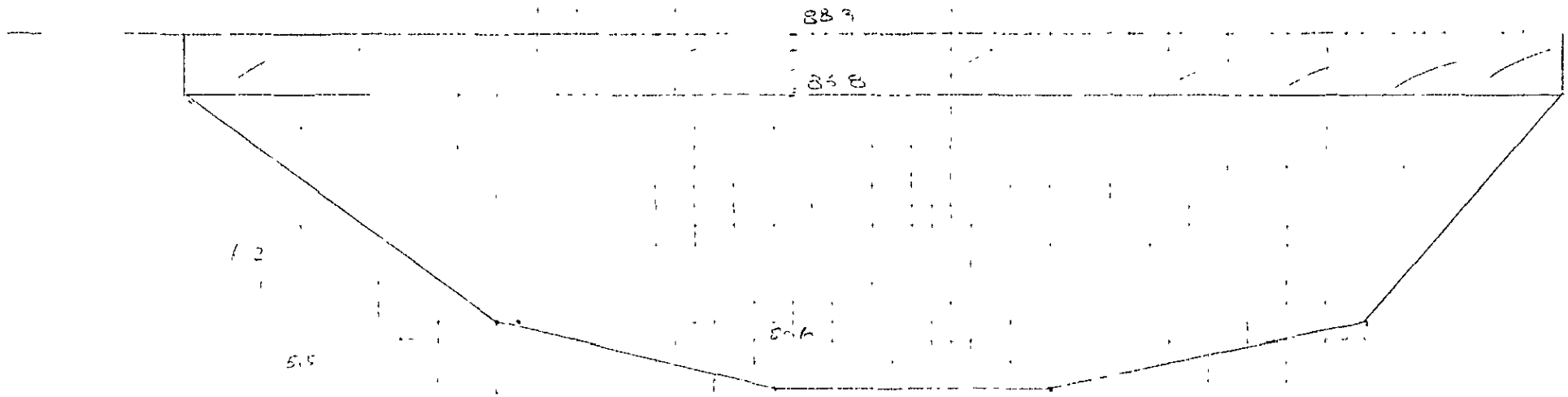
$$= \frac{9.1 \times (0.0313)^2 \times 40}{2.26^{1.33}} = 0.39$$

XKOR = 1 + 0.5 + 0.39 = 1.89

AISI HANDBOOK

4/3/80

AWB



86.8		86.8		86.8		86.8		86.8		86.8
250	53.2	258	53.2	265	52.5	272	53.2	280	14.5	285
86.8		81.0		79.3		79.3		81.0		86.8

8' LONG

A = 196.6' □'

W.P. = 75

R = 2.62

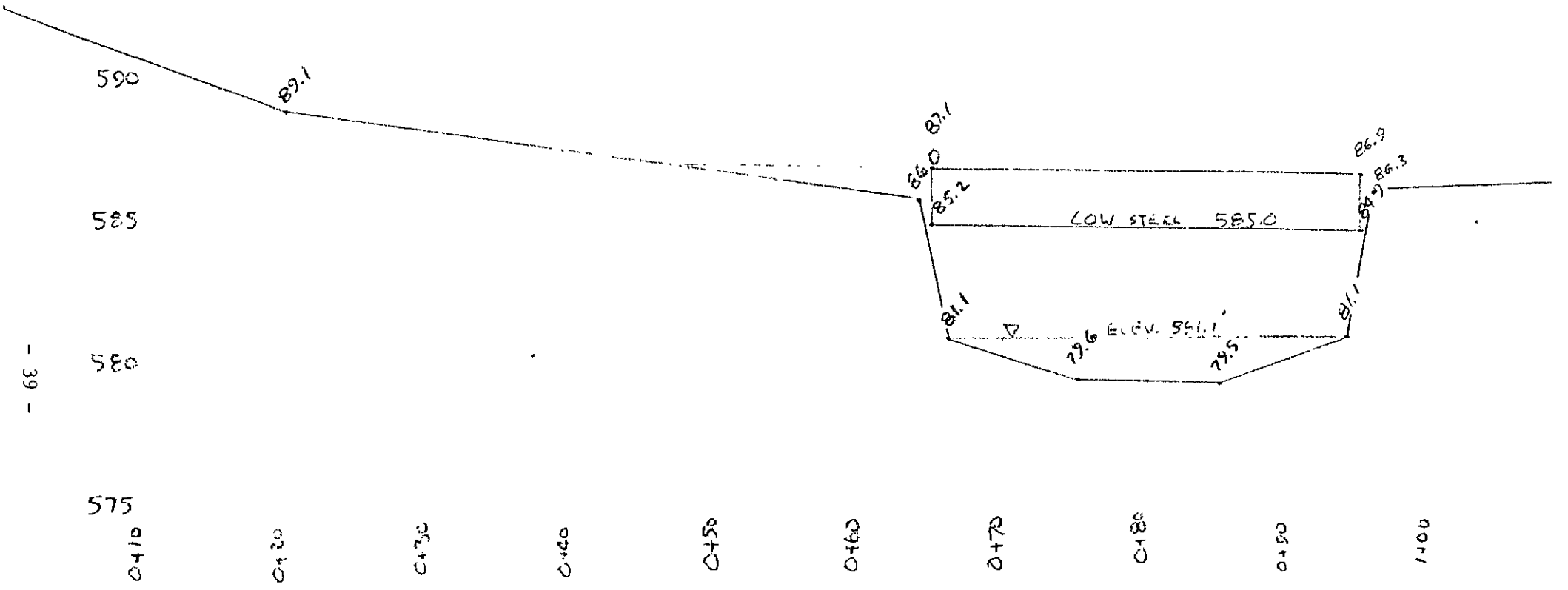
$$\frac{29.1 \times (0.035)^2 \times 8}{2.62^{1.33}} = 0.08$$

XKOR = 1 + 0.5 + 0.08 = 1.58

256+15

KOCHVILLE TWP KOCHVILLE DRAIN " 265+60 DISMANTLED FARM BRIDGE D/S OF MOBILE HOME PARK

OPEN TRUSS - ASSUMED TO MAKE NO DIFFERENCE

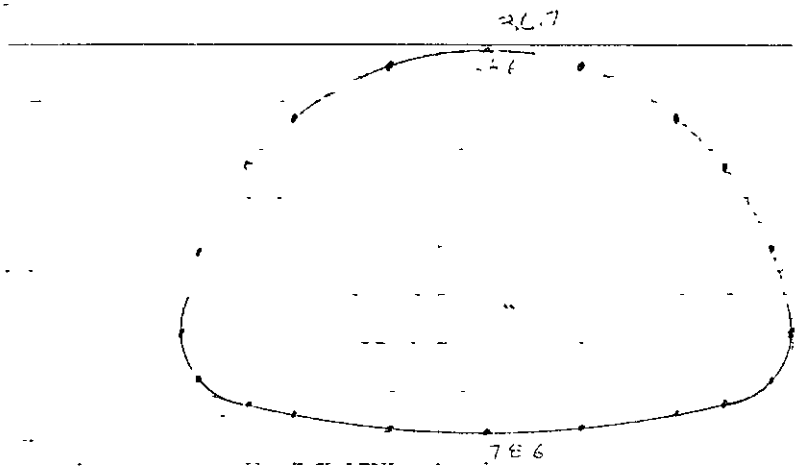


$$\text{AREA} = 2\cdot\tfrac{1}{2}(4.1) + 9\,\tfrac{1}{2}[4.1+5.4] + 10\cdot\tfrac{1}{2}[5.4+5.5] + 9\cdot\tfrac{1}{2}[5.5+3.8] + \tfrac{1}{2}\cdot 2(3.8)$$

$$= 147.00 \text{ FT}^2$$

Kochville Drain

[illegible] Pipe Arch



80.1	82.1	81	85.1	86.2	86.6	86.7	85.1	84.1	82.1	80.7
243	5[illegible]	245	246	218	25[illegible]	252	254	255	256	75[illegible]
80.7	79.7	77.2	79.0	78.7	78.6	78.7	79.0	77.3	79.7	80.7

A = 81 □'

Ke = .5

h = .0311

R = 2.38

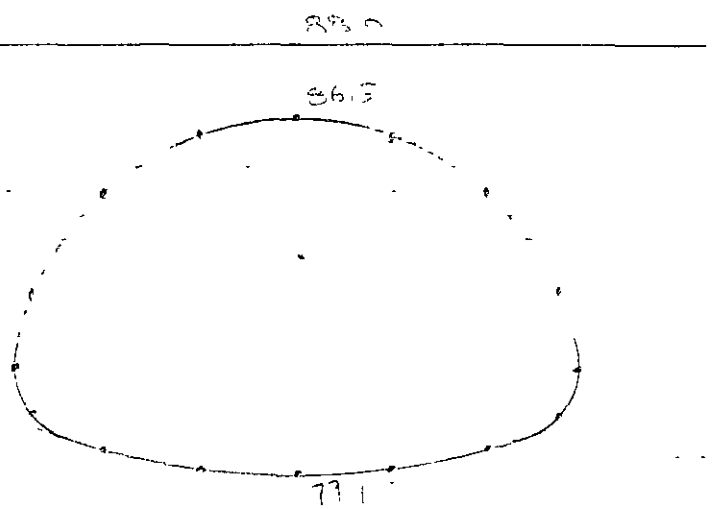
$$\frac{29.1 \times (0.0311)^2 \times 30}{2.38^{1.33}} = 0.27$$

XKOR = 1.77

293+50

11.8' x 7.1' =

11'-10" x 7'-1"



313	29	850	861	[illegible]	861	850	829	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	252	254	[illegible]	[illegible]
313	30.1	797	793	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

A = 47 ft²

Kc = .5

n = .0315

R = 2.17

$$\frac{29.1 \times (0.0315)^2 \times 20}{2.17^{1.33}} = 0.21$$

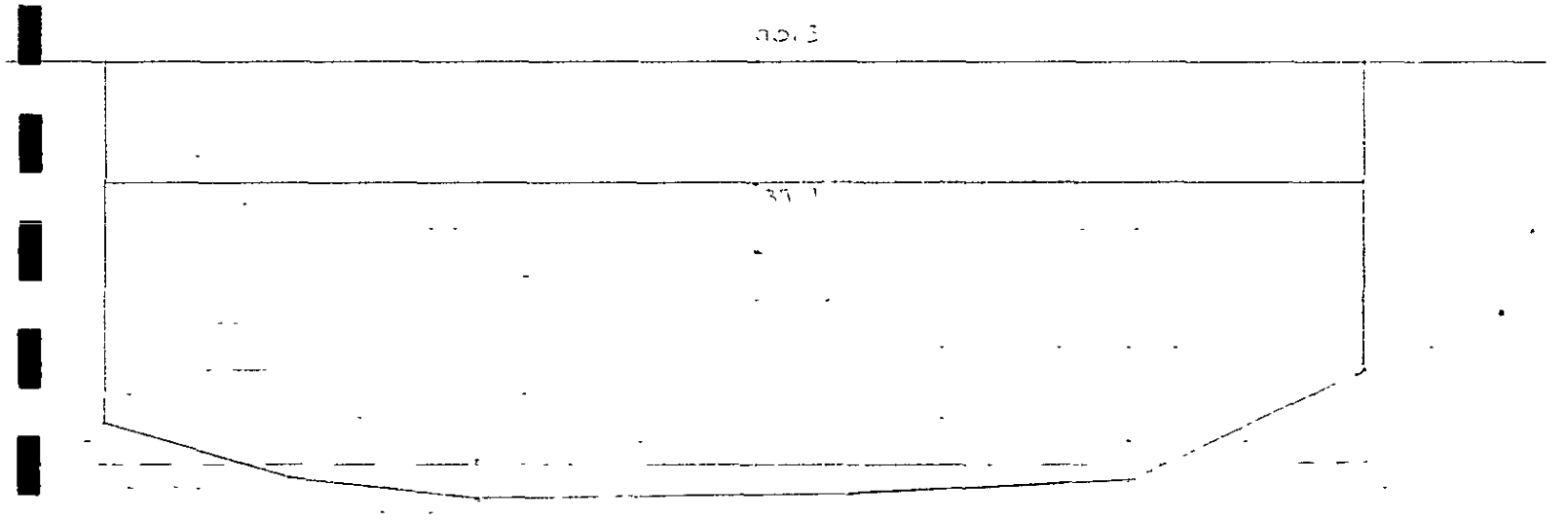
XKOR = 1.71

KOCHVILLE DRAIN

291+90 [illegible]

29' LONG

SEE NOTES FOR SKEW



87.9	87.9	87.9		87.9	87.9	87.9
222	226	22.0	52.4	233	[illegible]	249
81.9	81.7	81.[illegible]		81.4	81.7	84.0

$A = 1638 \square'$

$W.P. = 63.6$

$R = 2.58$

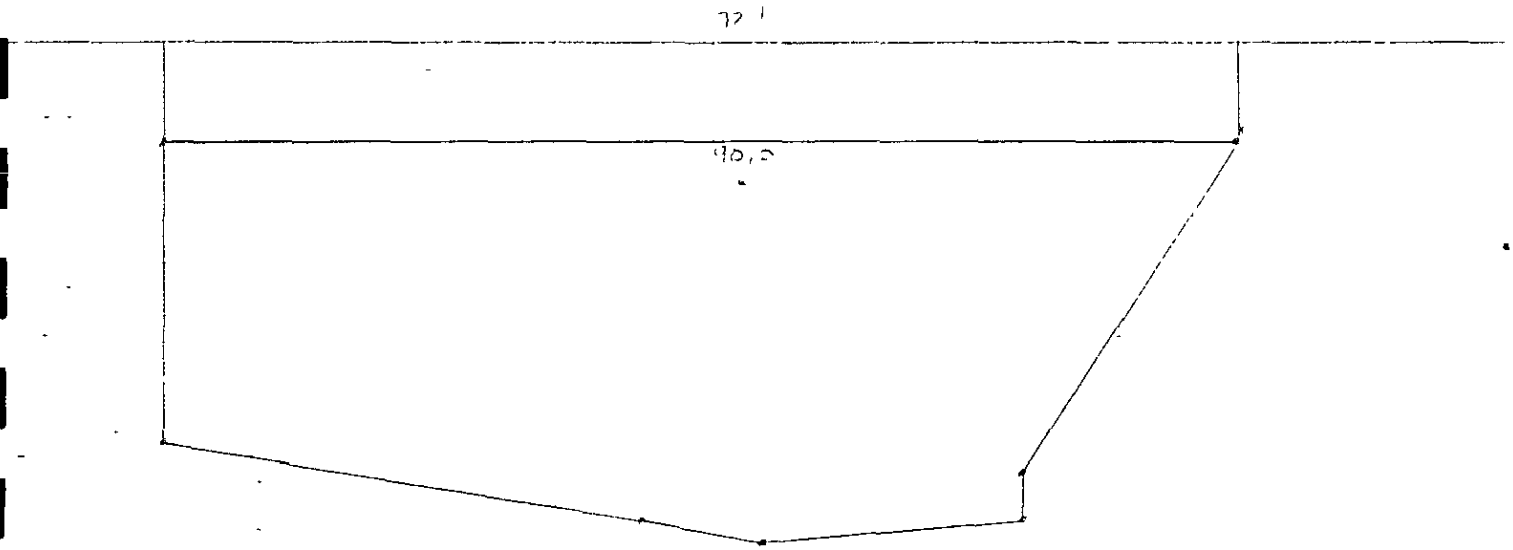
$$Ke = \frac{29.1 \times (0.02)^2 \times 29}{2.58^{1.33}} = 0.10$$

$XKOR = 1 + 0.5 - 0.1 = 1.60$

Kochwick Drain

[illegible] David Road [illegible]

22.5' [illegible] See Notes for Skew



[illegible]	90.0	90.0	90.0	90.0
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
83.3	[illegible]	[illegible]	[illegible]	90.0

$q = 148.2$ □'

w.p = 69.9

R = 2.12

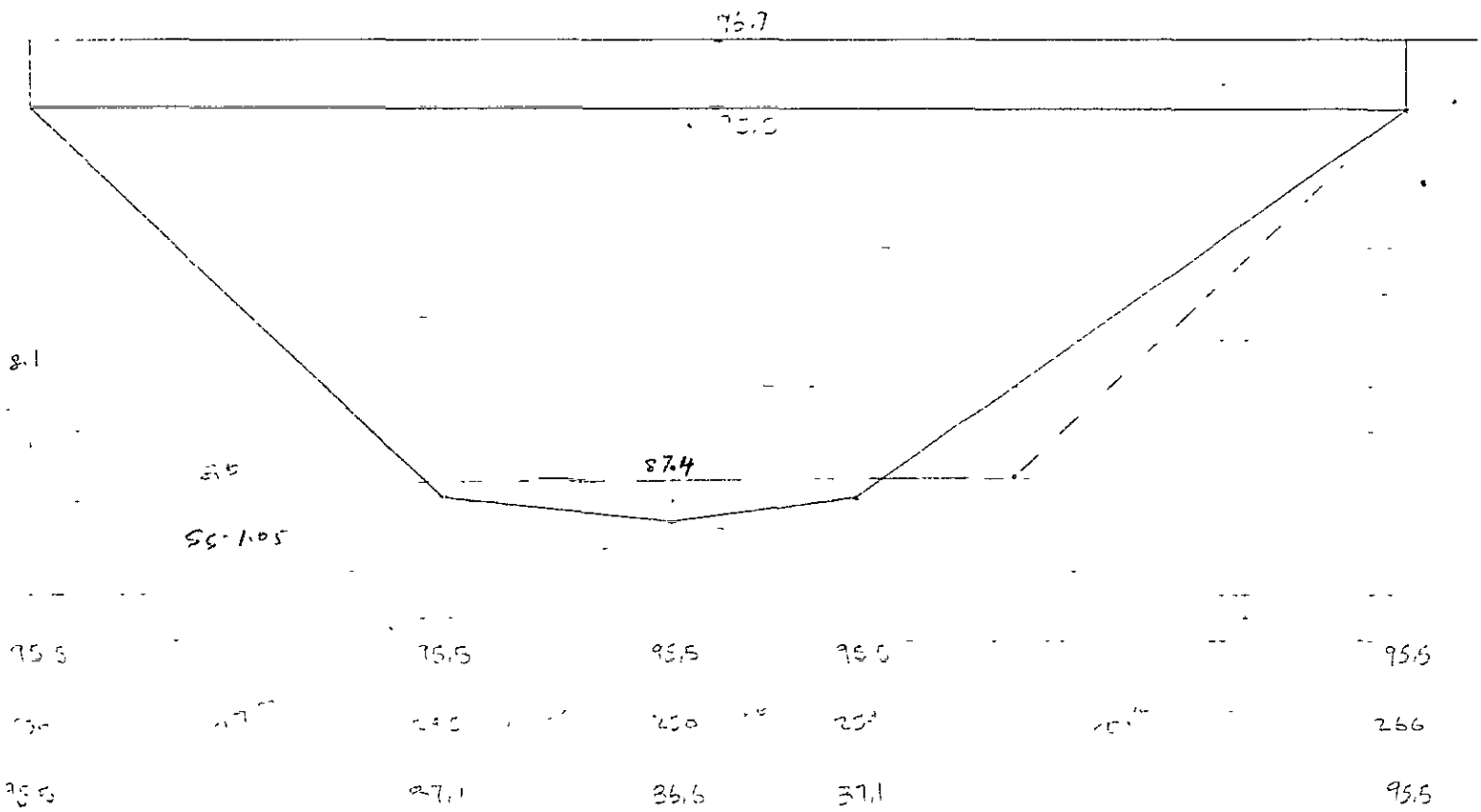
$$\frac{29.1 \times (0.025)^2 \times 22.5}{2.12^{1.33}} = 0.15$$

$XKOR = 1 + 0.15 + 0.15 = 1.65$

KOCHVILLE DRAIN

FARM LANE BRIDGE

16' LONG AVERAGE



A = 166.05 □'

W.P. = 65.5

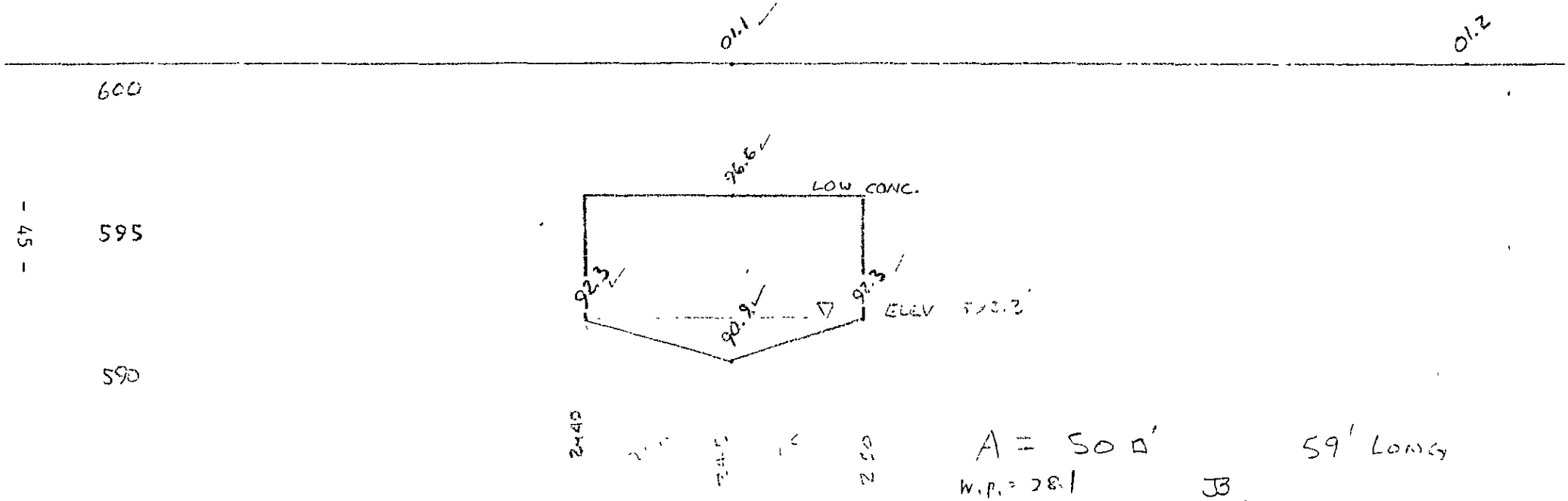
R = 2.52

$$\frac{29.1 \times (0.0035)^2 \times 16}{2.52^{1.33}} = 0.17$$

XKOR = 1 + 0.5 − 0.17 = 1.67

KOCHVILLE TWP KOCHVILLE DRAIN 347+90 M-84 CULVERT (BAY ROAD)

length: 59'



A = 50 □' 59' LONG

W.P. = 28.1

R = 1.78

JB
4/3/80

~~AREA = 4.3(49) + ½(1.4)(10) + ½(1.4)(9) = 96.0 FT²~~

$$\frac{29.1 \times (0.015)^2 \times 59}{1.78^{1.33}} = 0.50$$

XKNR = 1 + 0.5 + 0.5 = 2.0

AWB

1) COUNTY: SAGINAW

2) STUDY NAME: KOCHVILLE TWP

3) WATERCOURSE: KOCHVILLE DRAIN U/S OF CONFLUENCE W/ S. BRANCH KOCHVILLE DRAIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

Rochville Drain u/s of confluence pt. with South Branch

(4) Summary printout

MOORE BUSINESS FORMS, INC 27

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**************************************************
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

KOCHVILLE DRAIN UPSTREAM

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
24640.000	0.0	0.0	0.0	576.80	215.00	585.12	0.0	585.22	5.53	2.49	86.37	91.40
24640.000	0.0	0.0	0.0	576.80	290.00	586.39	0.0	586.52	6.95	2.89	100.34	110.04
24640.000	0.0	0.0	0.0	576.80	320.00	586.90	0.0	587.04	7.40	3.02	105.95	117.61
24640.000	0.0	0.0	0.0	576.80	400.00	588.19	0.0	588.36	8.53	3.33	120.14	136.92
24641.000	75.00	589.40	583.80	576.80	215.00	585.56	0.0	585.65	4.83	2.36	91.25	97.88
24641.000	75.00	589.40	583.80	576.80	290.00	587.25	0.0	587.35	5.58	2.64	109.76	122.77
24641.000	75.00	589.40	583.80	576.80	320.00	587.96	0.0	588.07	5.75	2.72	117.61	133.46
24641.000	75.00	589.40	583.80	576.80	400.00	589.18	0.0	589.30	6.30	2.91	171.48	159.32
24890.000	100.00	0.0	0.0	577.40	215.00	585.62	0.0	585.70	4.08	2.23	96.36	106.40
24890.000	100.00	0.0	0.0	577.40	290.00	587.31	0.0	587.41	4.53	2.47	117.35	136.31
24890.000	100.00	0.0	0.0	577.40	320.00	588.03	0.0	588.13	4.60	2.53	126.24	149.18
24890.000	100.00	0.0	0.0	577.40	400.00	589.24	0.0	589.36	5.45	2.83	141.35	171.28
24891.000	40.00	590.00	585.10	577.40	215.00	585.79	0.0	585.87	3.85	2.18	93.56	109.51
24891.000	40.00	590.00	585.10	577.40	290.00	587.68	0.0	587.76	4.12	2.38	121.91	142.90
24891.000	40.00	590.00	585.10	577.40	320.00	588.49	0.0	588.58	4.13	2.42	131.97	157.53
24891.000	40.00	590.00	585.10	577.40	400.00	589.96	0.0	590.07	4.71	2.66	150.23	184.37
24940.000	100.00	0.0	0.0	578.40	215.00	585.88	0.0	585.90	0.72	1.09	197.25	253.21
24940.000	100.00	0.0	0.0	578.40	290.00	587.78	0.0	587.80	0.53	1.07	272.19	399.55
24940.000	100.00	0.0	0.0	578.40	320.00	588.59	0.0	588.61	0.44	1.04	323.44	483.10
24940.000	100.00	0.0	0.0	578.40	400.00	590.09	0.0	590.11	0.33	1.00	458.16	694.57
25565.000	575.00	0.0	0.0	578.70	215.00	585.93	0.0	585.96	1.69	1.29	166.50	165.63
25565.000	575.00	0.0	0.0	578.70	290.00	587.82	0.0	587.84	1.02	1.16	290.98	287.55
25565.000	575.00	0.0	0.0	578.70	320.00	588.63	0.0	588.64	0.57	0.94	428.69	425.00
25565.000	575.00	0.0	0.0	578.70	400.00	590.12	0.0	590.12	0.25	0.71	681.94	797.90
25615.000	100.00	0.0	0.0	579.30	215.00	585.95	0.0	585.98	1.34	1.34	160.90	158.29
25615.000	100.00	0.0	0.0	579.30	290.00	587.83	0.0	587.85	1.25	1.28	235.46	259.40
25615.000	100.00	0.0	0.0	579.30	320.00	588.63	0.0	588.65	0.91	1.16	312.45	334.56
25615.000	100.00	0.0	0.0	579.30	400.00	590.12	0.0	590.13	0.44	0.92	533.92	599.70
25616.000	1.00	587.60	588.80	579.30	215.00	585.95	0.0	585.98	1.34	1.34	161.05	158.49
25616.000	1.00	587.60	588.80	579.30	290.00	587.82	0.0	587.86	4.76	1.51	199.58	132.94
25616.000	1.00	587.60	588.80	579.30	320.00	588.63	0.0	588.65	5.41	1.29	259.66	137.61
25616.000	1.00	587.60	588.80	579.30	400.00	590.12	0.0	590.13	1.36	0.76	481.13	342.37

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	IOK*S	VCH	AREA	.01K
25617.000	8.00	587.60	588.80	579.30	215.00	585.95	0.0	585.98	1.84	1.33	161.10	158.56
25617.000	8.00	587.60	588.80	579.30	290.00	587.83	0.0	587.86	4.76	1.51	199.46	132.91
25617.000	8.00	587.60	588.80	579.30	320.00	588.63	0.0	588.66	5.41	1.29	259.66	137.61
25617.000	8.00	587.60	588.80	579.30	400.00	590.12	0.0	590.13	1.36	0.76	481.17	342.42
25618.000	1.00	0.0	0.0	579.30	215.00	585.95	0.0	585.98	1.84	1.33	161.10	158.56
25618.000	1.00	0.0	0.0	579.30	290.00	587.84	0.0	587.86	1.25	1.27	235.95	259.85
25618.000	1.00	0.0	0.0	579.30	320.00	588.64	0.0	588.66	0.91	1.16	312.45	334.56
25618.000	1.00	0.0	0.0	579.30	400.00	590.12	0.0	590.13	0.45	0.92	533.75	599.43
25665.000	80.00	0.0	0.0	578.50	215.00	585.98	0.0	585.99	0.93	0.99	253.03	223.04
25665.000	80.00	0.0	0.0	578.50	290.00	587.87	0.0	587.87	0.30	0.68	497.01	529.67
25665.000	80.00	0.0	0.0	578.50	320.00	588.66	0.0	588.67	0.19	0.59	625.41	729.06
25665.000	80.00	0.0	0.0	578.50	400.00	590.13	0.0	590.14	0.12	0.51	859.55	1176.98
26510.000	300.00	0.0	0.0	579.60	215.00	586.01	0.0	586.03	1.29	1.11	194.97	189.59
26510.000	300.00	0.0	0.0	579.60	290.00	587.88	0.0	587.89	0.59	0.93	345.21	378.36
26510.000	300.00	0.0	0.0	579.60	320.00	588.67	0.0	588.68	0.41	0.85	425.42	497.45
26510.000	300.00	0.0	0.0	579.60	400.00	590.13	0.0	590.14	0.26	0.76	593.82	781.30
26560.000	550.00	0.0	0.0	579.50	215.00	586.08	0.0	586.10	1.38	1.20	178.61	183.23
26560.000	550.00	0.0	0.0	579.50	290.00	587.91	0.0	587.93	0.74	1.06	313.05	336.67
26560.000	550.00	0.0	0.0	579.50	320.00	588.69	0.0	588.70	0.53	0.96	383.58	440.69
26560.000	550.00	0.0	0.0	579.50	400.00	590.15	0.0	590.16	0.35	0.87	515.06	676.96
26561.000	16.00	0.0	0.0	579.50	215.00	586.08	0.0	586.11	3.62	1.20	178.83	113.00
26561.000	16.00	0.0	0.0	579.50	290.00	587.91	0.0	587.93	1.96	1.06	313.99	207.28
26561.000	16.00	0.0	0.0	579.50	320.00	588.69	0.0	588.70	1.40	0.96	384.28	270.42
26561.000	16.00	0.0	0.0	579.50	400.00	590.15	0.0	590.16	0.93	0.88	515.53	413.73
26610.000	50.00	0.0	0.0	579.40	215.00	586.10	0.0	586.12	2.88	1.08	201.59	126.66
26610.000	50.00	0.0	0.0	579.40	290.00	587.92	0.0	587.94	1.54	0.94	341.10	233.96
26610.000	50.00	0.0	0.0	579.40	320.00	588.70	0.0	588.71	1.13	0.86	410.93	301.45
26610.000	50.00	0.0	0.0	579.40	400.00	590.15	0.0	590.16	0.78	0.81	542.00	452.80
26790.000	180.00	0.0	0.0	579.20	215.00	586.14	0.0	586.16	1.40	0.94	245.70	182.03
26790.000	180.00	0.0	0.0	579.20	290.00	587.94	0.0	587.95	0.74	0.83	385.30	336.90
26790.000	180.00	0.0	0.0	579.20	320.00	588.72	0.0	588.72	0.57	0.79	461.37	425.12
26790.000	180.00	0.0	0.0	579.20	400.00	590.17	0.0	590.17	0.41	0.76	606.12	622.50
26840.000	50.00	0.0	0.0	578.60	215.00	586.12	0.0	586.20	3.91	2.24	113.24	108.74
26840.000	50.00	0.0	0.0	578.60	290.00	587.94	0.0	587.97	1.61	1.62	297.24	228.79
26840.000	50.00	0.0	0.0	578.60	320.00	588.71	0.0	588.73	1.06	1.39	381.91	310.89
26840.000	50.00	0.0	0.0	578.60	400.00	590.17	0.0	590.18	0.64	1.19	541.33	500.91
26841.000	30.00	586.70	586.60	578.60	215.00	586.13	0.0	586.23	8.26	2.63	97.96	74.81
26841.000	30.00	586.70	586.60	578.60	290.00	587.98	0.0	588.01	1.57	1.61	300.30	231.50
26841.000	30.00	586.70	586.60	578.60	320.00	588.76	0.0	588.78	1.02	1.37	387.37	316.65
26841.000	30.00	586.70	586.60	578.60	400.00	590.22	0.0	590.24	0.62	1.17	548.08	509.88
26890.000	50.00	0.0	0.0	577.70	215.00	586.25	0.0	586.26	0.44	0.91	272.63	322.52
26890.000	50.00	0.0	0.0	577.70	290.00	588.00	0.0	588.01	0.23	0.80	497.55	604.68
26890.000	50.00	0.0	0.0	577.70	320.00	588.78	0.0	588.78	0.18	0.75	598.35	762.78
26890.000	50.00	0.0	0.0	577.70	400.00	590.23	0.0	590.24	0.13	0.73	787.74	1105.01

MOORE BUSINESS FORMS, INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
28300.000	1410.00	0.0	0.0	579.30	215.00	586.35	0.0	586.38	1.62	1.26	174.02	168.97
28300.000	1410.00	0.0	0.0	579.30	290.00	588.06	0.0	588.08	1.10	1.17	261.27	276.48
28300.000	1410.00	0.0	0.0	579.30	320.00	588.82	0.0	588.84	0.89	1.11	311.49	338.83
28300.000	1410.00	0.0	0.0	579.30	400.00	590.26	0.0	590.27	0.52	0.95	511.42	554.52
28350.000	50.00	0.0	0.0	579.10	215.00	586.32	0.0	586.44	10.19	2.68	80.08	67.34
28350.000	50.00	0.0	0.0	579.10	290.00	588.02	0.0	588.14	9.98	2.83	109.70	91.80
28350.000	50.00	0.0	0.0	579.10	320.00	588.80	0.0	588.88	6.55	2.43	160.82	125.02
28350.000	50.00	0.0	0.0	579.10	400.00	590.26	0.0	590.29	2.00	1.48	360.82	282.50
28351.000	20.00	588.00	586.50	579.10	215.00	586.34	0.0	586.46	10.11	2.68	80.33	67.61
28351.000	20.00	588.00	586.50	579.10	290.00	588.25	0.0	588.35	8.51	2.66	121.72	99.40
28351.000	20.00	588.00	586.50	579.10	320.00	588.86	0.0	588.94	6.17	2.37	166.38	128.78
28351.000	20.00	588.00	586.50	579.10	400.00	590.31	0.0	590.33	1.91	1.45	367.45	289.48
28400.000	50.00	0.0	0.0	579.10	215.00	586.48	0.0	586.50	1.26	1.17	184.32	191.24
28400.000	50.00	0.0	0.0	579.10	290.00	588.37	0.0	588.39	0.93	1.13	259.35	301.00
28400.000	50.00	0.0	0.0	579.10	320.00	588.94	0.0	588.96	0.86	1.14	290.50	345.07
28400.000	50.00	0.0	0.0	579.10	400.00	590.33	0.0	590.34	0.58	1.06	455.23	523.22
29140.000	740.00	0.0	0.0	580.60	215.00	586.62	0.0	586.65	4.01	1.53	140.74	107.32
29140.000	740.00	0.0	0.0	580.60	290.00	588.47	0.0	588.49	2.23	1.33	217.88	194.25
29140.000	740.00	0.0	0.0	580.60	320.00	589.03	0.0	589.06	1.99	1.31	244.36	226.80
29140.000	740.00	0.0	0.0	580.60	400.00	590.39	0.0	590.41	1.56	1.28	313.64	320.57
29190.000	50.00	0.0	0.0	581.40	215.00	586.63	0.0	586.68	3.47	1.68	128.29	115.40
29190.000	50.00	0.0	0.0	581.40	290.00	588.47	0.0	588.51	2.43	1.63	178.05	186.07
29190.000	50.00	0.0	0.0	581.40	320.00	589.03	0.0	589.08	2.34	1.66	193.24	209.14
29190.000	50.00	0.0	0.0	581.40	400.00	590.38	0.0	590.43	2.25	1.74	229.79	266.89
29191.000	1.00	590.40	592.00	581.40	215.00	586.63	0.0	586.68	3.47	1.68	128.35	115.47
29191.000	1.00	590.40	592.00	581.40	290.00	588.47	0.0	588.52	6.60	1.78	162.54	112.89
29191.000	1.00	590.40	592.00	581.40	320.00	589.02	0.0	589.08	8.03	1.97	162.54	112.89
29191.000	1.00	590.40	592.00	581.40	400.00	590.36	0.0	590.45	12.55	2.46	162.54	112.89
29192.000	29.00	590.40	592.00	581.40	215.00	586.64	0.0	586.69	3.45	1.67	128.62	115.83
29192.000	29.00	590.40	592.00	581.40	290.00	588.49	0.0	588.54	6.60	1.78	162.55	112.89
29192.000	29.00	590.40	592.00	581.40	320.00	589.05	0.0	589.11	8.03	1.97	162.55	112.89
29192.000	29.00	590.40	592.00	581.40	400.00	590.40	0.0	590.49	12.55	2.46	162.55	112.89
29193.000	1.00	0.0	0.0	581.40	215.00	586.64	0.0	586.69	3.44	1.67	128.63	115.85
29193.000	1.00	0.0	0.0	581.40	290.00	588.50	0.0	588.54	2.41	1.62	178.52	186.78
29193.000	1.00	0.0	0.0	581.40	320.00	589.07	0.0	589.11	2.31	1.65	194.15	210.54
29193.000	1.00	0.0	0.0	581.40	400.00	590.46	0.0	590.51	2.20	1.73	231.66	269.92
29240.000	50.00	0.0	0.0	580.50	215.00	586.69	0.0	586.71	1.36	1.07	200.54	184.44
29240.000	50.00	0.0	0.0	580.50	290.00	588.54	0.0	588.55	0.80	0.97	299.60	323.40
29240.000	50.00	0.0	0.0	580.50	320.00	589.11	0.0	589.13	0.71	0.96	332.91	378.93
29240.000	50.00	0.0	0.0	580.50	400.00	590.51	0.0	590.52	0.57	0.97	413.63	528.45
30240.000	1000.00	0.0	0.0	581.80	215.00	586.96	0.0	587.03	12.16	2.11	101.97	61.65
30240.000	1000.00	0.0	0.0	581.80	290.00	588.69	0.0	588.73	5.87	1.74	167.10	119.67
30240.000	1000.00	0.0	0.0	581.80	320.00	589.24	0.0	589.29	4.93	1.68	190.80	144.15
30240.000	1000.00	0.0	0.0	581.80	400.00	590.60	0.0	590.64	3.35	1.59	251.68	218.45

MOORE BUSINESS FORMS, INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	ICK*S	VCH	AREA	*OIK
30290.000	50.00	0.0	0.0	581.70	215.00	587.01	0.0	587.11	15.55	2.52	85.18	54.52
30290.000	50.00	0.0	0.0	581.70	290.00	588.70	0.0	588.79	10.42	2.40	121.07	89.83
30290.000	50.00	0.0	0.0	581.70	320.00	589.25	0.0	589.34	9.74	2.40	133.14	102.55
30290.000	50.00	0.0	0.0	581.70	400.00	590.60	0.0	590.69	8.62	2.45	163.36	136.22
30291.000	1.00	590.30	592.20	581.70	215.00	587.01	0.0	587.11	15.43	2.52	85.40	54.73
30291.000	1.00	590.30	592.20	581.70	290.00	588.70	0.0	588.79	10.41	2.39	121.10	89.86
30291.000	1.00	590.30	592.20	581.70	320.00	589.25	0.0	589.34	9.75	2.40	133.08	102.49
30291.000	1.00	590.30	592.20	581.70	400.00	590.59	0.0	590.70	21.81	2.67	149.70	95.65
302920.000	22.50	590.30	592.20	581.70	215.00	587.05	0.0	587.15	15.06	2.50	86.13	55.40
302920.000	22.50	590.30	592.20	581.70	290.00	588.73	0.0	588.82	10.29	2.38	121.61	90.39
302920.000	22.50	590.30	592.20	581.70	320.00	589.28	0.0	589.37	9.65	2.40	133.56	103.01
302920.000	22.50	590.30	592.20	581.70	400.00	590.64	0.0	590.75	21.81	2.67	149.70	95.65
30293.000	1.00	0.0	0.0	581.70	215.00	587.05	0.0	587.15	15.03	2.49	86.20	55.46
30293.000	1.00	0.0	0.0	581.70	290.00	588.73	0.0	588.82	10.28	2.38	121.65	90.44
30293.000	1.00	0.0	0.0	581.70	320.00	589.28	0.0	589.37	9.64	2.40	133.60	103.04
30293.000	1.00	0.0	0.0	581.70	400.00	590.69	0.0	590.77	7.30	2.26	227.51	148.08
30340.000	50.00	0.0	0.0	581.50	215.00	587.15	0.0	587.22	11.81	2.17	99.07	62.56
30340.000	50.00	0.0	0.0	581.50	290.00	588.81	0.0	588.87	6.59	1.90	152.94	112.93
30340.000	50.00	0.0	0.0	581.50	320.00	589.36	0.0	589.41	5.67	1.85	172.74	134.43
30340.000	50.00	0.0	0.0	581.50	400.00	590.75	0.0	590.80	4.10	1.78	224.92	197.64
32450.000	2110.00	0.0	0.0	586.70	215.00	591.10	0.0	591.29	36.16	3.48	61.79	35.75
32450.000	2110.00	0.0	0.0	586.70	290.00	591.57	0.0	591.82	44.13	4.06	71.46	43.65
32450.000	2110.00	0.0	0.0	586.70	320.00	591.80	0.0	592.08	44.52	4.18	76.55	47.96
32450.000	2110.00	0.0	0.0	586.70	400.00	592.57	0.0	592.85	40.00	4.27	93.78	63.25
32500.000	50.00	0.0	0.0	586.60	215.00	591.28	0.0	591.47	35.69	3.48	61.74	35.99
32500.000	50.00	0.0	0.0	586.60	290.00	591.79	0.0	592.04	42.92	4.03	71.88	44.27
32500.000	50.00	0.0	0.0	586.60	320.00	592.03	0.0	592.30	43.48	4.16	76.91	48.53
32500.000	50.00	0.0	0.0	586.60	400.00	592.77	0.0	593.05	40.08	4.28	93.47	63.18
32501.000	1.00	596.30	597.90	586.60	215.00	591.29	0.0	591.47	35.58	3.48	61.81	36.05
32501.000	1.00	596.30	597.90	586.60	290.00	591.79	0.0	592.05	42.70	4.03	72.01	44.38
32501.000	1.00	596.30	597.90	586.60	320.00	592.03	0.0	592.30	43.26	4.15	77.06	48.65
32501.000	1.00	596.30	597.90	586.60	400.00	592.77	0.0	593.06	39.98	4.28	93.56	63.26
32502.000	16.00	596.30	597.90	586.60	215.00	591.35	0.0	591.53	33.87	3.42	62.93	36.94
32502.000	16.00	596.30	597.90	586.60	290.00	591.87	0.0	592.12	40.29	3.94	73.57	45.69
32502.000	16.00	596.30	597.90	586.60	320.00	592.12	0.0	592.37	40.87	4.07	78.69	50.05
32502.000	16.00	596.30	597.90	586.60	400.00	592.85	0.0	593.12	38.17	4.20	95.18	64.75
32503.000	1.00	0.0	0.0	586.60	215.00	591.35	0.0	591.53	33.57	3.41	63.14	37.11
32503.000	1.00	0.0	0.0	586.60	290.00	591.88	0.0	592.12	39.98	3.93	73.78	45.87
32503.000	1.00	0.0	0.0	586.60	320.00	592.12	0.0	592.38	40.55	4.05	78.92	50.25
32503.000	1.00	0.0	0.0	586.60	400.00	592.86	0.0	593.13	37.92	4.19	95.41	64.95
32550.000	50.00	0.0	0.0	586.60	215.00	591.59	0.0	591.65	9.74	2.03	105.94	68.87
32550.000	50.00	0.0	0.0	586.60	290.00	592.18	0.0	592.26	11.74	2.37	122.20	84.65
32550.000	50.00	0.0	0.0	586.60	320.00	592.43	0.0	592.53	12.13	2.47	129.39	91.88
32550.000	50.00	0.0	0.0	586.60	400.00	593.17	0.0	593.28	12.28	2.65	150.67	114.14

MOORE BUSINESS FORMS, INC 27

	SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	34740.000	2190.00	0.0	0.0	591.20	215.00	595.23	0.0	595.41	36.88	3.37	63.75	35.40
	34740.000	2190.00	0.0	0.0	591.20	290.00	596.06	0.0	596.25	31.36	3.47	83.52	51.79
	34740.000	2190.00	0.0	0.0	591.20	320.00	596.35	0.0	596.54	30.30	3.53	90.74	58.13
	34740.000	2190.00	0.0	0.0	591.20	400.00	597.02	0.0	597.23	28.63	3.68	108.77	74.76
	34790.000	50.00	0.0	0.0	590.90	215.00	595.38	0.0	595.88	122.07	5.69	37.76	19.46
	34790.000	50.00	0.0	0.0	590.90	290.00	596.12	0.0	596.76	136.39	6.41	45.25	24.83
	34790.000	50.00	0.0	0.0	590.90	320.00	596.38	0.0	597.08	143.47	6.69	47.81	26.72
	34790.000	50.00	0.0	0.0	590.90	400.00	596.99	0.0	597.84	163.90	7.43	53.87	31.24
*	34791.000	59.00	601.10	596.60	590.90	215.00	603.48	603.48	604.75	485.89	9.02	23.85	9.75
	34791.000	59.00	601.10	596.60	590.90	290.00	596.66	0.0	597.17	101.06	5.72	50.68	28.85
	34791.000	59.00	601.10	596.60	590.90	320.00	597.14	0.0	597.65	97.47	5.78	55.41	32.41
	34791.000	59.00	601.10	596.60	590.90	400.00	598.44	0.0	598.97	88.53	5.84	68.47	42.51
	34840.000	50.00	0.0	0.0	591.30	215.00	605.12	0.0	605.13	0.26	0.57	375.42	424.11
	34840.000	50.00	0.0	0.0	591.30	290.00	597.34	0.0	597.44	14.65	2.63	110.39	75.78
	34840.000	50.00	0.0	0.0	591.30	320.00	597.81	0.0	597.92	12.93	2.58	124.21	89.01
	34840.000	50.00	0.0	0.0	591.30	400.00	599.12	0.0	599.21	9.25	2.42	165.63	131.52

MOORE BUSINESS FORMS INC 27

KOCHVILLE DRAIN UPSTREAM

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
24640.000	215.00	585.12	0.0	0.0	0.0	11.00	0.0
24640.000	290.00	586.39	1.27	0.0	0.0	11.00	0.0
24640.000	320.00	586.90	0.51	0.0	0.0	11.00	0.0
24640.000	400.00	588.19	1.29	0.0	0.0	11.00	0.0
24641.000	215.00	585.56	0.0	0.44	0.0	11.00	75.00
24641.000	290.00	587.25	1.68	0.86	0.0	11.00	75.00
24641.000	320.00	587.96	0.71	1.06	0.0	11.00	75.00
24641.000	400.00	589.18	1.22	0.99	0.0	151.29	75.00
24890.000	215.00	585.62	0.0	0.06	0.0	12.40	100.00
24890.000	290.00	587.31	1.69	0.07	0.0	12.40	100.00
24890.000	320.00	588.03	0.72	0.07	0.0	12.40	100.00
24890.000	400.00	589.24	1.21	0.06	0.0	12.40	100.00
24891.000	215.00	585.79	0.0	0.17	0.0	12.40	40.00
24891.000	290.00	587.68	1.88	0.36	0.0	12.40	40.00
24891.000	320.00	589.49	0.81	0.46	0.0	12.40	40.00
24891.000	400.00	589.96	1.47	0.72	0.0	12.40	40.00
24940.000	215.00	585.88	0.0	0.09	0.0	37.89	100.00
24940.000	290.00	587.78	1.90	0.10	0.0	40.97	100.00
24940.000	320.00	588.59	0.82	0.11	0.0	85.89	100.00
24940.000	400.00	590.09	1.50	0.13	0.0	90.00	100.00
25565.000	215.00	585.93	0.0	0.06	0.0	34.00	575.00
25565.000	290.00	587.82	1.88	0.04	0.0	170.00	575.00
25565.000	320.00	588.63	0.81	0.03	0.0	170.00	575.00
25565.000	400.00	590.12	1.49	0.03	0.0	170.00	575.00
25615.000	215.00	585.95	0.0	0.02	0.0	33.09	100.00
25615.000	290.00	587.83	1.88	0.01	0.0	79.84	100.00
25615.000	320.00	588.63	0.80	0.00	0.0	130.08	100.00
25615.000	400.00	590.12	1.49	0.00	0.0	150.00	100.00
25616.000	215.00	585.95	0.0	0.0	0.0	33.10	1.00
25616.000	290.00	587.82	1.87	-0.00	0.0	79.86	1.00
25616.000	320.00	588.63	0.81	-0.00	0.0	129.81	1.00
25616.000	400.00	590.12	1.49	-0.00	0.0	150.00	1.00
25617.000	215.00	585.95	0.0	0.00	0.0	33.10	8.00
25617.000	290.00	587.83	1.87	0.00	0.0	79.81	8.00
25617.000	320.00	588.63	0.81	0.00	0.0	129.81	8.00
25617.000	400.00	590.12	1.49	0.00	0.0	150.00	8.00
25618.000	215.00	585.95	0.0	0.0	0.0	33.10	1.00
25618.000	290.00	587.84	1.89	0.01	0.0	79.98	1.00
25618.000	320.00	588.64	0.80	0.01	0.0	130.08	1.00
25618.000	400.00	590.12	1.48	0.00	0.0	150.00	1.00
25665.000	215.00	585.98	0.0	0.03	0.0	109.72	80.00
25665.000	290.00	587.87	1.89	0.03	0.0	160.00	80.00
25665.000	320.00	588.66	0.79	0.02	0.0	160.00	80.00
25665.000	400.00	590.13	1.47	0.01	0.0	160.00	80.00

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
26510.000	215.00	586.01	0.0	0.03	0.0	52.85	300.00
26510.000	290.00	587.88	1.87	0.01	0.0	96.76	300.00
26510.000	320.00	588.67	0.79	0.00	0.0	106.34	300.00
26510.000	400.00	590.13	1.47	0.00	0.0	120.00	300.00
26560.000	215.00	586.08	0.0	0.07	0.0	32.98	550.00
26560.000	290.00	587.91	1.83	0.03	0.0	90.00	550.00
26560.000	320.00	588.69	0.78	0.02	0.0	90.00	550.00
26560.000	400.00	590.15	1.46	0.01	0.0	90.00	550.00
26561.000	215.00	586.08	0.0	0.00	0.0	33.08	16.00
26561.000	290.00	587.91	1.83	0.00	0.0	90.00	16.00
26561.000	320.00	588.69	0.78	0.00	0.0	90.00	16.00
26561.000	400.00	590.15	1.46	0.00	0.0	90.00	16.00
26610.000	215.00	586.10	0.0	0.02	0.0	52.83	50.00
26610.000	290.00	587.92	1.82	0.01	0.0	86.90	50.00
26610.000	320.00	588.70	0.78	0.01	0.0	90.00	50.00
26610.000	400.00	590.15	1.45	0.01	0.0	90.00	50.00
26790.000	215.00	586.14	0.0	0.04	0.0	72.02	180.00
26790.000	290.00	587.94	1.80	0.02	0.0	93.61	180.00
26790.000	320.00	588.72	0.77	0.02	0.0	100.00	180.00
26790.000	400.00	590.17	1.45	0.01	0.0	100.00	180.00
26840.000	215.00	586.12	0.0	-0.02	0.0	51.55	50.00
26840.000	290.00	587.94	1.82	-0.00	0.0	110.00	50.00
26840.000	320.00	588.71	0.77	-0.00	0.0	110.00	50.00
26840.000	400.00	590.17	1.45	0.0	0.0	110.00	50.00
26841.000	215.00	586.13	0.0	0.00	0.0	51.56	30.00
26841.000	290.00	587.98	1.85	0.04	0.0	110.00	30.00
26841.000	320.00	588.76	0.78	0.05	0.0	110.00	30.00
26841.000	400.00	590.22	1.46	0.06	0.0	110.00	30.00
26890.000	215.00	586.25	0.0	0.12	0.0	122.92	50.00
26890.000	290.00	588.00	1.76	0.03	0.0	130.00	50.00
26890.000	320.00	588.78	0.77	0.02	0.0	130.00	50.00
26890.000	400.00	590.23	1.46	0.01	0.0	130.00	50.00
28300.000	215.00	586.35	0.0	0.10	0.0	43.10	1410.00
28300.000	290.00	588.06	1.71	0.05	0.0	58.99	1410.00
28300.000	320.00	589.82	0.76	0.04	0.0	134.01	1410.00
28300.000	400.00	590.26	1.44	0.03	0.0	140.00	1410.00
28350.000	215.00	586.32	0.0	-0.03	0.0	12.00	50.00
28350.000	290.00	588.02	1.70	-0.04	0.0	47.05	50.00
28350.000	320.00	588.80	0.77	-0.02	0.0	84.92	50.00
28350.000	400.00	590.26	1.46	-0.00	0.0	140.00	50.00
28351.000	215.00	586.34	0.0	0.02	0.0	12.00	20.00
28351.000	290.00	588.25	1.91	0.23	0.0	58.22	20.00
28351.000	320.00	588.86	0.61	0.06	0.0	88.07	20.00
28351.000	400.00	590.31	1.45	0.05	0.0	140.00	20.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
28400.000	215.00	586.48	0.0	0.13	0.0	34.98	50.00
28400.000	290.00	588.37	1.89	0.12	0.0	49.49	50.00
28400.000	320.00	589.94	0.57	0.08	0.0	68.68	50.00
28400.000	400.00	590.33	1.38	0.01	0.0	125.00	50.00
29140.000	215.00	586.62	0.0	0.14	0.0	37.66	740.00
29140.000	290.00	588.47	1.85	0.10	0.0	45.79	740.00
29140.000	320.00	589.03	0.56	0.09	0.0	48.27	740.00
29140.000	400.00	590.39	1.36	0.06	0.0	53.00	740.00
29190.000	215.00	586.63	0.0	0.01	0.0	27.00	50.00
29190.000	290.00	588.47	1.84	0.00	0.0	27.00	50.00
29190.000	320.00	589.03	0.56	0.00	0.0	27.00	50.00
29190.000	400.00	590.38	1.35	-0.00	0.0	27.00	50.00
29191.000	215.00	586.63	0.0	0.00	0.0	27.00	1.00
29191.000	290.00	588.47	1.83	-0.00	0.0	27.00	1.00
29191.000	320.00	589.02	0.56	-0.01	0.0	27.00	1.00
29191.000	400.00	590.36	1.34	-0.02	0.0	27.00	1.00
29192.000	215.00	586.54	0.0	0.01	0.0	27.00	29.00
29192.000	290.00	588.49	1.84	0.02	0.0	27.00	29.00
29192.000	320.00	589.05	0.56	0.02	0.0	27.00	29.00
29192.000	400.00	590.40	1.35	0.04	0.0	27.00	29.00
29193.000	215.00	586.64	0.0	0.00	0.0	27.00	1.00
29193.000	290.00	588.50	1.85	0.01	0.0	27.00	1.00
29193.000	320.00	589.07	0.57	0.02	0.0	27.00	1.00
29193.000	400.00	590.46	1.39	0.06	0.0	27.00	1.00
29240.000	215.00	586.59	0.0	0.04	0.0	49.41	50.00
29240.000	290.00	588.54	1.85	0.04	0.0	57.35	50.00
29240.000	320.00	589.11	0.57	0.04	0.0	58.00	50.00
29240.000	400.00	590.51	1.39	0.05	0.0	58.00	50.00
30240.000	215.00	586.96	0.0	0.27	0.0	33.12	1000.00
30240.000	290.00	588.69	1.73	0.15	0.0	41.92	1000.00
30240.000	320.00	589.24	0.56	0.13	0.0	43.89	1000.00
30240.000	400.00	590.60	1.36	0.10	0.0	45.00	1000.00
30290.000	215.00	587.01	0.0	0.05	0.0	20.51	50.00
30290.000	290.00	588.70	1.69	0.02	0.0	21.64	50.00
30290.000	320.00	589.25	0.55	0.01	0.0	22.01	50.00
30290.000	400.00	590.60	1.35	-0.00	0.0	22.50	50.00
30291.000	215.00	587.01	0.0	0.00	0.0	20.52	1.00
30291.000	290.00	588.70	1.69	0.00	0.0	21.64	1.00
30291.000	320.00	589.25	0.55	0.00	0.0	22.00	1.00
30291.000	400.00	590.59	1.34	-0.01	0.0	22.50	1.00
302920.000	215.00	587.05	0.0	0.04	0.0	20.54	22.50
302920.000	290.00	588.73	1.68	0.02	0.0	21.66	22.50
302920.000	320.00	589.28	0.55	0.02	0.0	22.02	22.50
302920.000	400.00	590.64	1.37	0.05	0.0	22.50	22.50

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
30293.000	215.00	587.05	0.0	0.00	0.0	20.55	1.00
30293.000	290.00	588.73	1.68	0.00	0.0	21.66	1.00
30293.000	320.00	589.28	0.55	0.00	0.0	22.02	1.00
30293.000	400.00	590.59	1.41	0.05	0.0	190.36	1.00
30340.000	215.00	587.15	0.0	0.10	0.0	29.28	50.00
30340.000	290.00	588.81	1.67	0.08	0.0	35.41	50.00
30340.000	320.00	589.36	0.55	0.08	0.0	36.53	50.00
30340.000	400.00	590.75	1.39	0.06	0.0	38.00	50.00
32450.000	215.00	591.10	0.0	3.96	0.0	19.88	2110.00
32450.000	290.00	591.57	0.46	2.75	0.0	21.05	2110.00
32450.000	320.00	591.80	0.24	2.45	0.0	21.64	2110.00
32450.000	400.00	592.57	0.77	1.82	0.0	23.52	2110.00
32500.000	215.00	591.28	0.0	0.18	0.0	19.45	50.00
32500.000	290.00	591.79	0.51	0.22	0.0	20.72	50.00
32500.000	320.00	592.03	0.24	0.22	0.0	21.31	50.00
32500.000	400.00	592.77	0.74	0.20	0.0	23.18	50.00
32501.000	215.00	591.29	0.0	0.00	0.0	19.46	1.00
32501.000	290.00	591.79	0.51	0.01	0.0	20.73	1.00
32501.000	320.00	592.03	0.24	0.01	0.0	21.33	1.00
32501.000	400.00	592.77	0.74	0.00	0.0	23.18	1.00
32502.000	215.00	591.35	0.0	0.06	0.0	19.61	16.00
32502.000	290.00	591.87	0.52	0.08	0.0	20.92	16.00
32502.000	320.00	592.12	0.24	0.08	0.0	21.52	16.00
32502.000	400.00	592.85	0.73	0.07	0.0	23.36	16.00
32503.000	215.00	591.35	0.0	0.00	0.0	19.63	1.00
32503.000	290.00	591.88	0.52	0.01	0.0	20.94	1.00
32503.000	320.00	592.12	0.24	0.01	0.0	21.55	1.00
32503.000	400.00	592.86	0.73	0.01	0.0	23.38	1.00
32550.000	215.00	591.59	0.0	0.23	0.0	27.22	50.00
32550.000	290.00	592.18	0.59	0.30	0.0	28.04	50.00
32550.000	320.00	592.43	0.25	0.31	0.0	28.39	50.00
32550.000	400.00	593.17	0.74	0.31	0.0	29.41	50.00
34740.000	215.00	595.23	0.0	3.65	0.0	22.80	2190.00
34740.000	290.00	596.06	0.83	3.89	0.0	25.00	2190.00
34740.000	320.00	596.35	0.28	3.92	0.0	25.75	2190.00
34740.000	400.00	597.02	0.68	3.86	0.0	27.55	2190.00
34790.000	215.00	595.38	0.0	0.14	0.0	10.00	50.00
34790.000	290.00	596.12	0.75	0.06	0.0	10.00	50.00
34790.000	320.00	596.38	0.26	0.03	0.0	10.00	50.00
34790.000	400.00	596.99	0.60	-0.04	0.0	10.00	50.00
34791.000	215.00	603.48	0.0	8.11	0.0	10.00	59.00
34791.000	290.00	596.66	-6.82	0.54	0.0	10.00	59.00
34791.000	320.00	597.14	0.47	0.75	0.0	10.00	59.00
34791.000	400.00	598.44	1.31	1.46	0.0	10.00	59.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
34840.000	215.00	605.12	0.0	1.64	0.0	35.00	50.00
34840.000	290.00	597.34	-7.79	0.68	0.0	28.26	50.00
34840.000	320.00	597.81	0.48	0.68	0.0	29.70	50.00
34840.000	400.00	599.12	1.31	0.68	0.0	33.66	50.00

SUMMARY OF ERRORS

CAUTION SECNO 34791.000 PROFILE 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO 34791.000 PROFILE 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO 34791.000 PROFILE 1 20 TRIALS ATTEMPTED TO BALANCE WSEL

MOORE BUSINESS FORMS INC 27

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: KOCHVILLE TWP

3) WATERCOURSE: KOCHVILLE DRAIN TO CONFLUENCE OF S BRANCH KOCHVILLE DRAIN

4) DOCUMENT TYPE: SUMMARY

GOVEA	JGOVEDSS	2193	GO.FT06F001	9.12.56	5 JUN 80	KOCHVILLE DRAIN	DRAIN
GOVEA	JGOVEDSS	2193	GO.FT06F001	9.12.56	5 JUN 80	KOCHVILLE DRAIN	DRAIN
GOVEA	JGOVEDSS	2193	GO.FT06F001	9.12.56	5 JUN 80	KOCHVILLE DRAIN	DRAIN

Kochville Drain up to Confluence with South Branch Kochville Drain 060580
&
South Branch Kochville Drain

(2) Summary printout

MOORE BUSINESS FORMS INC 27

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

KOCHVILLE DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
13340.000	0.0	0.0	0.0	575.70	510.00	579.84	0.0	580.08	27.33	3.93	129.79	97.55
13340.000	0.0	0.0	0.0	575.70	790.00	580.69	0.0	580.99	27.32	4.39	179.92	151.15
13340.000	0.0	0.0	0.0	575.70	910.00	581.00	0.0	581.32	27.31	4.55	199.97	174.13
13340.000	0.0	0.0	0.0	575.70	1270.00	581.70	0.0	582.11	27.51	5.13	247.79	242.15
14530.000	1190.00	0.0	0.0	575.30	510.00	580.82	0.0	580.87	2.80	1.71	298.66	305.01
14530.000	1190.00	0.0	0.0	575.30	790.00	581.81	0.0	581.87	3.26	2.08	380.15	437.25
14530.000	1190.00	0.0	0.0	575.30	910.00	582.16	0.0	582.24	3.44	2.22	409.69	490.99
14530.000	1190.00	0.0	0.0	575.30	1270.00	583.03	0.0	583.14	4.01	2.62	483.86	634.30
14580.000	50.00	0.0	0.0	574.40	510.00	580.80	0.0	580.90	5.57	2.56	199.33	216.15
14580.000	50.00	0.0	0.0	574.40	790.00	581.76	0.0	581.92	7.24	3.22	245.35	293.55
14580.000	50.00	0.0	0.0	574.40	910.00	582.11	0.0	582.29	7.88	3.47	261.98	324.21
14580.000	50.00	0.0	0.0	574.40	1270.00	582.94	0.0	583.22	9.92	4.19	303.06	403.24
14581.000	10.00	0.0	0.0	574.40	510.00	580.81	0.0	580.91	5.55	2.56	199.51	216.42
14581.000	10.00	0.0	0.0	574.40	790.00	581.77	0.0	581.93	7.22	3.22	245.58	293.97
14581.000	10.00	0.0	0.0	574.40	910.00	582.12	0.0	582.30	7.85	3.47	262.24	324.69
14581.000	10.00	0.0	0.0	574.40	1270.00	582.96	0.0	583.23	9.88	4.19	303.42	403.94
14630.000	50.00	0.0	0.0	572.80	510.00	580.89	0.0	580.93	2.45	1.65	309.65	325.69
14630.000	50.00	0.0	0.0	572.80	790.00	581.90	0.0	581.96	2.96	2.02	391.89	458.89
14630.000	50.00	0.0	0.0	572.80	910.00	582.27	0.0	582.34	3.13	2.15	422.50	514.60
14630.000	50.00	0.0	0.0	572.80	1270.00	583.17	0.0	583.27	3.65	2.54	500.47	664.84
16240.000	1610.00	0.0	0.0	575.90	510.00	581.21	0.0	581.23	1.47	1.21	419.76	420.41
16240.000	1610.00	0.0	0.0	575.90	790.00	582.27	0.0	582.30	1.56	1.45	543.40	632.61
16240.000	1610.00	0.0	0.0	575.90	910.00	582.66	0.0	582.69	1.61	1.55	588.98	717.99
16240.000	1610.00	0.0	0.0	575.90	1270.00	583.62	0.0	583.67	1.78	1.80	705.95	952.83
17240.000	900.00	0.0	0.0	576.30	510.00	581.44	0.0	581.53	10.10	2.40	212.06	160.47
17240.000	900.00	0.0	0.0	576.30	790.00	582.49	0.0	582.59	7.61	2.58	305.64	286.41
17240.000	900.00	0.0	0.0	576.30	910.00	582.87	0.0	582.98	7.14	2.67	341.37	340.66
17240.000	900.00	0.0	0.0	576.30	1270.00	583.84	0.0	583.98	6.60	2.93	433.67	494.39
17290.000	150.00	0.0	0.0	576.40	510.00	581.58	0.0	581.67	8.59	2.49	204.58	174.05
17290.000	150.00	0.0	0.0	576.40	790.00	582.59	0.0	582.72	7.91	2.87	275.68	280.90
17290.000	150.00	0.0	0.0	576.40	910.00	582.97	0.0	583.11	7.86	3.01	301.88	324.61
17290.000	150.00	0.0	0.0	576.40	1270.00	583.93	0.0	584.11	8.10	3.44	369.16	446.34

MOORE BUSINESS FORMS, INC. 27

	SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
	17291.000	9.00	587.20	583.60	576.40	510.00	581.59	0.0	581.69	6.44	2.48	205.68	175.57
	17291.000	9.00	587.20	583.60	576.40	790.00	582.61	0.0	582.74	7.78	2.85	277.11	283.24
	17291.000	9.00	587.20	583.60	576.40	910.00	582.99	0.0	583.13	7.72	3.00	303.52	327.41
	17291.000	9.00	587.20	583.60	576.40	1270.00	584.10	0.0	584.27	7.31	3.33	381.27	469.60
	17340.000	100.00	0.0	0.0	576.40	510.00	581.73	0.0	581.76	3.27	1.39	366.63	282.15
	17340.000	100.00	0.0	0.0	576.40	790.00	582.77	0.0	582.81	2.46	1.51	523.05	503.38
	17340.000	100.00	0.0	0.0	576.40	910.00	583.16	0.0	583.20	2.31	1.56	581.50	598.55
	17340.000	100.00	0.0	0.0	576.40	1270.00	584.30	0.0	584.34	1.94	1.69	752.59	911.04
	17415.000	600.00	0.0	0.0	576.30	510.00	581.89	0.0	581.94	2.73	1.75	291.38	308.55
	17415.000	600.00	0.0	0.0	576.30	790.00	582.91	0.0	582.99	3.25	2.15	366.77	437.94
	17415.000	600.00	0.0	0.0	576.30	910.00	583.30	0.0	583.38	3.43	2.30	395.86	491.37
	17415.000	600.00	0.0	0.0	576.30	1270.00	584.41	0.0	584.52	3.66	2.63	485.54	663.81
*	17465.000	100.00	0.0	0.0	580.80	510.00	582.26	582.26	582.91	166.13	6.48	78.76	39.57
*	17465.000	100.00	0.0	0.0	580.80	790.00	582.73	582.73	583.53	163.27	7.17	110.15	61.83
	17465.000	100.00	0.0	0.0	580.80	910.00	583.11	0.0	583.77	114.07	6.51	139.80	85.20
	17465.000	100.00	0.0	0.0	580.80	1270.00	584.33	0.0	584.77	39.78	5.36	237.00	201.37
	17466.000	5.00	591.00	585.30	580.80	510.00	582.69	0.0	583.04	37.27	4.73	107.75	83.54
	17466.000	5.00	591.00	585.30	580.80	790.00	583.24	0.0	583.67	35.13	5.28	149.61	133.29
	17466.000	5.00	591.00	585.30	580.80	910.00	583.27	0.0	583.83	44.98	6.02	151.24	135.69
	17466.000	5.00	591.00	585.30	580.80	1270.00	584.35	0.0	584.79	20.07	5.34	237.80	283.46
	17467.000	44.00	590.40	587.60	576.20	510.00	583.10	0.0	583.14	1.30	1.67	304.67	447.97
	17467.000	44.00	590.40	587.60	576.20	790.00	583.72	0.0	583.80	1.96	2.24	352.12	564.02
	17467.000	44.00	590.40	587.60	576.20	910.00	583.90	0.0	584.00	2.31	2.49	365.56	598.54
	17467.000	44.00	590.40	587.60	576.20	1270.00	584.77	0.0	584.91	2.64	2.94	432.67	780.93
	17468.000	5.00	0.0	0.0	576.20	510.00	583.10	0.0	583.15	1.85	1.67	305.36	374.65
	17468.000	5.00	0.0	0.0	576.20	790.00	583.73	0.0	583.80	2.81	2.24	352.81	471.47
	17468.000	5.00	0.0	0.0	576.20	910.00	583.90	0.0	584.00	3.30	2.48	366.42	500.63
	17468.000	5.00	0.0	0.0	576.20	1270.00	584.77	0.0	584.91	3.80	2.93	433.07	651.70
	17515.000	70.00	0.0	0.0	576.70	510.00	583.12	0.0	583.16	1.18	1.49	342.10	459.94
	17515.000	70.00	0.0	0.0	576.70	790.00	583.76	0.0	583.82	1.96	2.03	388.60	564.66
	17515.000	70.00	0.0	0.0	576.70	910.00	583.94	0.0	584.02	2.34	2.26	403.04	595.00
	17515.000	70.00	0.0	0.0	576.70	1270.00	584.82	0.0	584.94	2.90	2.69	472.03	745.53
	17600.000	70.00	0.0	0.0	576.10	510.00	583.12	0.0	583.18	2.17	2.06	247.55	346.53
	17600.000	70.00	0.0	0.0	576.10	790.00	583.75	0.0	583.87	3.73	2.86	276.04	409.05
	17600.000	70.00	0.0	0.0	576.10	910.00	583.92	0.0	584.08	4.53	3.20	284.25	427.62
	17600.000	70.00	0.0	0.0	576.10	1270.00	584.79	0.0	585.03	5.94	3.92	324.08	520.95
	17601.000	1.00	588.60	584.90	576.10	510.00	583.12	0.0	583.18	1.51	2.06	247.21	414.95
	17601.000	1.00	588.60	584.90	576.10	790.00	583.75	0.0	583.87	2.59	2.86	276.07	490.95
	17601.000	1.00	588.60	584.90	576.10	910.00	583.92	0.0	584.08	3.14	3.20	284.25	513.14
	17601.000	1.00	588.60	584.90	576.10	1270.00	584.79	0.0	585.03	4.13	3.92	324.10	625.21
	17602.000	67.50	588.60	584.90	576.10	510.00	583.13	0.0	583.19	1.50	2.06	247.77	416.39
	17602.000	67.50	588.60	584.90	576.10	790.00	583.76	0.0	583.89	2.56	2.85	277.05	493.58
	17602.000	67.50	588.60	584.90	576.10	910.00	583.95	0.0	584.10	3.11	3.19	285.44	516.40
	17602.000	67.50	588.60	584.90	576.10	1270.00	584.82	0.0	585.06	4.07	3.90	325.68	629.75

MOORE BUSINESS FORMS, INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
17603.000	1.00	0.0	0.0	576.10	510.00	583.13	0.0	583.19	1.50	2.06	247.68	416.16
17603.000	1.00	0.0	0.0	576.10	790.00	583.76	0.0	583.89	2.57	2.85	276.92	493.25
17603.000	1.00	0.0	0.0	576.10	910.00	583.95	0.0	584.10	3.11	3.19	285.30	516.03
17603.000	1.00	0.0	0.0	576.10	1270.00	584.82	0.0	585.06	4.07	3.90	325.53	629.33
17665.000	30.00	0.0	0.0	576.10	510.00	583.13	0.0	583.20	1.50	2.06	247.88	416.68
17665.000	30.00	0.0	0.0	576.10	790.00	583.77	0.0	583.90	2.56	2.85	277.27	494.19
17665.000	30.00	0.0	0.0	576.10	910.00	583.96	0.0	584.11	3.10	3.18	285.72	517.17
17665.000	30.00	0.0	0.0	576.10	1270.00	584.83	0.0	585.07	4.05	3.99	326.10	630.99
17666.000	1.00	588.60	584.90	576.10	510.00	583.13	0.0	583.20	1.50	2.06	247.88	416.68
17666.000	1.00	588.60	584.90	576.10	790.00	583.77	0.0	583.90	2.55	2.85	277.29	494.25
17666.000	1.00	588.60	584.90	576.10	910.00	583.96	0.0	584.11	3.10	3.18	285.75	517.26
17666.000	1.00	588.60	584.90	576.10	1270.00	584.83	0.0	585.07	4.05	3.89	326.15	631.12
17667.000	67.50	588.60	584.90	576.10	510.00	583.14	0.0	583.21	1.49	2.05	249.34	417.87
17667.000	67.50	588.60	584.90	576.10	790.00	583.79	0.0	583.92	2.53	2.84	278.08	496.38
17667.000	67.50	588.60	584.90	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.72	519.90
17667.000	67.50	588.60	584.90	576.10	1270.00	584.86	0.0	585.10	4.00	3.88	327.39	634.73
17668.000	1.00	0.0	0.0	576.10	510.00	583.14	0.0	583.21	1.49	2.05	248.35	417.89
17668.000	1.00	0.0	0.0	576.10	790.00	583.79	0.0	583.92	2.53	2.84	278.14	496.53
17668.000	1.00	0.0	0.0	576.10	910.00	583.98	0.0	584.14	3.06	3.17	286.78	520.09
17668.000	1.00	0.0	0.0	576.10	1270.00	584.86	0.0	585.10	4.00	3.88	327.52	535.09
17715.000	100.00	0.0	0.0	576.20	510.00	583.21	0.0	583.23	1.06	1.26	405.34	494.44
17715.000	100.00	0.0	0.0	576.20	790.00	583.92	0.0	583.96	1.71	1.70	463.55	604.24
17715.000	100.00	0.0	0.0	576.20	910.00	584.13	0.0	584.19	2.02	1.89	481.98	640.31
17715.000	100.00	0.0	0.0	576.20	1270.00	585.10	0.0	585.18	2.38	2.23	582.04	822.65
17915.000	200.00	0.0	0.0	576.20	435.00	583.23	0.0	583.25	0.76	1.07	407.40	498.21
17915.000	200.00	0.0	0.0	576.20	670.00	583.96	0.0	583.99	1.20	1.43	467.08	611.11
17915.000	200.00	0.0	0.0	576.20	780.00	584.19	0.0	584.23	1.45	1.60	486.25	648.75
17915.000	200.00	0.0	0.0	576.20	1070.00	585.16	0.0	585.22	1.63	1.86	600.49	837.05
18940.000	1200.00	0.0	0.0	577.20	435.00	583.35	0.0	583.37	1.36	1.29	336.54	373.46
18940.000	1200.00	0.0	0.0	577.20	670.00	584.13	0.0	584.17	1.92	1.68	401.36	483.33
18940.000	1200.00	0.0	0.0	577.20	780.00	584.39	0.0	584.44	2.23	1.85	430.58	522.75
18940.000	1200.00	0.0	0.0	577.20	1070.00	585.39	0.0	585.45	2.36	2.09	601.42	696.29
19840.000	800.00	0.0	0.0	578.00	435.00	583.43	0.0	583.44	0.48	0.76	1181.62	626.68
19840.000	800.00	0.0	0.0	578.00	670.00	584.25	0.0	584.25	0.58	0.94	1485.76	832.53
19840.000	800.00	0.0	0.0	578.00	780.00	584.52	0.0	584.53	0.64	1.02	1587.34	975.85
19840.000	800.00	0.0	0.0	578.00	1070.00	585.54	0.0	585.55	0.63	1.14	1961.81	1351.87
21040.000	1200.00	0.0	0.0	579.00	435.00	583.52	0.0	583.53	1.37	0.85	756.88	371.72
21040.000	1200.00	0.0	0.0	579.00	670.00	584.35	0.0	584.36	1.33	0.97	1022.53	581.30
21040.000	1200.00	0.0	0.0	579.00	780.00	584.63	0.0	584.64	1.38	1.03	1115.89	664.21
21040.000	1200.00	0.0	0.0	579.00	1070.00	585.64	0.0	585.65	1.16	1.09	1446.17	992.55
22340.000	1000.00	0.0	0.0	576.60	435.00	583.70	0.0	583.73	2.80	1.54	282.91	259.80
22340.000	1000.00	0.0	0.0	576.60	670.00	584.53	0.0	584.60	4.11	2.02	332.21	330.53
22340.000	1000.00	0.0	0.0	576.60	780.00	584.83	0.0	584.91	4.77	2.23	350.00	357.23
22340.000	1000.00	0.0	0.0	576.60	1070.00	585.81	0.0	585.91	5.62	2.61	410.05	451.48

MOORE BUSINESS FORMS INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
22390.000	50.00	0.0	0.0	577.80	435.00	583.71	0.0	583.76	4.06	1.77	245.98	215.86
22390.000	50.00	0.0	0.0	577.80	670.00	584.55	0.0	584.63	5.36	2.32	288.96	276.73
22390.000	50.00	0.0	0.0	577.80	780.00	584.85	0.0	584.95	6.78	2.56	304.23	299.49
22390.000	50.00	0.0	0.0	577.80	1070.00	585.82	0.0	585.97	8.03	3.02	354.52	377.57
22391.000	10.00	0.0	0.0	577.80	435.00	583.71	0.0	583.76	4.05	1.77	246.18	216.13
22391.000	10.00	0.0	0.0	577.80	670.00	584.55	0.0	584.64	5.84	2.32	289.24	277.17
22391.000	10.00	0.0	0.0	577.80	780.00	584.85	0.0	584.96	6.76	2.56	304.53	299.94
22391.000	10.00	0.0	0.0	577.80	1070.00	585.83	0.0	585.97	8.02	3.02	354.79	377.91
22440.000	50.00	0.0	0.0	577.50	435.00	583.74	0.0	583.78	2.86	1.54	282.79	257.33
22440.000	50.00	0.0	0.0	577.50	670.00	584.61	0.0	584.67	4.10	2.00	334.53	330.73
22440.000	50.00	0.0	0.0	577.50	780.00	584.92	0.0	584.99	4.73	2.21	353.30	358.71
22440.000	50.00	0.0	0.0	577.50	1070.00	585.91	0.0	586.02	5.44	2.58	416.01	458.71
22665.000	200.00	0.0	0.0	578.00	435.00	583.80	0.0	583.86	4.99	1.89	229.82	194.76
22665.000	200.00	0.0	0.0	578.00	670.00	584.69	0.0	584.78	6.86	2.44	274.12	255.90
22665.000	200.00	0.0	0.0	578.00	780.00	585.01	0.0	585.12	7.84	2.69	289.73	278.63
22665.000	200.00	0.0	0.0	578.00	1070.00	586.02	0.0	586.17	9.05	3.15	340.06	355.75
22715.000	100.00	0.0	0.0	577.00	435.00	583.85	0.0	583.93	6.30	2.22	195.16	173.25
22715.000	100.00	0.0	0.0	577.00	670.00	584.75	0.0	584.88	9.05	2.39	231.91	222.71
22715.000	100.00	0.0	0.0	577.00	780.00	585.08	0.0	585.23	10.41	3.18	245.05	241.73
22715.000	100.00	0.0	0.0	577.00	1070.00	586.09	0.0	586.31	12.42	3.74	286.01	303.63
22716.000	1.00	586.90	584.90	577.00	435.00	583.85	0.0	583.93	6.28	2.21	196.43	173.61
22716.000	1.00	586.90	584.90	577.00	670.00	584.75	0.0	584.88	9.02	2.89	232.14	223.05
22716.000	1.00	586.90	584.90	577.00	780.00	585.07	0.0	585.24	25.72	3.28	238.13	153.80
22716.000	1.00	586.90	584.90	577.00	1070.00	586.04	0.0	586.36	48.40	4.49	238.13	153.80
22717.000	26.00	586.90	584.90	577.00	435.00	583.87	0.0	583.94	6.22	2.21	197.07	174.47
22717.000	26.00	586.90	584.90	577.00	670.00	584.77	0.0	584.90	8.91	2.87	233.10	224.41
22717.000	26.00	586.90	584.90	577.00	780.00	585.14	0.0	585.31	25.72	3.28	238.13	153.80
22717.000	26.00	586.90	584.90	577.00	1070.00	586.17	0.0	586.48	48.40	4.49	238.13	153.80
22871.000	1.00	0.0	0.0	577.00	435.00	583.87	0.0	583.94	5.21	2.21	197.12	174.54
22871.000	1.00	0.0	0.0	577.00	670.00	584.78	0.0	584.90	8.91	2.87	233.17	224.51
22871.000	1.00	0.0	0.0	577.00	780.00	585.16	0.0	585.31	10.03	3.14	248.18	246.33
22871.000	1.00	0.0	0.0	577.00	1070.00	586.31	0.0	586.52	11.33	3.63	295.14	317.91
22730.000	15.00	0.0	0.0	578.20	435.00	583.89	0.0	583.96	5.70	2.01	216.17	182.23
22730.000	15.00	0.0	0.0	578.20	670.00	584.82	0.0	584.92	7.46	2.55	262.62	245.34
22730.000	15.00	0.0	0.0	578.20	780.00	585.22	0.0	585.34	8.11	2.76	282.45	273.94
22730.000	15.00	0.0	0.0	578.20	1070.00	586.40	0.0	586.55	8.55	3.12	342.53	365.96
23090.000	350.00	0.0	0.0	578.20	435.00	584.04	0.0	584.10	3.10	1.94	223.81	247.14
23090.000	350.00	0.0	0.0	578.20	670.00	585.02	0.0	585.11	4.04	2.46	272.42	333.47
23090.000	350.00	0.0	0.0	578.20	780.00	585.43	0.0	585.54	4.38	2.66	293.23	372.68
23090.000	350.00	0.0	0.0	578.20	1070.00	586.62	0.0	586.77	4.68	3.02	354.29	494.80
23140.000	50.00	0.0	0.0	577.60	435.00	584.05	0.0	584.13	5.47	2.33	186.94	185.99
23140.000	50.00	0.0	0.0	577.60	670.00	585.02	0.0	585.16	7.67	3.00	223.26	241.89
23140.000	50.00	0.0	0.0	577.60	780.00	585.43	0.0	585.60	8.53	3.26	238.90	267.13
23140.000	50.00	0.0	0.0	577.60	1070.00	586.62	0.0	586.84	9.64	3.76	284.70	344.59

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
23141.000	1.00	587.60	586.20	577.60	435.00	584.05	0.0	584.13	5.49	2.33	186.67	135.59
23141.000	1.00	587.60	586.20	577.60	670.00	585.02	0.0	585.16	7.67	3.00	223.30	241.95
23141.000	1.00	587.60	586.20	577.60	780.00	585.43	0.0	585.50	8.52	3.26	238.92	267.16
* 23141.000	1.00	587.60	586.20	577.60	1070.00	586.61	0.0	586.85	23.58	3.96	270.08	220.34
23142.000	16.00	587.60	586.20	577.60	435.00	584.06	0.0	584.14	5.47	2.33	186.99	136.06
23142.000	16.00	587.60	586.20	577.60	670.00	585.04	0.0	585.18	7.62	2.99	223.77	242.70
23142.000	16.00	587.60	586.20	577.60	780.00	585.45	0.0	585.61	8.47	3.26	239.44	268.01
* 23142.000	16.00	587.60	586.20	577.60	1070.00	586.64	0.0	586.89	23.56	3.96	270.19	220.43
23143.000	1.00	0.0	0.0	577.60	435.00	584.06	0.0	584.14	5.46	2.33	187.03	136.11
23143.000	1.00	0.0	0.0	577.60	670.00	585.04	0.0	585.18	7.62	2.99	223.82	242.77
23143.000	1.00	0.0	0.0	577.60	780.00	585.45	0.0	585.61	8.46	3.26	239.51	268.12
23143.000	1.00	0.0	0.0	577.60	1070.00	586.68	0.0	586.90	9.40	3.73	287.23	349.00
23190.000	50.00	0.0	0.0	577.60	435.00	584.11	0.0	584.17	4.04	1.99	218.30	216.42
23190.000	50.00	0.0	0.0	577.60	670.00	585.12	0.0	585.22	5.30	2.51	267.14	291.02
23190.000	50.00	0.0	0.0	577.60	780.00	585.55	0.0	585.66	5.74	2.70	288.50	325.49
23190.000	50.00	0.0	0.0	577.60	1070.00	586.81	0.0	586.96	5.95	3.02	354.01	438.52
24530.000	1340.00	0.0	0.0	578.50	435.00	585.12	0.0	585.34	26.48	3.70	117.44	84.53
24530.000	1340.00	0.0	0.0	578.50	670.00	586.39	0.0	586.69	29.89	4.35	153.93	122.55
24530.000	1340.00	0.0	0.0	578.50	780.00	586.90	0.0	587.23	31.01	4.59	169.76	140.07
24530.000	1340.00	0.0	0.0	578.50	1070.00	588.19	0.0	588.59	31.78	5.04	212.34	139.80
250.000	185.00	0.0	0.0	578.50	290.00	585.57	0.0	585.65	8.94	2.24	129.75	96.97
250.000	185.00	0.0	0.0	578.50	460.00	586.93	0.0	587.04	10.64	2.70	170.59	140.99
250.000	185.00	0.0	0.0	578.50	530.00	587.48	0.0	587.60	10.81	2.82	188.25	161.21
250.000	185.00	0.0	0.0	578.50	760.00	588.82	0.0	588.98	12.19	3.24	234.37	217.72
300.000	100.00	0.0	0.0	580.10	290.00	585.63	0.0	585.93	48.63	4.39	66.04	41.58
300.000	100.00	0.0	0.0	580.10	460.00	586.97	0.0	587.44	65.73	5.52	83.41	56.74
300.000	100.00	0.0	0.0	580.10	530.00	587.50	0.0	588.03	70.96	5.87	90.29	62.92
300.000	100.00	0.0	0.0	580.10	760.00	588.77	0.0	589.56	94.62	7.11	106.86	78.13
301.000	1.00	589.90	589.90	580.10	290.00	585.62	0.0	585.95	23.09	4.63	62.63	60.35
301.000	1.00	589.90	589.90	580.10	460.00	586.91	0.0	587.50	39.39	6.17	74.58	73.29
301.000	1.00	589.90	589.90	580.10	530.00	587.41	0.0	588.13	49.50	6.77	78.24	75.33
301.000	1.00	589.90	589.90	580.10	760.00	588.51	0.0	589.84	116.08	9.26	82.07	70.54
302.000	36.00	589.90	589.90	580.10	290.00	585.71	0.0	586.04	22.34	4.57	63.51	61.35
302.000	36.00	589.90	589.90	580.10	460.00	587.08	0.0	587.65	38.30	6.06	75.90	74.33
302.000	36.00	589.90	589.90	580.10	530.00	587.62	0.0	588.31	49.10	6.66	79.52	75.63
302.000	36.00	589.90	589.90	580.10	760.00	588.93	0.0	590.26	116.08	9.26	82.07	70.54
303.000	1.00	0.0	0.0	580.10	290.00	585.77	0.0	586.05	45.33	4.28	67.79	43.07
303.000	1.00	0.0	0.0	580.10	460.00	587.26	0.0	587.70	59.38	5.27	87.28	60.21
303.000	1.00	0.0	0.0	580.10	530.00	587.90	0.0	588.38	61.26	5.55	95.56	67.72
303.000	1.00	0.0	0.0	580.10	760.00	589.87	0.0	590.48	68.94	6.27	121.16	91.53
350.000	100.00	0.0	0.0	579.20	290.00	586.21	0.0	586.28	8.26	2.12	136.88	100.93
350.000	100.00	0.0	0.0	579.20	460.00	587.88	0.0	587.97	8.09	2.37	194.08	161.77
350.000	100.00	0.0	0.0	579.20	530.00	588.57	0.0	588.66	7.64	2.41	220.16	191.69
350.000	100.00	0.0	0.0	579.20	760.00	590.69	0.0	590.78	6.11	2.48	306.06	307.40

MOORE BUSINESS FORMS, INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1550.000	1150.00	0.0	0.0	579.90	290.00	587.31	0.0	587.40	11.62	2.37	122.58	85.09
1550.000	1150.00	0.0	0.0	579.90	460.00	588.94	0.0	589.04	10.79	2.59	177.79	140.01
1550.000	1150.00	0.0	0.0	579.90	530.00	589.57	0.0	589.68	10.15	2.63	201.73	166.32
1550.000	1150.00	0.0	0.0	579.90	760.00	591.48	0.0	591.60	8.17	2.74	277.85	265.90
2800.000	1200.00	0.0	0.0	582.20	290.00	588.70	0.0	588.79	11.47	2.40	120.77	85.63
2800.000	1200.00	0.0	0.0	582.20	460.00	590.15	0.0	590.23	9.12	2.46	201.16	152.32
2800.000	1200.00	0.0	0.0	582.20	530.00	590.63	0.0	590.71	7.37	2.35	239.93	195.19
2800.000	1200.00	0.0	0.0	582.20	760.00	592.19	0.0	592.27	4.05	2.05	364.97	377.77
2850.000	100.00	0.0	0.0	582.20	290.00	588.81	0.0	589.06	37.80	4.00	72.47	47.17
2850.000	100.00	0.0	0.0	582.20	460.00	590.17	0.0	590.59	57.00	5.20	88.45	60.93
2850.000	100.00	0.0	0.0	582.20	530.00	590.59	0.0	591.08	63.90	5.61	99.59	66.30
2850.000	100.00	0.0	0.0	582.20	760.00	592.21	0.0	592.41	18.00	3.37	228.97	179.15
2851.000	30.00	590.50	589.60	582.20	290.00	588.92	0.0	589.24	66.44	4.52	64.17	35.58
2851.000	30.00	590.50	589.60	582.20	460.00	590.62	0.0	590.98	46.54	4.81	102.76	67.43
2851.000	30.00	590.50	589.60	582.20	530.00	590.98	0.0	591.29	41.63	4.68	130.75	82.14
2851.000	30.00	590.50	589.60	582.20	760.00	592.32	0.0	592.51	15.80	3.19	238.28	191.18
2900.000	100.00	0.0	0.0	582.30	290.00	589.47	0.0	589.56	13.70	2.52	122.47	78.36
2900.000	100.00	0.0	0.0	582.30	460.00	591.13	0.0	591.19	5.87	2.06	243.86	189.84
2900.000	100.00	0.0	0.0	582.30	530.00	591.42	0.0	591.48	5.92	2.14	266.04	217.76
2900.000	100.00	0.0	0.0	582.30	760.00	592.54	0.0	592.62	4.70	2.15	356.02	350.46
3500.000	550.00	0.0	0.0	582.30	290.00	590.06	0.0	590.12	7.69	2.03	157.49	104.55
3500.000	550.00	0.0	0.0	582.30	460.00	591.42	0.0	591.47	4.44	1.85	266.44	218.28
3500.000	550.00	0.0	0.0	582.30	530.00	591.71	0.0	591.77	4.54	1.93	288.91	248.66
3500.000	550.00	0.0	0.0	582.30	760.00	592.79	0.0	592.86	3.94	2.01	375.50	382.84
3600.000	100.00	0.0	0.0	583.70	290.00	589.96	0.0	590.42	86.93	5.43	53.38	31.10
3600.000	100.00	0.0	0.0	583.70	460.00	591.00	588.36	591.84	146.30	7.34	62.76	38.03
3600.000	100.00	0.0	0.0	583.70	530.00	591.20	588.77	592.18	168.56	8.02	71.98	40.82
3600.000	100.00	0.0	0.0	583.70	760.00	592.71	0.0	593.02	43.58	4.64	177.02	115.12
3601.000	20.00	591.00	589.80	583.70	290.00	590.78	0.0	591.13	63.07	4.78	60.69	36.52
3601.000	20.00	591.00	589.80	583.70	460.00	591.98	0.0	592.18	32.60	3.78	137.27	30.56
3601.000	20.00	591.00	589.80	583.70	530.00	592.18	0.0	592.39	30.58	3.72	153.68	95.84
3601.000	20.00	591.00	589.80	583.70	760.00	593.12	0.0	593.34	16.83	2.97	228.47	185.26
3700.000	100.00	0.0	0.0	583.70	290.00	591.25	0.0	591.30	5.82	1.90	166.31	120.16
3700.000	100.00	0.0	0.0	583.70	460.00	592.24	0.0	592.32	7.00	2.28	216.94	173.88
3700.000	100.00	0.0	0.0	583.70	530.00	592.46	0.0	592.54	7.83	2.47	233.87	189.38
3700.000	100.00	0.0	0.0	583.70	760.00	593.36	0.0	593.46	7.60	2.68	305.76	275.71
4400.000	680.00	0.0	0.0	583.70	290.00	591.60	0.0	591.64	4.42	1.71	184.03	137.99
4400.000	680.00	0.0	0.0	583.70	460.00	592.66	0.0	592.72	5.00	2.02	249.63	205.73
4400.000	680.00	0.0	0.0	583.70	530.00	592.92	0.0	592.98	5.34	2.15	270.07	229.27
4400.000	680.00	0.0	0.0	583.70	760.00	593.81	0.0	593.89	5.35	2.34	341.86	328.68
4500.000	100.00	0.0	0.0	583.70	290.00	591.58	0.0	591.79	33.11	3.77	84.95	50.39
4500.000	100.00	0.0	0.0	583.70	460.00	592.69	0.0	592.83	21.19	3.31	161.22	99.92
4500.000	100.00	0.0	0.0	583.70	530.00	592.95	0.0	593.10	19.41	3.23	181.98	120.30
4500.000	100.00	0.0	0.0	583.70	760.00	593.83	0.0	593.99	13.45	2.86	252.16	207.27

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOK*S	VCH	AREA	.01K
4501.000	20.30	591.30	590.30	583.70	290.00	591.90	0.0	592.02	19.49	2.97	115.90	65.69
4501.000	20.30	591.30	590.30	583.70	460.00	592.89	0.0	592.99	10.75	2.39	195.32	140.28
4501.000	20.30	591.30	590.30	583.70	530.00	593.15	0.0	593.26	10.23	2.38	215.90	165.69
4501.000	20.30	591.30	590.30	583.70	760.00	594.02	0.0	594.16	8.11	2.25	285.54	266.82
4600.000	100.00	0.0	0.0	584.50	290.00	592.06	0.0	592.10	4.09	1.63	190.56	143.41
4600.000	100.00	0.0	0.0	584.50	460.00	593.01	0.0	593.07	5.10	2.01	246.23	203.71
4600.000	100.00	0.0	0.0	584.50	530.00	593.27	0.0	593.34	5.44	2.14	267.38	227.15
4600.000	100.00	0.0	0.0	584.50	760.00	594.16	0.0	594.24	5.55	2.36	337.87	322.64
4950.000	350.00	0.0	0.0	584.50	290.00	592.20	0.0	592.23	3.48	1.53	197.40	155.40
4950.000	350.00	0.0	0.0	584.50	460.00	593.18	0.0	593.23	4.14	1.85	259.68	226.11
4950.000	350.00	0.0	0.0	584.50	530.00	593.45	0.0	593.51	4.38	1.96	281.67	253.37
4950.000	350.00	0.0	0.0	584.50	760.00	594.34	0.0	594.41	4.51	2.17	352.48	357.76
5050.000	100.00	0.0	0.0	585.30	290.00	592.04	0.0	592.44	73.84	5.09	56.92	33.75
5050.000	100.00	0.0	0.0	585.30	460.00	592.76	0.0	593.58	141.58	7.24	63.51	38.66
5050.000	100.00	0.0	0.0	585.30	530.00	592.89	0.0	593.94	179.44	8.19	64.72	39.57
5050.000	100.00	0.0	0.0	585.30	760.00	593.13	0.0	595.14	341.76	11.38	66.77	41.11
5051.000	21.00	594.40	591.50	585.30	290.00	592.08	0.0	592.78	237.98	6.72	43.15	18.80
5051.000	21.00	594.40	591.50	585.30	460.00	594.40	0.0	594.94	85.30	5.88	78.21	49.80
5051.000	21.00	594.40	591.50	585.30	530.00	594.47	0.0	595.17	110.82	6.72	78.91	50.35
5051.000	21.00	594.40	591.50	585.30	760.00	594.31	0.0	595.81	238.33	9.81	77.45	49.23
5150.000	100.00	0.0	0.0	585.40	290.00	592.99	0.0	593.05	6.85	2.04	151.80	110.81
5150.000	100.00	0.0	0.0	585.40	460.00	595.04	0.0	595.08	3.63	1.80	273.93	241.31
5150.000	100.00	0.0	0.0	585.40	530.00	595.30	0.0	595.35	3.91	1.92	294.58	268.05
5150.000	100.00	0.0	0.0	585.40	760.00	596.02	0.0	596.09	4.64	2.23	351.82	352.98
5250.000	100.00	0.0	0.0	585.40	290.00	593.04	0.0	593.25	30.94	3.69	78.69	52.13
5250.000	100.00	0.0	0.0	585.40	460.00	595.06	0.0	595.20	18.44	3.22	164.37	107.13
5250.000	100.00	0.0	0.0	585.40	530.00	595.33	0.0	595.46	17.39	3.19	185.60	127.09
5250.000	100.00	0.0	0.0	585.40	760.00	596.06	0.0	596.21	14.74	3.11	243.74	196.63
5251.000	22.00	593.80	592.50	585.40	290.00	593.45	0.0	593.63	26.89	3.49	83.20	55.93
5251.000	22.00	593.80	592.50	585.40	460.00	595.28	0.0	595.37	9.66	2.37	201.32	147.97
5251.000	22.00	593.80	592.50	585.40	530.00	595.54	0.0	595.64	9.25	2.36	222.47	174.28
5251.000	22.00	593.80	592.50	585.40	760.00	596.28	0.0	596.42	8.51	2.38	281.91	250.59
5350.000	100.00	0.0	0.0	585.20	290.00	593.72	0.0	593.75	3.32	1.54	199.81	159.19
5350.000	100.00	0.0	0.0	585.20	460.00	595.39	0.0	595.42	2.21	1.49	323.03	309.21
5350.000	100.00	0.0	0.0	585.20	530.00	595.66	0.0	595.70	2.38	1.58	345.25	343.71
5350.000	100.00	0.0	0.0	585.20	760.00	596.43	0.0	596.49	2.87	1.85	406.39	448.88
5550.000	200.00	0.0	0.0	586.10	290.00	593.80	0.0	593.85	6.28	1.96	158.35	115.74
5550.000	200.00	0.0	0.0	586.10	460.00	595.44	0.0	595.49	3.72	1.77	274.37	238.48
5550.000	200.00	0.0	0.0	586.10	530.00	595.72	0.0	595.77	3.87	1.86	296.30	269.49
5550.000	200.00	0.0	0.0	586.10	760.00	596.49	0.0	596.56	4.24	2.10	358.57	368.98
5650.000	100.00	0.0	0.0	586.10	290.00	593.81	0.0	594.11	51.21	4.39	66.12	40.53
5650.000	100.00	0.0	0.0	586.10	460.00	595.41	0.0	595.69	47.91	4.55	117.04	66.46
5650.000	100.00	0.0	0.0	586.10	530.00	595.71	0.0	595.95	39.41	4.21	140.51	84.43
5650.000	100.00	0.0	0.0	586.10	760.00	596.49	0.0	596.74	25.29	3.56	203.10	151.12

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
5651.000	20.50	594.90	592.20	586.10	290.00	594.75	0.0	594.99	38.17	3.89	74.59	46.94
5651.000	20.50	594.90	592.20	586.10	460.00	595.93	0.0	596.07	20.90	3.11	158.36	100.87
5651.000	20.50	594.90	592.20	586.10	530.00	596.17	0.0	596.32	19.21	3.04	177.55	120.93
5651.000	20.50	594.90	592.20	586.10	760.00	596.83	0.0	597.03	16.40	2.93	230.57	187.67
5750.000	100.00	0.0	0.0	586.70	290.00	595.09	0.0	595.12	2.95	1.44	211.24	171.85
5750.000	100.00	0.0	0.0	586.70	460.00	596.13	0.0	596.17	2.96	1.64	293.92	257.41
5750.000	100.00	0.0	0.0	586.70	530.00	596.38	0.0	596.42	3.21	1.75	313.75	295.93
5750.000	100.00	0.0	0.0	586.70	760.00	597.08	0.0	597.14	3.88	2.06	369.92	386.01
5850.000	100.00	0.0	0.0	587.30	290.00	595.08	0.0	595.22	24.96	3.18	105.87	58.05
5850.000	100.00	0.0	0.0	587.30	460.00	596.13	0.0	596.24	10.60	2.26	190.63	141.29
5850.000	100.00	0.0	0.0	587.30	530.00	596.38	0.0	596.49	10.07	2.25	210.26	167.03
5850.000	100.00	0.0	0.0	587.30	760.00	597.07	0.0	597.23	9.24	2.27	265.55	250.06
5851.000	20.50	594.50	593.40	587.30	290.00	595.34	0.0	595.43	15.53	2.57	126.99	73.60
5851.000	20.50	594.50	593.40	587.30	460.00	596.29	0.0	596.38	8.57	2.06	202.92	157.15
5851.000	20.50	594.50	593.40	587.30	530.00	596.54	0.0	596.64	8.23	2.06	222.93	184.73
5851.000	20.50	594.50	593.40	587.30	760.00	597.25	0.0	597.40	7.67	2.09	280.21	274.48
6000.000	150.00	0.0	0.0	587.50	290.00	595.58	0.0	595.85	45.92	4.21	69.52	42.80
6000.000	150.00	0.0	0.0	587.50	460.00	596.44	0.0	596.63	31.33	3.72	136.71	82.18
6000.000	150.00	0.0	0.0	587.50	530.00	596.68	0.0	596.88	27.71	3.57	156.20	100.69
6000.000	150.00	0.0	0.0	587.50	760.00	597.37	0.0	597.60	20.71	3.25	212.15	167.02
6001.000	20.50	595.60	593.40	587.50	290.00	596.02	0.0	596.16	25.38	3.24	104.10	57.57
6001.000	20.50	595.60	593.40	587.50	460.00	596.74	0.0	596.88	18.77	2.95	161.51	106.17
6001.000	20.50	595.60	593.40	587.50	530.00	596.96	0.0	597.11	17.87	2.93	178.91	125.39
6001.000	20.50	595.60	593.40	587.50	760.00	597.63	0.0	597.83	15.00	2.81	233.04	196.23
6100.000	100.00	0.0	0.0	589.50	290.00	596.24	0.0	596.37	16.61	2.85	108.47	71.15
6100.000	100.00	0.0	0.0	589.50	460.00	596.91	0.0	597.10	22.91	3.59	143.22	96.10
6100.000	100.00	0.0	0.0	589.50	530.00	597.13	0.0	597.34	25.15	3.84	154.54	105.68
6100.000	100.00	0.0	0.0	589.50	760.00	597.79	0.0	598.05	28.24	4.38	201.96	143.02
6750.000	700.00	0.0	0.0	589.50	290.00	596.95	0.0	597.02	5.95	2.29	144.65	118.92
6750.000	700.00	0.0	0.0	589.50	460.00	597.83	0.0	597.93	7.12	2.75	203.19	172.35
6750.000	700.00	0.0	0.0	589.50	530.00	598.11	0.0	598.22	7.42	2.90	225.77	194.59
6750.000	700.00	0.0	0.0	589.50	760.00	598.89	0.0	599.03	8.17	3.31	288.96	265.94
6850.000	100.00	0.0	0.0	589.60	290.00	596.96	0.0	597.20	44.41	4.13	84.89	43.52
6850.000	100.00	0.0	0.0	589.60	460.00	597.93	0.0	598.05	21.13	3.11	180.49	100.06
6850.000	100.00	0.0	0.0	589.60	530.00	598.22	0.0	598.33	17.94	2.93	209.63	125.13
6850.000	100.00	0.0	0.0	589.60	760.00	599.03	0.0	599.14	13.18	2.67	290.04	209.32
6851.000	21.00	596.60	595.70	589.60	290.00	597.33	0.0	597.45	24.05	3.15	120.14	59.13
6851.000	21.00	596.60	595.70	589.60	460.00	598.13	0.0	598.22	15.55	2.71	200.17	116.65
6851.000	21.00	596.60	595.70	589.60	530.00	598.39	0.0	598.48	14.24	2.65	225.90	140.45
6851.000	21.00	596.60	595.70	589.60	760.00	599.10	0.0	599.20	12.20	2.59	297.03	217.60
6950.000	100.00	0.0	0.0	589.00	290.00	597.51	0.0	597.54	4.46	1.70	187.98	137.25
6950.000	100.00	0.0	0.0	589.00	460.00	598.25	0.0	598.31	6.02	2.10	233.55	187.52
6950.000	100.00	0.0	0.0	589.00	530.00	598.50	0.0	598.57	6.57	2.24	253.11	206.78
6950.000	100.00	0.0	0.0	589.00	760.00	599.20	0.0	599.30	7.50	2.57	322.86	277.51

MOORE BUSINESS FORMS, INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS.	EG	10K*S	VCH	AREA	.01K
7375.000	420.00	0.0	0.0	591.50	290.00	597.71	0.0	597.77	5.98	2.09	138.83	118.59
7375.000	420.00	0.0	0.0	591.50	460.00	598.52	0.0	598.64	8.47	2.72	169.19	158.10
7375.000	420.00	0.0	0.0	591.50	530.00	598.80	0.0	598.93	9.44	2.95	179.73	172.49
7375.000	420.00	0.0	0.0	591.50	760.00	599.55	0.0	599.75	12.53	3.63	209.31	214.68
7475.000	100.00	0.0	0.0	590.90	290.00	597.75	0.0	597.95	25.81	3.53	82.12	57.09
7475.000	100.00	0.0	0.0	590.90	460.00	598.56	0.0	598.93	46.44	4.93	93.28	67.50
7475.000	100.00	0.0	0.0	590.90	530.00	598.82	0.0	599.28	55.70	5.46	96.99	71.01
7475.000	100.00	0.0	0.0	590.90	760.00	599.52	0.0	600.31	89.31	7.12	106.80	80.42
7476.000	1.00	601.80	602.20	590.90	290.00	597.75	0.0	597.95	1.75	3.66	79.14	219.23
7476.000	1.00	601.80	602.20	590.90	460.00	598.53	0.0	598.96	3.55	5.26	87.39	244.11
7476.000	1.00	601.80	602.20	590.90	530.00	598.78	0.0	599.32	4.57	5.90	89.76	248.05
7476.000	1.00	601.80	602.20	590.90	760.00	599.41	0.0	600.42	9.51	8.06	94.33	246.51
7477.000	86.00	601.80	602.20	590.90	290.00	597.76	0.0	597.97	1.75	3.66	79.21	219.47
7477.000	86.00	601.80	602.20	590.90	460.00	598.56	0.0	598.99	3.53	5.24	87.75	244.73
7477.000	86.00	601.80	602.20	590.90	530.00	598.83	0.0	599.36	4.54	5.88	90.17	248.64
7477.000	86.00	601.80	602.20	590.90	760.00	599.51	0.0	600.51	9.62	8.02	94.80	245.06
7478.000	1.00	0.0	0.0	590.90	290.00	597.78	0.0	597.97	1.47	3.52	82.45	239.13
7478.000	1.00	0.0	0.0	590.90	460.00	598.64	0.0	599.01	2.59	4.87	94.48	285.97
7478.000	1.00	0.0	0.0	590.90	530.00	598.94	0.0	599.39	3.07	5.37	98.70	302.70
7478.000	1.00	0.0	0.0	590.90	760.00	599.87	0.0	600.59	4.58	6.80	111.78	355.17
7575.000	100.00	0.0	0.0	591.10	290.00	597.98	0.0	598.04	9.67	2.02	143.38	93.28
7575.000	100.00	0.0	0.0	591.10	460.00	599.04	0.0	599.14	12.59	2.51	183.15	129.64
7575.000	100.00	0.0	0.0	591.10	530.00	599.44	0.0	599.55	13.25	2.66	199.07	145.63
7575.000	100.00	0.0	0.0	591.10	760.00	600.69	0.0	600.84	13.79	3.02	251.62	204.63

MOORE BUSINESS FORMS INC 27

KOCHVILLE DRAIN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFHSX	DIFKWS	TOPWID	XLCH
13340.000	510.00	579.84	0.0	0.0	-1.16	54.27	0.0
13340.000	790.00	580.69	0.85	0.0	-0.31	63.62	0.0
13340.000	910.00	581.00	0.31	0.0	0.0	67.00	0.0
13340.000	1270.00	581.70	0.70	0.0	0.70	69.50	0.0
14530.000	510.00	580.82	0.0	0.98	0.0	78.88	1190.00
14530.000	790.00	581.81	0.99	1.11	0.0	83.55	1190.00
14530.000	910.00	582.16	0.35	1.16	0.0	84.44	1190.00
14530.000	1270.00	583.03	0.87	1.33	0.0	86.62	1190.00
14580.000	510.00	580.80	0.0	-0.02	0.0	46.33	50.00
14580.000	790.00	581.76	0.96	-0.04	0.0	49.26	50.00
14580.000	910.00	582.11	0.34	-0.05	0.0	48.58	50.00
14580.000	1270.00	582.94	0.84	-0.09	0.0	49.62	50.00
14581.000	510.00	580.81	0.0	0.01	0.0	46.35	10.00
14581.000	790.00	581.77	0.97	0.01	0.0	48.26	10.00
14581.000	910.00	582.12	0.34	0.01	0.0	48.58	10.00
14581.000	1270.00	582.96	0.84	0.01	0.0	49.63	10.00
14630.000	510.00	580.89	0.0	0.08	0.0	77.60	50.00
14630.000	790.00	581.90	1.01	0.13	0.0	83.28	50.00
14630.000	910.00	582.27	0.37	0.15	0.0	84.47	50.00
14630.000	1270.00	583.17	0.91	0.22	0.0	87.43	50.00
16240.000	510.00	581.21	0.0	0.32	0.0	115.03	1610.00
16240.000	790.00	582.27	1.06	0.37	0.0	118.20	1610.00
16240.000	910.00	582.66	0.38	0.39	0.0	119.35	1610.00
16240.000	1270.00	583.62	0.97	0.45	0.0	122.26	1610.00
17240.000	510.00	581.44	0.0	0.23	0.0	88.16	900.00
17240.000	790.00	582.49	1.05	0.22	0.0	91.68	900.00
17240.000	910.00	582.87	0.38	0.21	0.0	92.99	900.00
17240.000	1270.00	583.84	0.97	0.22	0.0	96.28	900.00
17290.000	510.00	581.58	0.0	0.14	0.0	70.00	150.00
17290.000	790.00	582.59	1.02	0.10	0.0	70.00	150.00
17290.000	910.00	582.97	0.37	0.10	0.0	70.00	150.00
17290.000	1270.00	583.93	0.96	0.08	0.0	70.00	150.00
17291.000	510.00	581.59	0.0	0.02	0.0	70.00	9.00
17291.000	790.00	582.61	1.02	0.02	0.0	70.00	9.00
17291.000	910.00	582.99	0.38	0.02	0.0	70.00	9.00
17291.000	1270.00	584.10	1.11	0.17	0.0	70.00	9.00
17340.000	510.00	581.73	0.0	0.13	0.0	148.90	100.00
17340.000	790.00	582.77	1.04	0.16	0.0	150.00	100.00
17340.000	910.00	583.16	0.39	0.17	0.0	150.00	100.00
17340.000	1270.00	584.30	1.14	0.20	0.0	150.00	100.00
17415.000	510.00	581.89	0.0	0.17	0.0	72.33	600.00
17415.000	790.00	582.91	1.02	0.14	0.0	75.43	600.00
17415.000	910.00	583.30	0.38	0.14	0.0	76.60	600.00
17415.000	1270.00	584.41	1.12	0.11	0.0	101.60	600.00

MOORE BUSINESS FORMS INC 27

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	17465.000	510.00	582.26	0.0	0.37	0.0	60.83	100.00
*	17465.000	790.00	582.73	0.47	-0.18	0.0	71.80	100.00
	17465.000	910.00	583.11	0.38	-0.19	0.0	80.00	100.00
	17465.000	1270.00	584.33	1.22	-0.08	0.0	80.00	100.00
	17466.000	510.00	582.69	0.0	0.43	0.0	71.70	5.00
	17466.000	790.00	583.24	0.55	0.51	0.0	80.00	5.00
	17466.000	910.00	583.27	0.03	0.16	0.0	80.00	5.00
	17466.000	1270.00	584.35	1.08	0.02	0.0	80.00	5.00
	17467.000	510.00	583.10	0.0	0.41	0.0	76.10	44.00
	17467.000	790.00	583.72	0.62	0.48	0.0	76.44	44.00
	17467.000	910.00	583.90	0.18	0.63	0.0	76.53	44.00
	17467.000	1270.00	584.77	0.87	0.43	0.0	77.00	44.00
	17468.000	510.00	583.10	0.0	0.00	0.0	76.11	5.00
	17468.000	790.00	583.73	0.62	0.00	0.0	76.44	5.00
	17468.000	910.00	583.90	0.18	0.00	0.0	76.54	5.00
	17468.000	1270.00	584.77	0.87	0.00	0.0	77.00	5.00
	17515.000	510.00	583.12	0.0	0.02	0.0	72.05	70.00
	17515.000	790.00	583.76	0.64	0.03	0.0	75.06	70.00
	17515.000	910.00	583.94	0.18	0.04	0.0	75.97	70.00
	17515.000	1270.00	584.82	0.88	0.05	0.0	80.18	70.00
	17600.000	510.00	583.12	0.0	-0.00	0.0	46.00	70.00
	17600.000	790.00	583.75	0.63	-0.01	0.0	46.00	70.00
	17600.000	910.00	583.92	0.18	-0.02	0.0	46.00	70.00
	17600.000	1270.00	584.79	0.87	-0.03	0.0	46.00	70.00
	17601.000	510.00	583.12	0.0	0.0	0.0	46.00	1.00
	17601.000	790.00	583.75	0.63	0.00	0.0	46.00	1.00
	17601.000	910.00	583.92	0.18	0.00	0.0	46.00	1.00
	17601.000	1270.00	584.79	0.87	0.00	0.0	46.00	1.00
	17602.000	510.00	583.13	0.0	0.01	0.0	46.00	67.50
	17602.000	790.00	583.76	0.64	0.02	0.0	46.00	67.50
	17602.000	910.00	583.95	0.18	0.02	0.0	46.00	67.50
	17602.000	1270.00	584.82	0.87	0.03	0.0	46.00	67.50
	17603.000	510.00	583.13	0.0	0.0	0.0	46.00	1.00
	17603.000	790.00	583.76	0.64	0.00	0.0	46.00	1.00
	17603.000	910.00	583.95	0.18	0.0	0.0	46.00	1.00
	17603.000	1270.00	584.82	0.88	0.00	0.0	46.00	1.00
	17665.000	510.00	583.13	0.0	0.00	0.0	46.00	30.00
	17665.000	790.00	583.77	0.64	0.01	0.0	46.00	30.00
	17665.000	910.00	583.96	0.18	0.01	0.0	46.00	30.00
	17665.000	1270.00	584.83	0.88	0.01	0.0	46.00	30.00
	17666.000	510.00	583.13	0.0	0.0	0.0	46.00	1.00
	17666.000	790.00	583.77	0.64	0.00	0.0	46.00	1.00
	17666.000	910.00	583.96	0.18	0.00	0.0	46.00	1.00
	17666.000	1270.00	584.83	0.88	0.00	0.0	46.00	1.00

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
17667.000	510.00	583.14	0.0	0.01	0.0	46.00	67.50
17667.000	790.00	583.79	0.65	0.02	0.0	46.00	67.50
17667.000	910.00	583.98	0.19	0.02	0.0	46.00	67.50
17667.000	1270.00	584.86	0.39	0.03	0.0	46.00	67.50
17668.000	510.00	583.14	0.0	0.0	0.0	46.00	1.00
17668.000	790.00	583.79	0.65	0.00	0.0	46.00	1.00
17668.000	910.00	583.98	0.19	0.00	0.0	46.00	1.00
17668.000	1270.00	584.86	0.89	0.00	0.0	46.00	1.00
17715.000	510.00	583.21	0.0	0.07	0.0	81.10	100.00
17715.000	790.00	583.92	0.71	0.12	0.0	83.66	100.00
17715.000	910.00	584.13	0.22	0.16	0.0	84.46	100.00
17715.000	1270.00	585.10	0.96	0.23	0.0	121.86	100.00
17915.000	435.00	583.23	0.0	0.03	0.0	81.19	200.00
17915.000	670.00	583.96	0.72	0.04	0.0	83.82	200.00
17915.000	780.00	584.19	0.23	0.05	0.0	84.64	200.00
17915.000	1070.00	585.16	0.98	0.07	0.0	137.57	200.00
18940.000	435.00	583.35	0.0	0.11	0.0	77.96	1200.00
18940.000	670.00	584.13	0.78	0.17	0.0	100.31	1200.00
18940.000	780.00	584.39	0.26	0.20	0.0	124.26	1200.00
18940.000	1070.00	585.39	1.00	0.22	0.0	216.52	1200.00
19840.000	435.00	583.43	0.0	0.08	0.0	370.00	800.00
19840.000	670.00	584.25	0.81	0.12	0.0	370.00	800.00
19840.000	780.00	584.52	0.28	0.13	0.0	370.00	800.00
19840.000	1070.00	585.54	1.01	0.15	0.0	370.00	800.00
21040.000	435.00	583.52	0.0	0.09	0.0	324.90	1200.00
21040.000	670.00	584.35	0.82	0.10	0.0	326.81	1200.00
21040.000	780.00	584.63	0.29	0.11	0.0	327.49	1200.00
21040.000	1070.00	585.64	1.00	0.10	0.0	329.85	1200.00
22340.000	435.00	583.70	0.0	0.17	0.0	57.85	1000.00
22340.000	670.00	584.53	0.84	0.19	0.0	59.71	1000.00
22340.000	780.00	584.83	0.30	0.20	0.0	60.36	1000.00
22340.000	1070.00	585.81	0.98	0.17	0.0	62.52	1000.00
22390.000	435.00	583.71	0.0	0.01	0.0	50.91	50.00
22390.000	670.00	584.55	0.84	0.01	0.0	51.16	50.00
22390.000	780.00	584.85	0.30	0.02	0.0	51.25	50.00
22390.000	1070.00	585.82	0.98	0.02	0.0	51.66	50.00
22391.000	435.00	583.71	0.0	0.00	0.0	50.91	10.00
22391.000	670.00	584.55	0.84	0.01	0.0	51.16	10.00
22391.000	780.00	584.85	0.30	0.01	0.0	51.25	10.00
22391.000	1070.00	585.83	0.98	0.01	0.0	51.69	10.00
22440.000	435.00	583.74	0.0	0.03	0.0	58.50	50.00
22440.000	670.00	584.61	0.86	0.05	0.0	60.36	50.00
22440.000	780.00	584.92	0.31	0.06	0.0	60.93	50.00
22440.000	1070.00	585.91	1.00	0.08	0.0	67.52	50.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
22665.000	435.00	583.80	0.0	0.06	0.0	50.00	200.00
22665.000	670.00	584.69	0.89	0.08	0.0	50.00	200.00
22665.000	780.00	585.01	0.32	0.09	0.0	50.00	200.00
22665.000	1070.00	586.02	1.01	0.10	0.0	50.00	200.00
22715.000	435.00	583.85	0.0	0.05	0.0	39.42	100.00
22715.000	670.00	584.75	0.90	0.06	0.0	39.88	100.00
22715.000	780.00	585.08	0.33	0.07	0.0	40.05	100.00
22715.000	1070.00	586.09	1.01	0.07	0.0	40.58	100.00
22716.000	435.00	583.85	0.0	0.00	0.0	39.42	1.00
22716.000	670.00	584.75	0.90	0.00	0.0	39.89	1.00
22716.000	780.00	585.07	0.32	-0.00	0.0	40.06	1.00
22716.000	1070.00	586.04	0.97	-0.05	0.0	40.56	1.00
22717.000	435.00	583.87	0.0	0.02	0.0	39.43	26.00
22717.000	670.00	584.77	0.91	0.02	0.0	39.90	26.00
22717.000	780.00	585.14	0.37	0.07	0.0	40.08	26.00
22717.000	1070.00	586.17	1.03	0.13	0.0	40.62	26.00
22871.000	435.00	583.87	0.0	0.00	0.0	39.43	1.00
22871.000	670.00	584.78	0.91	0.00	0.0	39.90	1.00
22871.000	780.00	585.16	0.38	0.02	0.0	40.10	1.00
22871.000	1070.00	586.31	1.15	0.14	0.0	40.70	1.00
22730.000	435.00	583.89	0.0	0.03	0.0	48.98	15.00
22730.000	670.00	584.82	0.93	0.05	0.0	49.98	15.00
22730.000	780.00	585.22	0.40	0.06	0.0	50.40	15.00
22730.000	1070.00	586.40	1.18	0.08	0.0	51.54	15.00
23090.000	435.00	584.04	0.0	0.15	0.0	49.14	350.00
23090.000	670.00	585.02	0.98	0.20	0.0	50.19	350.00
23090.000	780.00	585.43	0.41	0.21	0.0	50.63	350.00
23090.000	1070.00	586.62	1.19	0.23	0.0	51.73	350.00
23140.000	435.00	584.05	0.0	0.01	0.0	37.20	50.00
23140.000	670.00	585.02	0.97	0.00	0.0	37.93	50.00
23140.000	780.00	585.43	0.41	0.00	0.0	38.23	50.00
23140.000	1070.00	586.62	1.18	-0.01	0.0	39.12	50.00
23141.000	435.00	584.05	0.0	0.00	0.0	37.20	1.00
23141.000	670.00	585.02	0.98	0.00	0.0	37.93	1.00
23141.000	780.00	585.43	0.41	0.00	0.0	38.23	1.00
* 23141.000	1070.00	586.61	1.17	-0.01	0.0	39.11	1.00
23142.000	435.00	584.06	0.0	0.01	0.0	37.21	16.00
23142.000	670.00	585.04	0.98	0.01	0.0	37.94	16.00
23142.000	780.00	585.45	0.41	0.01	0.0	38.24	16.00
* 23142.000	1070.00	586.64	1.20	0.04	0.0	39.13	16.00
23143.000	435.00	584.06	0.0	0.00	0.0	37.21	1.00
23143.000	670.00	585.04	0.98	0.00	0.0	37.94	1.00
23143.000	780.00	585.45	0.41	0.00	0.0	38.24	1.00
23143.000	1070.00	586.68	1.23	0.04	0.0	39.16	1.00

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
23190.000	435.00	584.11	0.0	0.05	0.0	47.07	50.00
23190.000	670.00	585.12	1.01	0.09	0.0	49.44	50.00
23190.000	780.00	585.55	0.43	0.10	0.0	50.45	50.00
23190.000	1070.00	586.31	1.26	0.13	0.0	52.82	50.00
24530.000	435.00	585.12	0.0	1.01	0.0	27.28	1340.00
24530.000	670.00	586.39	1.27	1.27	0.0	30.30	1340.00
24530.000	780.00	586.90	0.51	1.35	0.0	31.52	1340.00
24530.000	1070.00	588.19	1.29	1.38	0.0	34.60	1340.00
250.000	290.00	585.57	0.0	0.44	0.0	28.33	185.00
250.000	460.00	586.93	1.36	0.54	0.0	31.58	185.00
250.000	530.00	587.48	0.55	0.57	0.0	32.89	185.00
250.000	760.00	588.82	1.34	0.63	0.0	35.57	185.00
300.000	290.00	585.63	0.0	0.06	0.0	13.00	100.00
300.000	460.00	586.97	1.34	0.04	0.0	13.00	100.00
300.000	530.00	587.50	0.53	0.02	0.0	13.00	100.00
300.000	760.00	588.77	1.28	-0.05	0.0	13.00	100.00
301.000	290.00	585.62	0.0	-0.01	0.0	13.00	1.00
301.000	460.00	586.91	1.29	-0.05	0.0	13.00	1.00
301.000	530.00	587.41	0.50	-0.08	0.0	13.00	1.00
301.000	760.00	588.51	1.10	-0.26	0.0	13.00	1.00
302.000	290.00	585.71	0.0	0.09	0.0	13.00	36.00
302.000	460.00	587.08	1.37	0.17	0.0	13.00	36.00
302.000	530.00	587.62	0.54	0.21	0.0	13.00	36.00
302.000	760.00	588.93	1.31	0.42	0.0	13.00	36.00
303.000	290.00	585.77	0.0	0.05	0.0	13.00	1.00
303.000	460.00	587.26	1.50	0.19	0.0	13.00	1.00
303.000	530.00	587.90	0.64	0.28	0.0	13.00	1.00
303.000	760.00	589.87	1.97	0.95	0.0	13.00	1.00
350.000	290.00	586.21	0.0	0.44	0.0	31.45	100.00
350.000	460.00	587.88	1.68	0.62	0.0	36.78	100.00
350.000	530.00	588.57	0.69	0.67	0.0	38.97	100.00
350.000	760.00	590.69	2.11	0.81	0.0	41.00	100.00
1550.000	290.00	587.31	0.0	1.11	0.0	30.90	1150.00
1550.000	460.00	588.94	1.63	1.06	0.0	36.95	1150.00
1550.000	530.00	589.57	0.63	1.00	0.0	38.94	1150.00
1550.000	760.00	591.48	1.91	0.79	0.0	40.00	1150.00
2800.000	290.00	588.70	0.0	1.38	0.0	28.97	1200.00
2800.000	460.00	590.15	1.45	1.21	0.0	80.00	1200.00
2800.000	530.00	590.63	0.48	1.06	0.0	80.00	1200.00
2800.000	760.00	592.19	1.57	0.71	0.0	80.00	1200.00
2850.000	290.00	589.81	0.0	0.11	0.0	11.80	100.00
2850.000	460.00	590.17	1.36	0.02	0.0	11.80	100.00
2850.000	530.00	590.59	0.42	-0.04	0.0	80.00	100.00
2850.000	760.00	592.21	1.62	0.01	0.0	80.00	100.00

MOORE BUSINESS FORMS, INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
2851.000	290.00	588.92	0.0	0.11	0.0	11.80	30.00
2851.000	460.00	590.62	1.70	0.46	0.0	80.00	30.00
2851.000	530.00	590.98	0.36	0.39	0.0	80.00	30.00
2851.000	760.00	592.32	1.34	0.12	0.0	80.00	30.00
2900.000	290.00	589.47	0.0	0.55	0.0	55.99	100.00
2900.000	460.00	591.13	1.67	0.51	0.0	80.00	100.00
2900.000	530.00	591.42	0.29	0.44	0.0	80.00	100.00
2900.000	760.00	592.54	1.12	0.22	0.0	80.00	100.00
3500.000	290.00	590.06	0.0	0.59	0.0	75.51	550.00
3500.000	460.00	591.42	1.36	0.29	0.0	80.00	550.00
3500.000	530.00	591.71	0.29	0.29	0.0	80.00	550.00
3500.000	760.00	592.79	1.07	0.24	0.0	80.00	550.00
3600.000	290.00	589.96	0.0	-0.10	0.0	9.00	100.00
3600.000	460.00	591.00	1.04	-0.42	0.0	44.52	100.00
3600.000	530.00	591.20	0.20	-0.51	0.0	47.93	100.00
3600.000	760.00	592.71	1.51	-0.07	0.0	80.00	100.00
3601.000	290.00	590.78	0.0	0.81	0.0	9.00	20.00
3601.000	460.00	591.98	1.20	0.98	0.0	80.00	20.00
3601.000	530.00	592.18	0.21	0.98	0.0	80.00	20.00
3601.000	760.00	593.12	0.94	0.40	0.0	80.00	20.00
3700.000	290.00	591.25	0.0	0.47	0.0	49.70	100.00
3700.000	460.00	592.24	1.00	0.27	0.0	68.26	100.00
3700.000	530.00	592.46	0.21	0.28	0.0	80.00	100.00
3700.000	760.00	593.36	0.90	0.24	0.0	80.00	100.00
4400.000	290.00	591.60	0.0	0.35	0.0	50.19	680.00
4400.000	460.00	592.66	1.06	0.42	0.0	80.00	680.00
4400.000	530.00	592.92	0.25	0.46	0.0	80.00	680.00
4400.000	760.00	593.81	0.89	0.45	0.0	80.00	680.00
4500.000	290.00	591.58	0.0	-0.03	0.0	51.38	100.00
4500.000	460.00	592.69	1.12	0.03	0.0	80.00	100.00
4500.000	530.00	592.95	0.26	0.04	0.0	80.00	100.00
4500.000	760.00	593.83	0.88	0.02	0.0	80.00	100.00
4501.000	290.00	591.90	0.0	0.32	0.0	80.00	20.30
4501.000	460.00	592.89	0.99	0.20	0.0	80.00	20.30
4501.000	530.00	593.15	0.26	0.20	0.0	80.00	20.30
4501.000	760.00	594.02	0.87	0.19	0.0	80.00	20.30
4600.000	290.00	592.06	0.0	0.17	0.0	50.23	100.00
4600.000	460.00	593.01	0.95	0.12	0.0	80.00	100.00
4600.000	530.00	593.27	0.26	0.13	0.0	80.00	100.00
4600.000	760.00	594.16	0.88	0.14	0.0	80.00	100.00
4950.000	290.00	592.20	0.0	0.14	0.0	50.43	350.00
4950.000	460.00	593.18	0.98	0.17	0.0	80.00	350.00
4950.000	530.00	593.45	0.27	0.18	0.0	80.00	350.00
4950.000	760.00	594.34	0.89	0.18	0.0	80.00	350.00

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
5050.000	290.00	592.04	0.0	-0.16	0.0	9.00	100.00
5050.000	460.00	592.76	0.73	-0.41	0.0	9.00	100.00
5050.000	530.00	592.39	0.13	-0.56	0.0	9.00	100.00
5050.000	760.00	593.13	0.23	-1.21	0.0	9.00	100.00
5051.000	290.00	592.08	0.0	0.05	0.0	9.00	21.00
5051.000	460.00	594.40	2.32	1.63	0.0	9.00	21.00
5051.000	530.00	594.47	0.08	1.58	0.0	9.00	21.00
5051.000	760.00	594.31	-0.16	1.19	0.0	9.00	21.00
5150.000	290.00	592.99	0.0	0.90	0.0	49.18	100.00
5150.000	460.00	595.04	2.05	0.64	0.0	80.00	100.00
5150.000	530.00	595.30	0.26	0.82	0.0	80.00	100.00
5150.000	760.00	596.02	0.72	1.71	0.0	80.00	100.00
5250.000	290.00	593.04	0.0	0.05	0.0	11.00	100.00
5250.000	460.00	595.06	2.03	0.03	0.0	79.06	100.00
5250.000	530.00	595.33	0.26	0.03	0.0	80.00	100.00
5250.000	760.00	596.06	0.73	0.03	0.0	80.00	100.00
5251.000	290.00	593.45	0.0	0.41	0.0	11.00	22.00
5251.000	460.00	595.28	1.83	0.21	0.0	80.00	22.00
5251.000	530.00	595.54	0.26	0.21	0.0	80.00	22.00
5251.000	760.00	596.28	0.74	0.23	0.0	80.00	22.00
5350.000	290.00	593.72	0.0	0.27	0.0	50.64	100.00
5350.000	460.00	595.39	1.67	0.11	0.0	80.00	100.00
5350.000	530.00	595.66	0.27	0.12	0.0	80.00	100.00
5350.000	760.00	596.43	0.77	0.15	0.0	80.00	100.00
5550.000	290.00	593.80	0.0	0.08	0.0	51.90	200.00
5550.000	460.00	595.44	1.64	0.05	0.0	80.00	200.00
5550.000	530.00	595.72	0.27	0.05	0.0	80.00	200.00
5550.000	760.00	596.49	0.78	0.06	0.0	80.00	200.00
5650.000	290.00	593.81	0.0	0.02	0.0	9.00	100.00
5650.000	460.00	595.41	1.60	-0.03	0.0	80.00	100.00
5650.000	530.00	595.71	0.29	-0.01	0.0	80.00	100.00
5650.000	760.00	596.49	0.78	-0.00	0.0	80.00	100.00
5651.000	290.00	594.75	0.0	0.94	0.0	9.00	20.50
5651.000	460.00	595.93	1.17	0.52	0.0	80.00	20.50
5651.000	530.00	596.17	0.24	0.46	0.0	80.00	20.50
5651.000	760.00	596.83	0.66	0.34	0.0	80.00	20.50
5750.000	290.00	595.09	0.0	0.34	0.0	50.99	100.00
5750.000	460.00	596.13	1.04	0.20	0.0	80.00	100.00
5750.000	530.00	596.38	0.25	0.21	0.0	80.00	100.00
5750.000	760.00	597.08	0.70	0.25	0.0	80.00	100.00
5850.000	290.00	595.08	0.0	-0.01	0.0	80.00	100.00
5850.000	460.00	596.13	1.05	0.00	0.0	80.00	100.00
5850.000	530.00	596.38	0.24	0.00	0.0	80.00	100.00
5850.000	760.00	597.07	0.69	-0.01	0.0	80.00	100.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
5851.000	290.00	595.34	0.0	0.25	0.0	80.00	20.50
5851.000	460.00	596.29	0.95	0.15	0.0	80.00	20.50
5851.000	530.00	596.54	0.25	0.16	0.0	80.00	20.50
5851.000	760.00	597.25	0.72	0.18	0.0	80.00	20.50
6000.000	290.00	595.58	0.0	0.24	0.0	34.32	150.00
6000.000	460.00	596.44	0.86	0.15	0.0	80.00	150.00
6000.000	530.00	596.68	0.24	0.14	0.0	80.00	150.00
6000.000	760.00	597.37	0.69	0.11	0.0	80.00	150.00
6001.000	290.00	596.02	0.0	0.44	0.0	80.00	20.50
6001.000	460.00	596.74	0.72	0.30	0.0	80.00	20.50
6001.000	530.00	596.96	0.22	0.28	0.0	80.00	20.50
6001.000	760.00	597.63	0.68	0.27	0.0	80.00	20.50
6100.000	290.00	596.24	0.0	0.22	0.0	49.26	100.00
6100.000	460.00	596.91	0.67	0.18	0.0	52.36	100.00
6100.000	530.00	597.13	0.22	0.17	0.0	52.65	100.00
6100.000	760.00	597.79	0.66	0.16	0.0	80.00	100.00
6750.000	290.00	596.95	0.0	0.70	0.0	52.40	700.00
6750.000	460.00	597.83	0.88	0.91	0.0	80.00	700.00
6750.000	530.00	598.11	0.28	0.98	0.0	80.00	700.00
6750.000	760.00	598.89	0.79	1.10	0.0	80.00	700.00
6850.000	290.00	596.96	0.0	0.01	0.0	83.12	100.00
6850.000	460.00	597.93	0.97	0.11	0.0	100.00	100.00
6850.000	530.00	598.22	0.29	0.12	0.0	100.00	100.00
6850.000	760.00	599.03	0.80	0.13	0.0	100.00	100.00
6851.000	290.00	597.33	0.0	0.37	0.0	100.00	21.00
6851.000	460.00	598.13	0.80	0.20	0.0	100.00	21.00
6851.000	530.00	598.39	0.26	0.16	0.0	100.00	21.00
6851.000	760.00	599.10	0.71	0.07	0.0	100.00	21.00
6950.000	290.00	597.51	0.0	0.18	0.0	60.63	100.00
6950.000	460.00	598.25	0.74	0.12	0.0	66.24	100.00
6950.000	530.00	598.50	0.25	0.11	0.0	90.30	100.00
6950.000	760.00	599.20	0.70	0.10	0.0	100.00	100.00
7375.000	290.00	597.71	0.0	0.20	0.0	36.50	420.00
7375.000	460.00	598.52	0.81	0.27	0.0	38.09	420.00
7375.000	530.00	598.80	0.27	0.30	0.0	38.63	420.00
7375.000	760.00	599.55	0.75	0.34	0.0	40.00	420.00
7475.000	290.00	597.75	0.0	0.05	0.0	14.00	100.00
7475.000	460.00	598.56	0.80	0.03	0.0	14.00	100.00
7475.000	530.00	598.82	0.26	0.02	0.0	14.00	100.00
7475.000	760.00	599.52	0.70	-0.03	0.0	14.00	100.00
7476.000	290.00	597.75	0.0	-0.01	0.0	14.00	1.00
7476.000	460.00	598.53	0.78	-0.03	0.0	14.00	1.00
7476.000	530.00	598.78	0.25	-0.04	0.0	14.00	1.00
7476.000	760.00	599.41	0.63	-0.11	0.0	14.00	1.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
7477.000	290.00	597.76	0.0	0.02	0.0	14.00	86.00
7477.000	460.00	598.56	0.80	0.03	0.0	14.00	86.00
7477.000	530.00	598.83	0.26	0.05	0.0	14.00	86.00
7477.000	760.00	599.51	0.68	0.10	0.0	14.00	86.00
7478.000	290.00	597.78	0.0	0.02	0.0	14.00	1.00
7478.000	460.00	598.64	0.86	0.08	0.0	14.00	1.00
7478.000	530.00	598.94	0.30	0.12	0.0	14.00	1.00
7478.000	760.00	599.87	0.93	0.36	0.0	14.00	1.00
7575.000	290.00	597.98	0.0	0.20	0.0	35.27	100.00
7575.000	460.00	599.04	1.06	0.40	0.0	39.55	100.00
7575.000	530.00	599.44	0.40	0.49	0.0	40.56	100.00
7575.000	760.00	600.69	1.26	0.82	0.0	42.00	100.00

SUMMARY OF ERRORS

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CAUTION  SECNO 17465.000  PROFILE  1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO 17465.000  PROFILE  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO 17465.000  PROFILE  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO 17465.000  PROFILE  2  CRITICAL DEPTH ASSUMED

CAUTION  SECNO 23141.000  PROFILE  4  BRIDGE DECK DEFINITION ERROR

CAUTION  SECNO 23142.000  PROFILE  4  BRIDGE DECK DEFINITION ERROR
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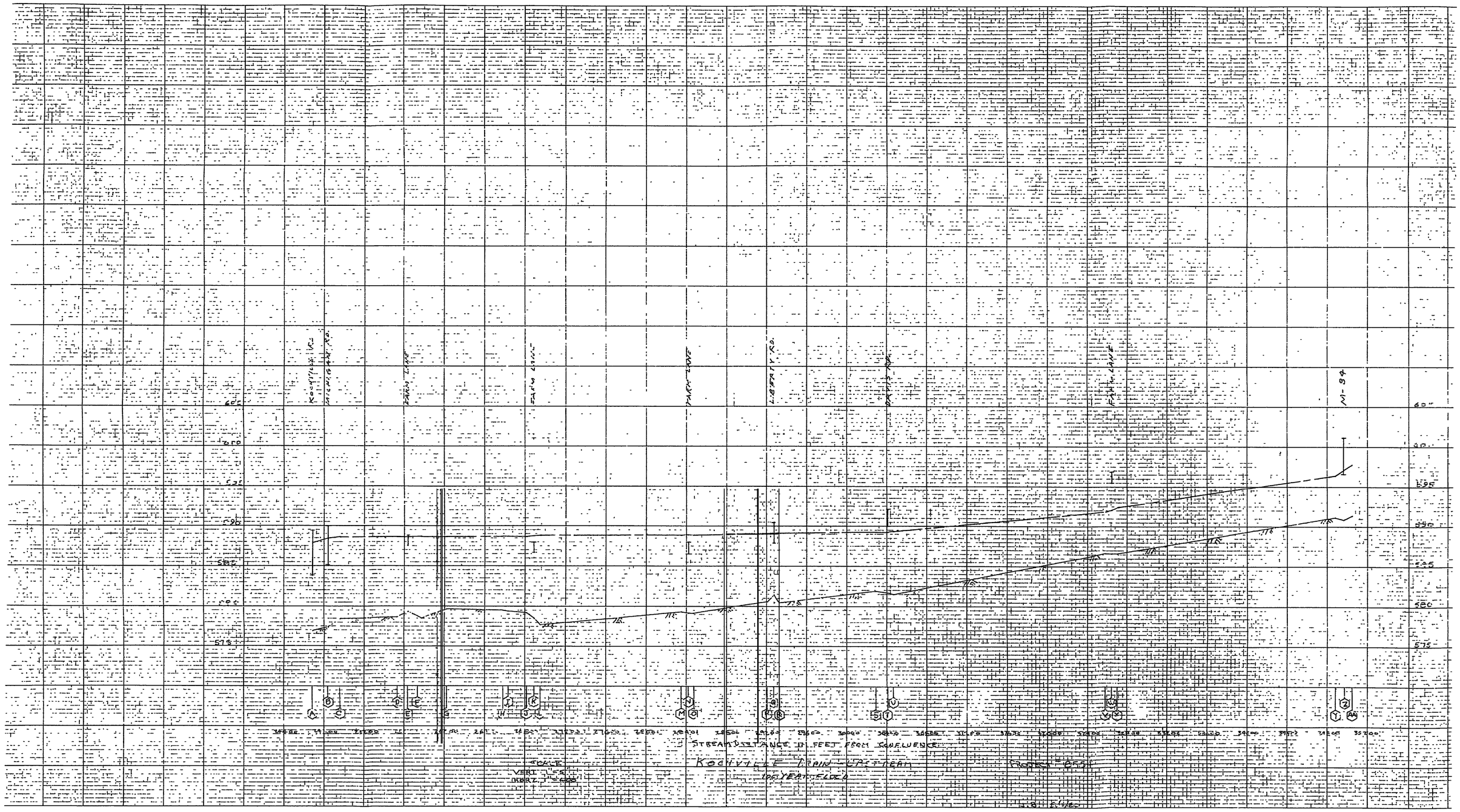
MOORE BUSINESS FORMS, INC 27



KEUFFEL & ESSER CO.
MADE IN U.S.A.

6/6/80

K+E STANDARD CROSS SECTION
20 TO THE INCH

KEUFFEL & ESSER CO.
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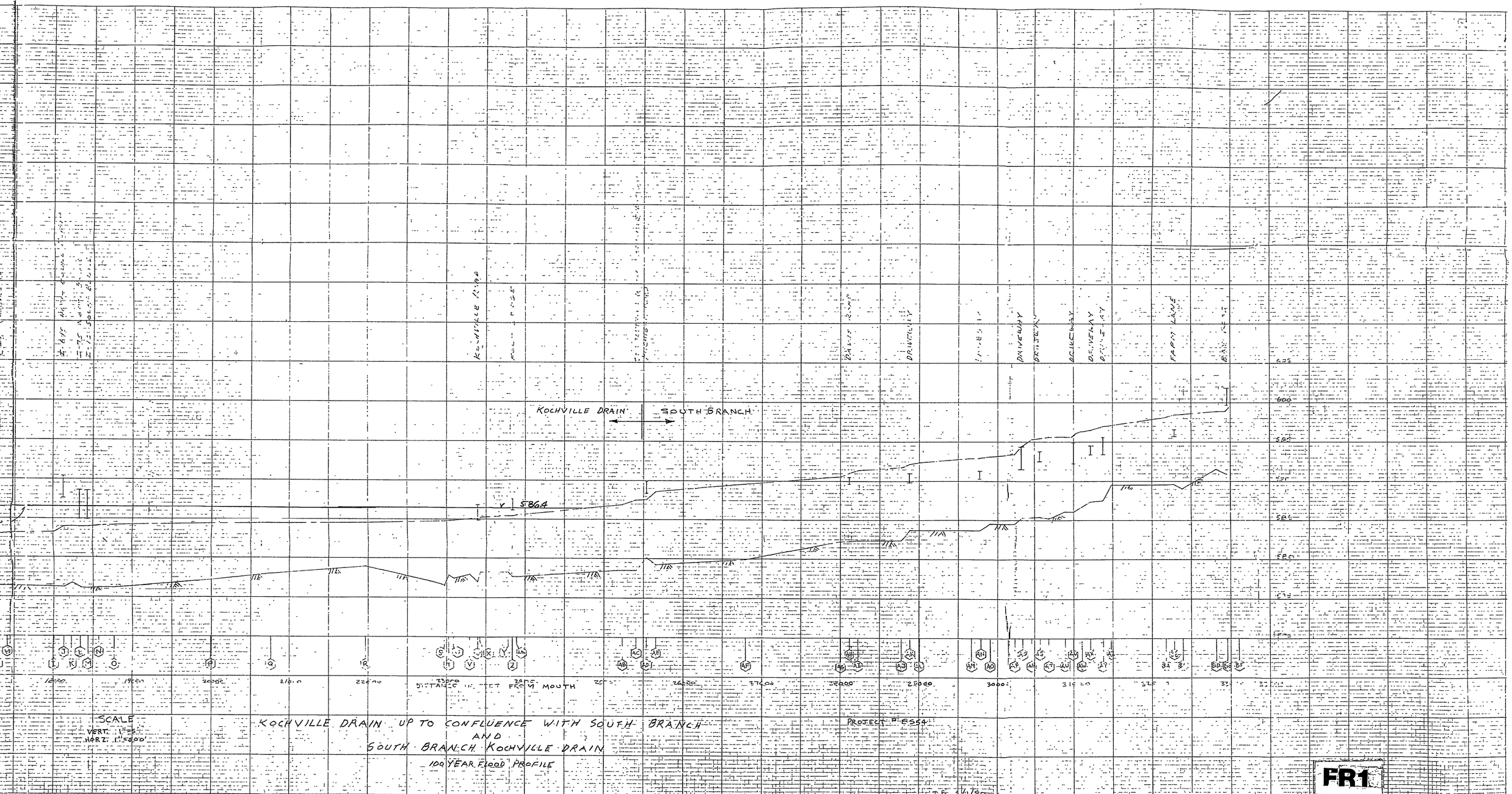
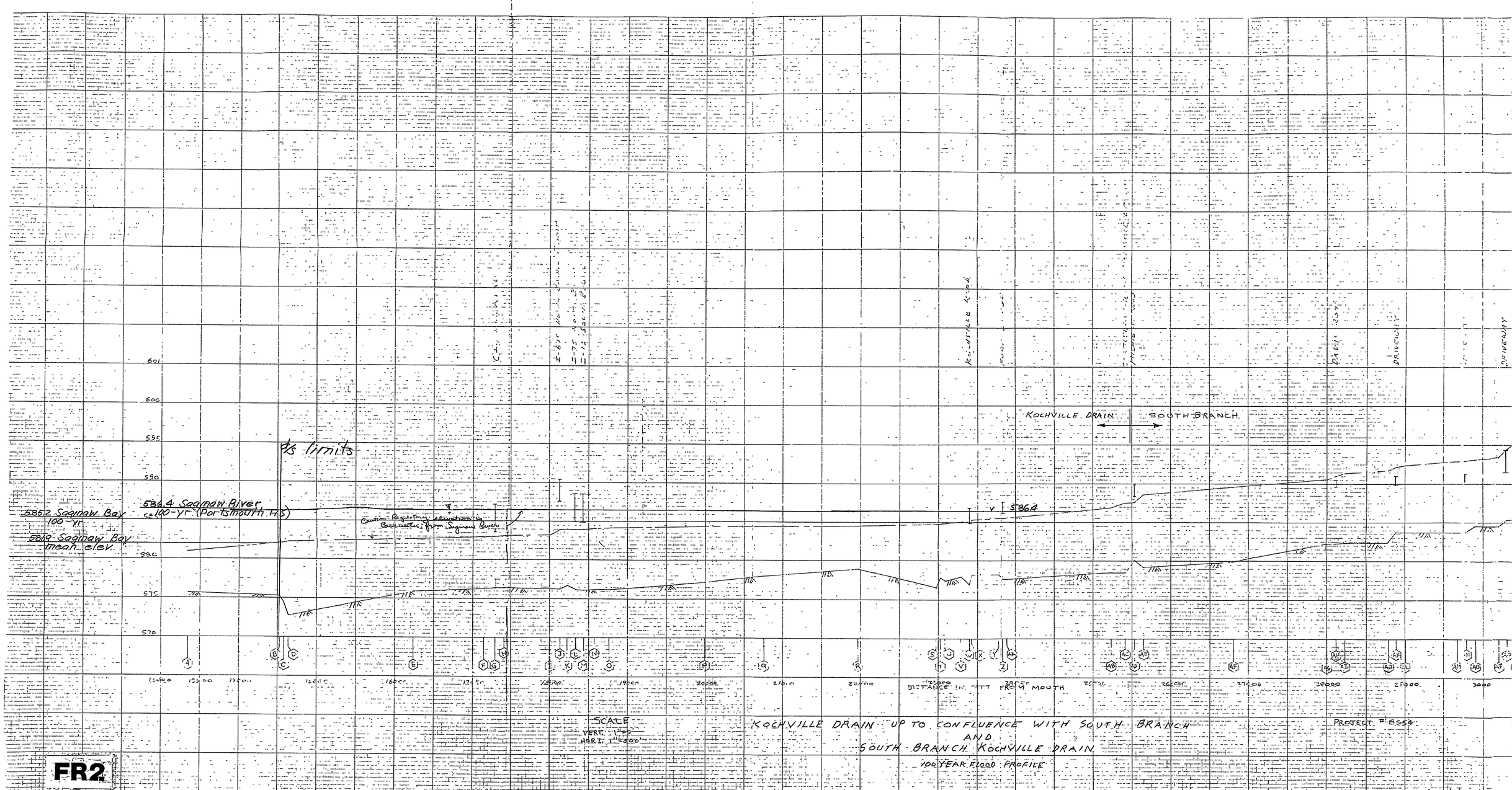
K+E STANDARD CROSS SECTION
20 TO THE INCH



6/6/80

KOCHVILLE DRAIN



601
600
595
590
585
580
575
570
d/s limits
586.4 Saginaw River
100-yr (Portsmouth H.S.)
585.2 Saginaw Bay
100-yr
581.9 Saginaw Bay
mean elev.
Caution: Registering elevation is Backwater from Saginaw River
KOCHVILLE DRAIN
SOUTH BRANCH
586.4
DRIVEWAY
DRIVEWAY
DISTANCE IN FT FROM MOUTH
SCALE
VERT. 1"=5'
HORZ. 1"=500'
KOCHVILLE DRAIN UP TO CONFLUENCE WITH SOUTH BRANCH
AND
SOUTH BRANCH KOCHVILLE DRAIN
100 YEAR FLOOD PROFILE
PROJECT # 6554
FR2

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: MISTEGUAY CREEK FPMS

3) WATERCOURSE: MISTEGUAY CREEK

4) DOCUMENT TYPE: 100 YR

00BREAK00

FILE NAME = FMISTY1.OUT

WSP2 XEQ 01/05/88 16:12:07
REV 03/14/88

WS : PAGE
ALT: 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

starting using 10,50,100,500 from Shiawassee flows

```
WSP2      40.                                                          1
TITLE     MISTEGUAY CREEK-FPMS-SAGINAW, SHIAWASSEE & GENESEE CO., MI.  2
TITLE     FLOOD PLAIN MANAGEMENT STUDY - PRESENT CONDITIONS 10-27-88   3
TITLE     DISCHARGE FROM FLINT RIVER TO PATTIE CREEK
DISCHARGE -1.       1640.     2860.     5200.     5820.     7330.     4
STARTE    7.1       585.8     589.7     592.7     593.8     596.6     7
TRIB      7.5       9.1       11.5
OUTPUT    PSK                                                          10
REACH     7.1       1.        0.        0.                            12
REACH     7.5       1.        5800.     5800.                         13
REACH     7.9       1.        6371.     6371.                         14
REACH2    7.5       2.7                                                15
ROAD      8.0       2.7       100.      100.                          16
COMMENT   CS 8.0    IS FRY RD AT STA. 122+71                          17
REACH     8.1       1.        100.      100.                          17A
REACH2    8.5       -.7                                                17B
REACH     8.5       1.        5449.     5549.                         18
REACH     8.9       1.        4980.     4980.                         19
ROAD      9.0       2.7       300.      300.                          20
COMMENT   CS 9.0 IS VERNE RD AT STA. 231+00                           21
REACH     9.1       1.        100.      100.                          21A
REACH2    8.9       0.                                                 21B
REACH     9.5       1.        1435.     1435.                         22
REACH2    9.9       0.                                                 23
REACH     9.9       1.        1436.     1250.                         24
ROAD      10.0      2.7       100.      100.                          25
COMMENT   CS 10.0 IS FERGUS RD AT STA. 261+71                         26
REACH     10.1      1.        100.      100.                          26A
REACH2    10.9      0.                                                 26B
REACH     10.9      1.        2208.     2100.                         27
ROAD      11.0      2.7       100.      100.                          28
COMMENT   CS 11.0 IS BIRCH RD AT CTA. 285+79                          29
REACH     11.1      1.        100.      100.                          29A
REACH2    11.5      -2.3                                               29B
REACH     11.5      1.        3821.     3500.                         30
REACH     11.9      1.        2600.     2400.                         31
ROAD      12.0      2.7       100.      100.                          32
COMMENT   CS 12.0 IS WEST BURT RD AT STA. 351+00                      33
REACH     12.1      1.        100.      100.                          33A
REACH2    12.5      -.9                                                33B
REACH     12.5      1.        2550.     2450.                         34
REACH     12.9      1.        2600.     2400.                         35
ROAD      13.0      2.7       100.      100.                          36
COMMENT   CS 13.0 IS GARY RD AT STA. 408+62                           37
REACH     13.5      1.        128.      128.                          38
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WSP2 XEQ 01/05/88 16:12:07 MISTEGUAY CREEK-FPMS-SAGINAW, SHIAWASSEE & GENESEE CO., MI. WS : PAGE
REV 03/14/88 DISCHARGE FROM FLINT RIVER TO PATTIE CREEK ALT: 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

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-----------------------------80/80 LIST OF INPUT DATA-----------------------------
ROAD      14.0      2.7       128.      128.                                  39
COMMENT   CS 14.0 IS LINCOLN RD AT STA. 411+18                                40
REACH     14.1      1.        100.      100.                                  40A
REACH2    14.9      0.                                                        40B
REACH     14.9      1.        1600.     1500.                                 41
REACH     14.95     1.        2097.     2000.                                 42
REACH2    14.9      3.8                                                       43
SEGMENT   7.1       1         N         -135.                                 47
N VALUE   .06                                                                 48
SEGMENT   7.1       2         N         -40.                                  49
N VALUE   .065                                                                50
SEGMENT   7.1       3         C         40.                                   51
N VALUE   .033                                                                52
SEGMENT   7.1       4         N         135.                                  53
N VALUE   .065                                                                54
SEGMENT   7.1       5         N         2501.                                 55
N VALUE   .060                                                                56
SECTION   7.1                                                                 57
          -2500.    610.      -2499.    585.      -135.     585.              58
          -105.     595.      -95.      595.      -40.      573.              59
          40.       573.      95.       595.      105.      595.              60
          135.      585.      2500.     585.      2501.     610.              61
ENDTABLE                                                                      62
SEGMENT   7.5       1         N         -110.                                 63
N VALUE   .060                                                                64
SEGMENT   7.5       2         N         -30.                                  65
N VALUE   .090                                                                66
SEGMENT   7.5       3         C         30.                                   67
N VALUE   .033                                                                68
SEGMENT   7.5       4         N         120.                                  69
N VALUE   .065                                                                70
SEGMENT   7.5       5         N         2870.                                 71
N VALUE   .060                                                                72
SECTION   7.5                                                                 73
          -2500     610.      -2499.    586.      -1875.    585.2             74
          -110.     585.      -90.      595.      -70.      595.              75
          -30.      575.5     30.       575.5     75.       596.              76
          85.       596.      120.      587.      370.      585.              77
          1800.     584.      2860.     585.      2870.     610.              78
ENDTABLE                                                                      79
COMPUTE   7.1       7.5       7.1
-----------------------------END OF DATA LISTING-----------------------------
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COMPUTE 7.1 7.5 7.1

----------STARTING DATA FROM GIVEN ELEVATION----------

***** WSPZ MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 7.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	573.0	0.0	0.0							
LOW GRND	573.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	573.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	585.8	5220.5	1640.0	0.00	0.00	0.00	1640.00	575.3	0.00002	3301.5
2 10	589.7	24327.3	2860.0	0.00	0.00	0.00	2860.00	576.3	0.00000	4921.1
3 50	592.7	39140.5	5200.0	0.00	0.00	0.00	5200.00	577.8	0.00000	4954.3
4 100	593.8	44597.5	5820.0	0.00	0.00	0.00	5820.00	578.2	0.00000	4966.5
5 500	596.6	58563.7	7330.0	0.00	0.00	0.00	7330.00	579.0	0.00000	4999.9

Dike: 593

SEGMENT TABLE FOR SECTION 7.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1640.	223.	63.	1068.	63.	223.
1640.	VELOCITY FPS	0.89	0.12	0.30	1.04	0.30	0.12
2	DISCHARGE CFS	2860.	1106.	43.	562.	43.	1106.
2860.	VELOCITY FPS	0.21	0.10	0.11	0.42	0.11	0.10
3	DISCHARGE CFS	5200.	2211.	63.	652.	63.	2212.
5200.	VELOCITY FPS	0.19	0.12	0.11	0.41	0.11	0.12
4	DISCHARGE CFS	5820.	2516.	68.	650.	68.	2517.
5820.	VELOCITY FPS	0.17	0.12	0.10	0.39	0.10	0.12
5	DISCHARGE CFS	7330.	3253.	84.	655.	84.	3254.
7330.	VELOCITY FPS	0.15	0.12	0.09	0.35	0.09	0.12
1	ELEV 585.8	KD 286376.	2077.	14846.	252530.	14846.	2078.
2	ELEV 589.7	KD 1991479.	768811.	30052.	393426.	30052.	769137.
3	ELEV 592.7	KD 4126296.	1753742.	49951.	518168.	49951.	1754486.
4	ELEV 593.8	KD 5064704.	2188941.	59302.	567291.	59302.	2189868.
5	ELEV 596.6	KD 7814145.	3466740.	89483.	700226.	89483.	3468212.

***** WSPI MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 7.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
573.00	0.							
574.	83.	85.	3639.	1.	17.	3602.	17.	1.
575.	170.	90.	11659.	1.	109.	11440.	109.	1.
576.	263.	95.	23132.	1.	321.	22488.	321.	1.
577.	360.	100.	37714.	1.	691.	36327.	691.	1.
578.	463.	105.	55209.	1.	1253.	52696.	1253.	1.
579.	570.	110.	75498.	1.	2037.	71412.	2037.	1.
580.	683.	115.	98492.	1.	3073.	92336.	3073.	1.
581.	800.	120.	124136.	1.	4388.	115357.	4388.	1.
582.	922.	125.	152401.	1.	6008.	140384.	6008.	1.
583.	1050.	130.	183253.	1.	7957.	167338.	7957.	1.
584.	1182.	135.	216675.	1.	10259.	196154.	10259.	1.
585.	1320.	140.	252653.	1.	12939.	226772.	12939.	1.
586.	6196.	4092.	414994.	13017.	15344.	259142.	15344.	13022.
587.	11082.	4891.	695147.	173230.	18378.	293218.	18378.	173303.
588.	15979.	4902.	1092730.	355373.	22083.	328957.	22083.	355524.
589.	20886.	4913.	1589366.	582852.	26509.	366322.	26509.	583099.
590.	25805.	4924.	2172911.	851054.	31704.	405278.	31704.	851415.
591.	30735.	4935.	2831536.	1153862.	37726.	445794.	37726.	1154350.
592.	35677.	4947.	3560091.	1489967.	44614.	487840.	44614.	1490598.
593.	40629.	4958.	4368850.	1865277.	52393.	531388.	52393.	1866069.
594.	45590.	4969.	5251813.	2276095.	61122.	576414.	61122.	2277059.
595.	50571.	4991.	6176733.	2707212.	68598.	622893.	68598.	2708361.
596.	55564.	5000.	7177617.	3171920.	80233.	670803.	80233.	3173266.
597.	60564.	5000.	8261458.	3673801.	96088.	720123.	96088.	3675360.
598.	65564.	5000.	9380342.	4190965.	112453.	770834.	112453.	4192744.
599.	70564.	5000.	10572724.	4743409.	130220.	822916.	130220.	4745423.
600.	75564.	5000.	11821618.	5322346.	148991.	876351.	148991.	5324611.
601.	80564.	5000.	13117174.	5922921.	168562.	931124.	168562.	5925435.
602.	85565.	5000.	14478017.	6554557.	189346.	987217.	189346.	6557345.
603.	90565.	5000.	15879806.	7204988.	210804.	1044615.	210804.	7208053.
604.	95565.	5001.	17343062.	7884657.	233398.	1103302.	233398.	7888004.
605.	100566.	5001.	18853780.	8586445.	256816.	1163268.	256816.	8590090.
606.	105567.	5001.	20413500.	9311232.	281101.	1224497.	281101.	9315193.
607.	110567.	5001.	22028600.	10062217.	306389.	1286975.	306389.	10066498.
608.	115568.	5001.	23681880.	10830822.	332316.	1350692.	332316.	10835430.
609.	120569.	5001.	25397560.	11629090.	359398.	1415634.	359398.	11634041.
610.	125570.	5001.	27139708.	12439265.	386876.	1481791.	386876.	12444557.
611.	130571.	5001.	28950092.	13282004.	415637.	1549152.	415637.	13287661.
612.	135572.	5001.	30719434.	14103575.	443408.	1617707.	443408.	14109575.
613.	140573.	5001.	32548026.	14953249.	472261.	1687442.	472261.	14959610.
614.	145574.	5001.	34436236.	15831207.	502210.	1758352.	502210.	15837942.
615.	150575.	5001.	36384544.	16737679.	533266.	1830422.	533266.	16744800.

***** WSPZ MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 7.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	575.5	0.0	0.0							
LOW GRND	575.5	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	575.5	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	586.0	6488.7	1640.0	0.00	7.99	653.49	1640.00	578.2	0.00003	4907.9
2	589.7	25938.2	2860.0	0.00	7.99	701.88	2860.00	579.4	0.00000	5271.4
3	592.7	41782.2	5200.0	0.00	7.99	706.10	5200.00	581.2	0.00000	5303.1
4	593.8	47611.9	5820.0	0.00	7.99	707.85	5820.00	581.6	0.00000	5316.2
5	596.6	62551.9	7330.0	0.00	7.99	714.23	7330.00	582.6	0.00000	5364.1

Dike = 595

SEGMENT TABLE FOR SECTION 7.5

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1640.	242.	26.	691.	40.	642.
1640.	VELOCITY FPS	0.81	0.13	0.22	1.10	0.33	0.17
2	DISCHARGE CFS	2860.	1036.	17.	323.	23.	1461.
2860.	VELOCITY FPS	0.16	0.10	0.07	0.38	0.10	0.11
3	DISCHARGE CFS	5200.	2067.	25.	378.	36.	2693.
5200.	VELOCITY FPS	0.15	0.12	0.07	0.37	0.09	0.12
4	DISCHARGE CFS	5820.	2353.	27.	381.	40.	3019.
5820.	VELOCITY FPS	0.14	0.11	0.07	0.35	0.09	0.12
5	DISCHARGE CFS	7330.	3047.	34.	391.	51.	3808.
7330.	VELOCITY FPS	0.13	0.11	0.05	0.31	0.08	0.12
1	ELEV 586.0 KD	286281.	28648.	5026.	135804.	7821.	108982.
2	ELEV 589.7 KD	1981882.	715994.	11580.	225505.	16286.	1012517.
3	ELEV 592.7 KD	4242655.	1684727.	20743.	310211.	29451.	2197523.
4	ELEV 593.8 KD	5249864.	2121746.	24793.	343913.	36137.	2723274.
5	ELEV 596.6 KD	8170114.	3395589.	37769.	435911.	56514.	4244332.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 7.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
575.50	0.							
576.	31.	62.	860.	1.	4.	851.	3.	1.
577.	95.	66.	5387.	1.	29.	5311.	44.	1.
578.	163.	71.	12734.	1.	114.	12446.	171.	1.
579.	236.	75.	22511.	1.	281.	21808.	419.	1.
580.	313.	79.	34529.	1.	549.	33156.	820.	1.
581.	394.	83.	48669.	1.	937.	46328.	1400.	1.
582.	480.	88.	64857.	1.	1463.	61204.	2185.	1.
583.	570.	92.	83045.	1.	2142.	77693.	3201.	1.
584.	820.	719.	104608.	1.	2991.	95719.	4469.	62.
585.	2541.	2999.	157070.	110.	3967.	115218.	6012.	14240.
586.	6566.	4916.	306774.	29651.	5044.	136138.	7851.	110951.
587.	11687.	5212.	604943.	144390.	6345.	158431.	9807.	278765.
588.	16928.	5253.	1023265.	313884.	7975.	182056.	11802.	502936.
589.	22186.	5264.	1552023.	534416.	9947.	206977.	14164.	784718.
590.	27454.	5274.	2173293.	797248.	12293.	233161.	17232.	1112924.
591.	32734.	5285.	2872396.	1095079.	15044.	260579.	21064.	1480116.
592.	38025.	5296.	3647186.	1427461.	18221.	289202.	25684.	1885819.
593.	43327.	5306.	4497364.	1794350.	21847.	319007.	31128.	2330080.
594.	48638.	5321.	5429355.	2199494.	25027.	349970.	37433.	2816932.
595.	53960.	5345.	6427615.	2635622.	26235.	382071.	44682.	3338787.
596.	59312.	5358.	7486274.	3096744.	32842.	415288.	51621.	3889250.
597.	64672.	5364.	8620849.	3591227.	40947.	449605.	61424.	4477179.
598.	70037.	5365.	9827027.	4116754.	49819.	485003.	75183.	5100159.
599.	75402.	5365.	11081853.	4663443.	59138.	521466.	89649.	5747693.
600.	80767.	5366.	12405809.	5241405.	69242.	558980.	105372.	6430484.
601.	86133.	5366.	13794167.	5848259.	80042.	597528.	122204.	7146028.
602.	91499.	5366.	15227249.	6474599.	91249.	637099.	139678.	7884296.
603.	96866.	5367.	16728041.	7131527.	103213.	677679.	158364.	8657100.
604.	102233.	5367.	18280124.	7811139.	115686.	719254.	177854.	9456023.
605.	107601.	5368.	19882780.	8513136.	128664.	761815.	198146.	10280737.
606.	112968.	5368.	21550592.	9244535.	142362.	805349.	219589.	11138709.
607.	118337.	5369.	23256590.	9992428.	156388.	849845.	241543.	12016167.
608.	123706.	5369.	25029134.	10770380.	171158.	895294.	264688.	12927562.
609.	129075.	5370.	26838772.	11564368.	186243.	941685.	288327.	13857959.
610.	134445.	5370.	28709018.	12385571.	201991.	989010.	313021.	14819318.
611.	139815.	5370.	30623024.	13226005.	218155.	1037258.	338374.	15803150.
612.	145185.	5370.	32558830.	14075384.	234446.	1086421.	363918.	16798094.
613.	150555.	5370.	34510076.	14930820.	250762.	1136492.	389490.	17801032.
614.	155925.	5370.	36522280.	15813643.	267739.	1187460.	416114.	18835054.
615.	161295.	5370.	38595676.	16724021.	285386.	1239320.	443805.	19900346.

***** WSPZ MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
TITLE      DISCHARGE FROM PATTIE CREEK TO DENSLOW DRAIN
CHANGE     DISCHARGE
DISCHARGE  -1.       1710.     3510.     7660.     8860.     12260.
END
BPR        8.0       A         1.        5.                            80
PIER       580.2     4.        581.2     4.                            81
GIRDER     597.7     597.2     0.        .8        2.7                 82
           -75.1     600.4     -75.      697.2     75.       697.2     83
           75.1      600.4                                             84
ENDTABLE                                                               85
SECTION    8.0                                                         86
           -3601.    610.      -3600.    588.      -500.     590.6     87
           -400.     591.1     -300.     592.7     -175.     598.9     88
           -75.1     600.4     -75.      594.1     -50.      580.2     89
           0.        578.2     32.       581.2     75.       591.1     90
           75.1      600.4     150.      600.9     250.      600.3     91
           350.      598.1     450.      596.3     750.      593.1     92
           2800.     591.      2801.     610.                          93
ENDTABLE                                                               94
SEGMENT    8.5       1         N         -140.                         95
N VALUE    .06                                                         96
SEGMENT    8.5       2         N         -30.                          97
N VALUE    .09                                                         98
SEGMENT    8.5       3         C         30.                           99
N VALUE    .033                                                        100
SEGMENT    8.5       4         N         110.                          101
N VALUE    .065                                                        102
SEGMENT    8.5       5         N         2475.                         103
N VALUE    .060                                                        104
SECTION    8.5                                                         105
           -4300.    610.      -4275.    587.5     -2200.    585.      106
           -1290.    586.7     -630.     586.8     -205.     587.      107
           -140.     587.      -90.      600.      -80.      600.      108
           -30.      578.9     30.       578.9     75.       600.      109
           85.       600.      110.      587.      1030.     588.      110
           1570.     586.      1740.     588.      2440.     590.      111
           2470.     595.      2475.     610.                          112
ENDTABLE                                                               113
SEGMENT    8.9       1         N         -95.                          114
N VALUE    .06                                                         115
SEGMENT    8.9       2         N         -30.                          116
N VALUE    .07                                                         117
SEGMENT    8.9       3         C         30.                           118
N VALUE    .033                                                        119
SEGMENT    8.9       4         N         100.                          120
```

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***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
N VALUE   .065                                                          121
SEGMENT   8.9       5         N         2701.                           122
N VALUE   .060                                                          123
SECTION   8.9                                                           124
          -3275.    610.      -3270.    589.8     -2220.    588.5       125
          -1265.    588.8     -645.     587.4     -95.      590.        126
          -75.      601.      -59.      601.      -30.      579.6       127
          30.       579.6     55.       601.      70.       601.        128
          100.      591.      205.      590.      435.      589.        129
          880.      590.      1090.     591.      1555.     591.6       130
          2675.     591.      2700.     594.      2701.     610.        131
ENDTABLE                                                                132
BPR       9.0       A         3                                         133
GIRDER    595.6     595.1     0.        .8        2.7                 134
          -38.5     598.2     -38.5     595.1     38.5      595.1       135
          38.5      597.8                                               136
ENDTABLE                                                                137
SECTION   9.0                                                           138
          -5301.    610.      -5300.    595.      -2600.    596.        139
          -400.     590.2     -128.     592.3     -100.     599.        140
          -73       599.7     -38.5     598.2     -38.4     585.1       141
          -25.5     581.1     0.        579.      31.5      581.1       142
          38.4      583.4     38.5      597.8     100.      594.1       143
          200.      592.1     400.      591.3     2800.     594.        144
          5400.     596.      5401.     610.                            145
ENDTABLE                                                                146
COMPUTE   7.9       9.1       7.5
-----------------------------END OF DATA LISTING-----------------------------
```

COMPUTE 7.9 9.1 7.5

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSPZ MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 7.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.2	0.0	0.0							
LOW GRND	578.2	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	578.2	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	587.3	1187.0	1710.0	0.00	8.78	222.59	1710.00	581.0	0.00020	1521.9
2	589.9	12673.8	3510.0	0.00	8.78	764.32	3510.00	582.7	0.00003	5225.8
3	592.8	27906.0	7660.0	0.00	8.78	771.56	7660.00	585.5	0.00001	5275.3
4	593.9	33594.5	8860.0	0.00	8.78	773.22	8860.00	586.2	0.00001	5286.7
5	596.6	48303.5	12260.0	0.00	8.78	778.00	12260.00	587.6	0.00001	5319.4

SEGMENT TABLE FOR SECTION 7.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	7.	50.	1492.	74.	87.
1710.	VELOCITY FPS	2.61	0.18	0.59	2.75	0.83	0.20
2	DISCHARGE CFS	3510.	942.	33.	820.	51.	1664.
3510.	VELOCITY FPS	0.63	0.20	0.23	1.17	0.34	0.24
3	DISCHARGE CFS	7660.	2826.	43.	805.	60.	3926.
7660.	VELOCITY FPS	0.39	0.24	0.18	0.92	0.24	0.26
4	DISCHARGE CFS	8860.	3397.	46.	783.	64.	4569.
8860.	VELOCITY FPS	0.34	0.24	0.16	0.83	0.21	0.26
5	DISCHARGE CFS	12260.	4966.	57.	792.	85.	6361.
12260.	VELOCITY FPS	0.30	0.24	0.13	0.72	0.18	0.25
1 ELEV	587.3 KD	118791.	2.	3534.	106342.	5288.	3625.
2 ELEV	589.9 KD	670196.	173081.	6625.	162791.	10167.	317533.
3 ELEV	592.8 KD	2226720.	819908.	12514.	235461.	17540.	1141298.
4 ELEV	593.9 KD	2995714.	1148271.	15530.	265160.	21753.	1544999.
5 ELEV	596.6 KD	5370069.	2173943.	24951.	347992.	37007.	2786175.

***** WSPI MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 7.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.20	0.							
579.	49.	63.	1878.	1.	5.	1862.	8.	1.
580.	115.	68.	7319.	1.	48.	7198.	71.	1.
581.	185.	72.	15424.	1.	155.	15034.	231.	1.
582.	259.	76.	25888.	1.	349.	25012.	522.	1.
583.	337.	80.	38549.	1.	652.	36922.	973.	1.
584.	420.	85.	53314.	1.	1079.	50616.	1612.	1.
585.	507.	89.	70108.	1.	1650.	65985.	2465.	1.
586.	597.	93.	88882.	1.	2379.	82942.	3553.	1.
587.	942.	1093.	111982.	1.	3281.	101416.	4902.	661.
588.	3452.	3993.	186022.	1636.	4275.	121347.	6532.	34491.
589.	8070.	5072.	384313.	57315.	5396.	142683.	8464.	156299.
590.	13255.	5234.	722642.	192302.	6794.	165380.	10382.	342489.
591.	18504.	5256.	1170772.	374282.	8530.	189398.	12442.	581500.
592.	23766.	5267.	1723502.	605571.	10614.	214701.	15035.	875015.
593.	29038.	5278.	2367609.	878863.	13079.	241258.	18328.	1214752.
594.	34320.	5288.	3096180.	1190868.	15951.	269040.	22367.	1597415.
595.	39612.	5299.	3904108.	1539126.	19257.	298020.	27204.	2020501.
596.	44919.	5309.	4770211.	1912713.	23026.	328175.	32924.	2472568.
597.	50234.	5328.	5716708.	2324487.	25390.	359482.	39513.	2967085.
598.	55563.	5350.	6738061.	2770923.	27700.	391919.	46784.	3500467.
599.	60919.	5362.	7823253.	3244091.	35266.	425468.	53789.	4064352.
600.	66281.	5364.	8973468.	3744638.	43493.	460111.	65366.	4659349.
601.	71646.	5365.	10193379.	4276107.	52490.	495830.	79323.	5289254.
602.	77011.	5365.	11477219.	4836185.	62171.	532610.	94372.	5951628.
603.	82377.	5366.	12812704.	5419030.	72363.	570436.	110231.	6640224.
604.	87743.	5366.	14218529.	6033712.	83350.	609293.	127361.	7364688.
605.	93109.	5367.	15672484.	6669475.	94789.	649167.	145207.	8113589.
606.	98476.	5367.	17185006.	7331464.	106853.	690047.	164046.	8892367.
607.	103843.	5367.	18761838.	8022383.	119620.	731919.	184009.	9703909.
608.	109211.	5368.	20374834.	8728785.	132676.	774772.	204423.	10533896.
609.	114579.	5368.	22057568.	9466778.	146525.	818597.	226103.	11399463.
610.	119948.	5369.	23781644.	10222780.	160744.	863379.	248367.	12286162.
611.	125317.	5369.	25564494.	11005160.	175597.	909113.	271642.	13202842.
612.	130686.	5370.	27395690.	11808885.	190929.	955784.	295674.	14144199.
613.	136056.	5370.	29275978.	12634432.	206758.	1003387.	320496.	15110767.
614.	141426.	5370.	31210694.	13484190.	223158.	1051910.	346225.	16105129.
615.	146796.	5370.	33137794.	14329144.	239272.	1101347.	371480.	17095690.
616.	152166.	5370.	35107260.	15192785.	255785.	1151687.	397365.	18107966.
617.	157536.	5370.	37137848.	16083856.	272963.	1202924.	424308.	19151342.
618.	162906.	5370.	39229648.	17002524.	290812.	1255049.	452322.	20226034.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VNZ FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.24	2.24	0.18	0.44*	0.00*	2.32	2.22	4.96	1.96	3.52	1247.82	11480.18	581.82	0.00
2	0.11	2.93*	0.18	0.28*	0.00*	2.98	1.36	2.01	1.11	5.15	12687.81	25885.47	580.78	0.00
3	0.07	3.16*	0.17	0.23*	0.00*	3.19	1.07	1.39	1.03	1.98	27912.14	44821.29	581.58	0.00
4	0.06	3.20*	0.17	0.22*	0.00*	3.23	1.07	1.31	1.02	1.70	33598.99	51999.40	580.68	0.00
5	0.05	3.25*	0.16	0.21*	0.00*	3.29	1.07	1.20	1.01	1.39	48306.38	70568.47	579.55	0.00

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 8.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	578.20	0.0	0.00	578.20	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	587.73	1710.0	0.46	587.27	1710.00	1710.0	771.2	0.0	0.0	0.0	0.0	0.0
2	589.99	3510.0	0.10	589.89	3510.00	1251.3	1109.2	0.0	0.0	2258.7	2364.8	2374.8
3	592.85	7660.0	0.06	592.79	7660.00	1601.8	1526.0	0.0	0.0	6058.2	12955.4	5106.2
4	593.92	8860.0	0.06	593.86	8860.00	1610.4	1686.1	0.0	0.0	7249.6	18733.0	5452.3
5	596.70	12260.0	0.06	596.64	12260.00	1924.9	2102.3	0.0	0.0	10335.1	34293.3	5753.4

MIN ROAD ELEVATION = 588.00 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 597.20 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 8.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM		CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.2	0.0	0.0								
LOW GRND	578.2	0.0	0.0	0.00	0.00	0.00					0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****											
BANK FULL	578.2	0.0	0.0	0.00	0.00	0.00					0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****											
1	587.7	11486.8	1710.0	0.00	0.28	27.49	1710.00		581.0	0.00001	5986.5
2	590.0	25888.3	3510.0	0.00	0.28	30.30	3510.00		582.7	0.00000	6599.9
3	592.8	44823.7	7660.0	0.00	0.28	30.56	7660.00		585.4	0.00000	6656.7
4	593.9	52001.4	8860.0	0.00	0.28	30.65	8860.00		585.5	0.00000	6675.0
5	596.7	70569.7	12260.0	0.00	0.28	30.81	12260.00		585.8	0.00000	6710.1

SEGMENT TABLE FOR SECTION 8.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	1144.	14.	361.	17.	173.
1710.	VELOCITY FPS	0.34	0.13	0.12	0.63	0.18	0.09
2	DISCHARGE CFS	3510.	2441.	17.	336.	21.	696.
3510.	VELOCITY FPS	0.19	0.13	0.09	0.47	0.13	0.10
3	DISCHARGE CFS	7660.	5163.	32.	442.	36.	1987.
7660.	VELOCITY FPS	0.20	0.17	0.09	0.50	0.13	0.15
4	DISCHARGE CFS	8860.	5923.	36.	453.	41.	2407.
8860.	VELOCITY FPS	0.20	0.17	0.09	0.48	0.13	0.15
5	DISCHARGE CFS	12260.	8063.	53.	500.	57.	3588.
12260.	VELOCITY FPS	0.19	0.18	0.09	0.45	0.12	0.16

1	ELEV	587.7	KD	513581.	343482.	4436.	115927.	5595.	44141.
2	ELEV	590.0	KD	1709564.	1191272.	8277.	165195.	10084.	334737.
3	ELEV	592.8	KD	4096016.	2762477.	16875.	237121.	19350.	1060193.
4	ELEV	593.9	KD	5213104.	3485936.	21388.	266890.	24044.	1414845.
5	ELEV	596.7	KD	8565889.	5634980.	36719.	349907.	39588.	2504696.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 8.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.20	0.							
579.	49.	64.	1879.	1.	6.	1862.	8.	1.
580.	115.	68.	7325.	1.	56.	7198.	69.	1.
581.	186.	73.	15443.	1.	182.	15034.	224.	1.
582.	261.	77.	25933.	1.	410.	25012.	505.	1.
583.	340.	82.	38632.	1.	765.	36922.	943.	1.
584.	439.	189.	53547.	5.	1268.	50616.	1561.	1.
585.	957.	1064.	76720.	2555.	1937.	65985.	2386.	3.
586.	2843.	3239.	131990.	38313.	2793.	82942.	3441.	511.
587.	7282.	5350.	298930.	167333.	3644.	101416.	4581.	12629.
588.	13080.	6107.	628706.	424875.	4762.	121347.	6004.	65368.
589.	19385.	6487.	1103434.	772395.	6298.	142683.	7830.	171318.
590.	25941.	6600.	1717487.	1195060.	8294.	165380.	10104.	336390.
591.	32558.	6625.	2448096.	1682343.	10797.	189398.	12865.	550162.
592.	39191.	6642.	3294283.	2239105.	13839.	214701.	16141.	808853.
593.	45842.	6659.	4244854.	2858819.	17470.	241258.	19974.	1106396.
594.	52508.	6676.	5293983.	3537979.	21735.	269040.	24402.	1440409.
595.	59191.	6690.	6437841.	4273820.	26677.	298020.	29461.	1809860.
596.	65889.	6702.	7654624.	5053143.	32326.	328175.	35183.	2205131.
597.	72598.	6714.	8968198.	5891250.	38734.	359482.	41601.	2636562.
598.	79316.	6725.	10372245.	6784241.	45943.	391919.	48754.	3101165.
599.	86047.	6737.	11850582.	7722323.	53980.	425468.	56668.	3591912.
600.	92801.	6753.	13403776.	8705981.	63041.	460111.	64983.	4109305.
601.	99562.	6763.	15041553.	9739641.	73948.	495830.	75223.	4656515.
602.	106326.	6764.	16761128.	10820477.	87549.	532610.	88736.	5231507.
603.	113091.	6766.	18545554.	11940885.	101866.	570436.	102948.	5829004.
604.	119858.	6767.	20414356.	13112296.	117297.	609293.	118240.	6457111.
605.	126626.	6769.	22344282.	14321111.	133362.	649167.	134153.	7106217.
606.	133396.	6770.	24346028.	15573613.	150302.	690047.	150917.	7780879.
607.	140166.	6772.	26425598.	16873298.	168228.	731919.	168641.	8483546.
608.	146939.	6773.	28553436.	18202954.	186560.	774773.	186766.	9202103.
609.	153712.	6774.	30764876.	19583152.	206002.	818597.	205968.	9951061.
610.	160487.	6775.	33030708.	20997278.	225964.	863379.	225681.	10718184.
611.	167262.	6775.	35339848.	22438496.	246305.	909113.	245768.	11499547.
612.	174037.	6775.	37661720.	23889208.	266428.	955785.	265656.	12282718.
613.	180812.	6775.	40061796.	25387282.	287536.	1003388.	286502.	13094027.
614.	187587.	6775.	42540276.	26932820.	309646.	1051911.	308324.	13933681.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 8.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.9	0.0	0.0							
LOW GRND	578.9	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	578.9	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	587.9	8151.9	1710.0	0.00	7.51	725.67	1710.00	581.7	0.00002	5696.6
2	590.0	21543.6	3510.0	0.00	7.51	836.41	3510.00	583.4	0.00001	6565.9
3	592.9	40351.5	7660.0	0.00	7.51	846.49	7660.00	586.1	0.00001	6645.0
4	593.9	47478.9	8860.0	0.00	7.51	848.87	8860.00	586.2	0.00000	6663.6
5	596.7	65970.7	12260.0	0.00	7.51	853.76	12260.00	586.5	0.00000	6702.0

DIK @ 600

SEGMENT TABLE FOR SECTION 8.5

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	1056.	19.	519.	24.	93.
1710.	VELOCITY FPS	0.55	0.16	0.19	0.96	0.27	0.09
2	DISCHARGE CFS	3510.	2458.	19.	407.	23.	604.
3510.	VELOCITY FPS	0.25	0.16	0.11	0.61	0.16	0.12
3	DISCHARGE CFS	7660.	5191.	32.	487.	37.	1914.
7660.	VELOCITY FPS	0.23	0.19	0.11	0.58	0.15	0.16
4	DISCHARGE CFS	8860.	5949.	36.	491.	41.	2343.
8860.	VELOCITY FPS	0.22	0.19	0.10	0.54	0.14	0.16
5	DISCHARGE CFS	12260.	8087.	52.	528.	56.	3536.
12260.	VELOCITY FPS	0.21	0.19	0.09	0.49	0.13	0.17
1	ELEV 587.9 KD	342105.	210580.	3763.	104822.	4751.	18189.
2	ELEV 590.0 KD	1283410.	900180.	6844.	150110.	8457.	217819.
3	ELEV 592.9 KD	3422693.	2322034.	14299.	219250.	16618.	850491.
4	ELEV 593.9 KD	4451584.	2991331.	18291.	247972.	20817.	1173173.
5	ELEV 596.7 KD	7603168.	5017307.	32107.	328549.	34937.	2190269.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 8.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.90	0.							
579.	6.	30.	57.	2.	2.	55.	2.	2.
580.	69.	65.	3212.	6.	15.	3167.	18.	6.
581.	136.	69.	9510.	8.	84.	9307.	103.	8.
582.	208.	74.	18363.	10.	236.	17814.	291.	10.
583.	284.	78.	29527.	12.	498.	28390.	613.	12.
584.	365.	83.	42870.	13.	891.	40848.	1098.	13.
585.	489.	343.	58539.	125.	1437.	55055.	1770.	15.
586.	1272.	1488.	87395.	9016.	2154.	70909.	2653.	16.
587.	3825.	3972.	161811.	61014.	3039.	88328.	3753.	2619.
588.	8871.	5789.	377677.	236912.	3894.	107245.	4918.	22405.
589.	14920.	6234.	756163.	521370.	5121.	127602.	6442.	94396.
590.	21320.	6564.	1265891.	887350.	6779.	149351.	8383.	213022.
591.	27923.	6612.	1914207.	1326038.	8904.	172448.	10777.	395309.
592.	34544.	6630.	2677301.	1831949.	11540.	196855.	13662.	622367.
593.	41184.	6647.	3540841.	2398167.	14730.	222538.	17074.	887040.
594.	47840.	6665.	4507880.	3027120.	18513.	249465.	21047.	1190664.
595.	54513.	6680.	5572725.	3714980.	22934.	277609.	25619.	1530833.
596.	61200.	6694.	6729533.	4457950.	28036.	306944.	30824.	1905270.
597.	67899.	6705.	7977614.	5255811.	33863.	337447.	36699.	2313573.
598.	74612.	6717.	9297780.	6097342.	40441.	369095.	43273.	2747082.
599.	81335.	6729.	10708580.	6993884.	47823.	401868.	50582.	3214011.
600.	88069.	6741.	12204998.	7942383.	56068.	435747.	58617.	3712097.
601.	94829.	6757.	13767541.	8931190.	65364.	470714.	66981.	4233050.
602.	101591.	6763.	15409506.	9965781.	77144.	506753.	78388.	4780909.
603.	108355.	6765.	17141662.	11053587.	91017.	543848.	92161.	5360945.
604.	115121.	6766.	18930532.	12176189.	105428.	581985.	106462.	5960091.
605.	121888.	6768.	20798460.	13346631.	120860.	621148.	121754.	6587733.
606.	128656.	6769.	22741262.	14562571.	137215.	661325.	137945.	7242140.
607.	135427.	6771.	24740132.	15812949.	154126.	702504.	154681.	7915599.
608.	142198.	6772.	26816104.	17110076.	172023.	744672.	172374.	8616838.
609.	148971.	6774.	28952514.	18444206.	190568.	787818.	190703.	9338996.
610.	155745.	6774.	31158292.	19820758.	209946.	831930.	209842.	10085640.
611.	162520.	6775.	33430392.	21237940.	230088.	877000.	229727.	10855516.
612.	169295.	6775.	35710420.	22661720.	249956.	923015.	249357.	11625340.
613.	176070.	6775.	38035012.	24113340.	270188.	969968.	269348.	12409761.
614.	182845.	6775.	40437044.	25611934.	291401.	1017847.	290294.	13222146.
615.	189620.	6775.	42916876.	27157678.	313612.	1066646.	312211.	14062638.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 8.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	579.6	0.0	0.0							
LOW GRND	579.6	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	579.6	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	588.7	1438.0	1710.0	0.00	6.86	174.22	1710.00	582.5	0.00019	1523.9
2	590.5	7008.2	3510.0	0.00	6.86	459.83	3510.00	584.2	0.00009	4022.1
3	593.0	20697.6	7660.0	0.00	6.86	671.46	7660.00	588.7	0.00003	5873.2
4	594.0	26641.2	8860.0	0.00	6.86	673.26	8860.00	588.8	0.00002	5889.0
5	596.8	42642.4	12260.0	0.00	6.86	675.63	12260.00	589.0	0.00001	5909.7

Dike @ 601

SEGMENT TABLE FOR SECTION 8.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	190.	38.	1445.	34.	2.
1710.	VELOCITY FPS	2.49	0.25	0.68	2.64	0.70	0.15
2	DISCHARGE CFS	3510.	1915.	42.	1362.	38.	153.
3510.	VELOCITY FPS	1.38	0.35	0.52	2.09	0.56	0.22
3	DISCHARGE CFS	7660.	5000.	42.	1134.	36.	1447.
7660.	VELOCITY FPS	0.64	0.36	0.32	1.41	0.33	0.24
4	DISCHARGE CFS	8860.	5666.	42.	1027.	36.	2089.
8860.	VELOCITY FPS	0.50	0.34	0.27	1.18	0.27	0.24
5	DISCHARGE CFS	12260.	7480.	48.	908.	44.	3781.
12260.	VELOCITY FPS	0.36	0.29	0.20	0.88	0.20	0.24
1	ELEV 588.7 KD	122057.	9038.	2847.	107626.	2543.	2.
2	ELEV 590.5 KD	355558.	190456.	4385.	143799.	4043.	12874.
3	ELEV 593.0 KD	1363301.	893966.	7590.	205247.	6582.	249916.
4	ELEV 594.0 KD	1994464.	1276221.	9409.	231637.	8167.	469030.
5	ELEV 596.8 KD	4140703.	2529403.	16167.	308599.	14771.	1271762.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 8.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
579.60	0.							
580.	24.	61.	595.	1.	3.	587.	3.	1.
581.	87.	64.	4773.	1.	19.	4734.	17.	1.
582.	151.	66.	11782.	1.	81.	11627.	72.	1.
583.	219.	69.	21171.	1.	205.	20780.	183.	1.
584.	289.	71.	32712.	1.	408.	31937.	364.	1.
585.	361.	74.	46270.	1.	704.	44932.	629.	1.
586.	436.	76.	61742.	1.	1107.	59643.	989.	1.
587.	517.	111.	79083.	3.	1631.	75975.	1457.	1.
588.	798.	633.	100678.	464.	2287.	93849.	2043.	1.
589.	2154.	2128.	146935.	17617.	3086.	113204.	2758.	20.
590.	5248.	3703.	268154.	112230.	3981.	133984.	3611.	3986.
591.	9476.	4817.	500856.	302280.	4925.	156141.	4511.	28201.
592.	14645.	5857.	846357.	560749.	6082.	179636.	5405.	83084.
593.	20509.	5873.	1349844.	883454.	7537.	204428.	6535.	244718.
594.	26388.	5889.	1967968.	1260100.	9322.	230488.	8087.	459971.
595.	32281.	5896.	2672342.	1677372.	11476.	257783.	10107.	713371.
596.	38181.	5904.	3474866.	2144943.	13999.	286287.	12579.	1014935.
597.	44090.	5912.	4365331.	2657380.	16923.	315975.	15550.	1357497.
598.	50004.	5919.	5351561.	3219205.	20268.	346823.	19050.	1745555.
599.	55927.	5927.	6409306.	3817617.	24066.	378811.	23133.	2164939.
600.	61859.	5935.	7539789.	4453582.	28337.	411918.	27821.	2617110.
601.	67805.	5949.	8752433.	5132699.	32444.	446125.	32696.	3107839.
602.	73769.	5974.	10041377.	5852449.	35839.	481416.	37351.	3634312.
603.	79743.	5974.	11387555.	6597730.	43988.	517773.	46460.	4180682.
604.	85717.	5974.	12819402.	7387155.	53096.	555183.	56726.	4766714.
605.	91691.	5974.	14318435.	8211414.	62847.	593628.	67757.	5382451.
606.	97666.	5975.	15873991.	9065228.	73105.	633097.	79386.	6022571.
607.	103641.	5975.	17506444.	9958808.	84169.	673577.	91980.	6697725.
608.	109616.	5975.	19191748.	10880141.	95679.	715053.	105096.	7395409.
609.	115591.	5976.	20939526.	11834071.	107793.	757516.	118930.	8120796.
610.	121567.	5976.	22756578.	12823950.	120599.	800953.	133586.	8877293.
611.	127543.	5976.	24553502.	13805406.	132898.	845354.	147612.	9620022.
612.	133519.	5976.	26399856.	14813101.	145594.	890708.	162097.	10383765.
613.	139495.	5976.	28322532.	15860342.	159062.	937005.	177498.	11182113.
614.	145471.	5976.	30322304.	16947450.	173321.	984237.	193842.	12015571.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DHS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.48	1.37	0.00	0.00	0.00	1.37	2.77	8.45	4.60	8.73	3177.14	5954.12	583.07	0.00
2	0.23	2.54*	0.00	0.00	0.00*	2.54	3.48	4.40	1.79	6.17	9858.88	14300.65	583.92	0.00
3	0.13	3.07*	0.00	0.00	0.00*	3.07	1.68	2.40	1.19	2.54	24274.11	25214.96	581.68	0.00
4	0.11	3.21*	0.00	0.00	0.00*	3.21	1.47	1.99	1.11	2.05	30207.94	30915.10	580.88	0.00
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSPG MICROCOMPUTER TEST VERSION *****

ROAD SECTION 9.0 Verne Road

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	579.00	0.0	0.00	579.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	589.58	1710.0	0.78	588.80	1710.00	1710.0	617.7	0.0	0.0	0.0	0.0	0.0
2	591.34	3510.0	0.86	590.48	3510.00	2565.4	746.9	0.0	0.0	944.6	332.4	627.8
3	593.20	7660.0	0.16	593.04	7660.00	1415.5	943.7	0.0	0.0	6244.5	4175.6	3358.3
4	594.17	8860.0	0.12	594.05	8860.00	1321.3	1021.2	0.0	0.0	7538.7	8050.4	4704.9
5	596.82	12260.0	0.06	596.76	12260.00	1577.9	1102.1	0.0	0.0	10682.1	29479.0	10536.2

Dike - 599.7

MIN ROAD ELEVATION = 590.20 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 595.10 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 9.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	579.6	0.0	0.0							
LOW GRND	579.6	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	579.6	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	589.6	3603.9	1710.0	0.00	0.55	30.77	1710.00	582.5	0.00007	3350.3
2	591.3	11077.4	3510.0	0.00	0.55	49.61	3510.00	584.2	0.00003	5403.0
3	593.2	21691.6	7660.0	0.00	0.55	53.96	7660.00	588.7	0.00003	5875.9
4	594.2	27384.0	8860.0	0.00	0.55	54.09	8860.00	588.8	0.00002	5889.9
5	596.8	43014.8	12260.0	0.00	0.55	54.27	12260.00	589.0	0.00001	5910.2

SEGMENT TABLE FOR SECTION 9.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	572.	31.	1068.	28.	11.
1710.	VELOCITY FPS	1.43	0.21	0.46	1.79	0.48	0.09
2	DISCHARGE CFS	3510.	2275.	30.	936.	27.	241.
3510.	VELOCITY FPS	0.75	0.27	0.32	1.33	0.34	0.13
3	DISCHARGE CFS	7660.	4978.	41.	1080.	35.	1526.
7660.	VELOCITY FPS	0.60	0.35	0.30	1.32	0.30	0.24
4	DISCHARGE CFS	8860.	5648.	41.	997.	36.	2139.
8860.	VELOCITY FPS	0.48	0.33	0.26	1.14	0.26	0.24
5	DISCHARGE CFS	12260.	7473.	48.	901.	44.	3794.
12260.	VELOCITY FPS	0.36	0.29	0.20	0.87	0.19	0.24
1	ELEV 589.6 KD	196891.	64138.	3609.	124836.	3225.	1083.
2	ELEV 591.3 KD	597681.	384230.	5281.	163986.	4789.	39395.
3	ELEV 593.2 KD	1454036.	950875.	7876.	209571.	6830.	278884.
4	ELEV 594.2 KD	2073873.	1324348.	9665.	235016.	8406.	496437.
5	ELEV 596.8 KD	4197122.	2561900.	16359.	310490.	14967.	1293404.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 9.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
579.60	0.							
580.	24.	61.	595.	1.	3.	587.	3.	1.
581.	87.	64.	4773.	1.	19.	4734.	17.	1.
582.	151.	66.	11782.	1.	81.	11627.	72.	1.
583.	219.	69.	21171.	1.	205.	20780.	183.	1.
584.	289.	71.	32712.	1.	408.	31937.	364.	1.
585.	361.	74.	46270.	1.	704.	44932.	629.	1.
586.	436.	76.	61742.	1.	1107.	59643.	989.	1.
587.	517.	111.	79083.	3.	1631.	75975.	1457.	1.
588.	798.	633.	100678.	464.	2287.	93849.	2043.	1.
589.	2154.	2128.	146935.	17617.	3086.	113204.	2758.	20.
590.	5248.	3703.	268154.	112230.	3981.	133984.	3611.	3986.
591.	9476.	4817.	500856.	302280.	4925.	156141.	4511.	28201.
592.	14645.	5857.	846357.	560749.	6082.	179635.	5405.	83084.
593.	20509.	5873.	1349844.	883454.	7537.	204428.	6535.	244718.
594.	26388.	5889.	1967968.	1260100.	9322.	230488.	8087.	459971.
595.	32281.	5896.	2672342.	1677372.	11476.	257783.	10107.	713371.
596.	38181.	5904.	3474866.	2144943.	13999.	286287.	12579.	1014935.
597.	44090.	5912.	4365331.	2657380.	16923.	315975.	15550.	1357497.
598.	50004.	5919.	5351561.	3219205.	20268.	346823.	19050.	1745555.
599.	55927.	5927.	6409306.	3817617.	24066.	378811.	23133.	2164939.
600.	61859.	5935.	7539789.	4453582.	28337.	411918.	27821.	2617110.
601.	67805.	5949.	8752433.	5132699.	32444.	446125.	32696.	3107839.
602.	73769.	5974.	10041377.	5852449.	35839.	481416.	37351.	3634312.
603.	79743.	5974.	11387555.	6597730.	43988.	517773.	46460.	4180682.
604.	85717.	5974.	12819402.	7387155.	53096.	555183.	56726.	4766714.
605.	91691.	5974.	14318435.	8211414.	62847.	593628.	67757.	5382451.
606.	97666.	5975.	15873991.	9065228.	73105.	633097.	79386.	6022571.
607.	103641.	5975.	17506444.	9958808.	84169.	673577.	91980.	6697725.
608.	109616.	5975.	19191748.	10880141.	95679.	715053.	105096.	7395409.
609.	115591.	5976.	20939526.	11834071.	107793.	757516.	118930.	8120796.
610.	121567.	5976.	22756578.	12823950.	120599.	800953.	133586.	8877293.
611.	127543.	5976.	24553502.	13805406.	132898.	845354.	147612.	9620022.
612.	133519.	5976.	26399856.	14813101.	145594.	890708.	162097.	10383765.
613.	139495.	5976.	28322532.	15860342.	159062.	937005.	177498.	11182113.
614.	145471.	5976.	30322304.	16947450.	173321.	984237.	193842.	12015571.

***** WSPC MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

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TITLE      DISCHARGE FROM DENSLOW DRAIN TO MITCHELL CREEK
CHANGE     DISCHARGE
DISCHARGE  -1.       1710.     3490.     7540.     8740.     12130.
END
SEGMENT    9.5       1         N         -190.                         147
N VALUE    .060                                                        148
SEGMENT    9.5       2         N         -30.                          149
N VALUE    .090                                                        150
SEGMENT    9.5       3         C         30.                           151
N VALUE    .033                                                        152
SEGMENT    9.5       4         N         145.                          153
N VALUE    .090                                                        154
SEGMENT    9.5       5         N         3780.                         155
N VALUE    .105                                                        156
SEGMENT    9.9       1         N         -190.                         157
N VALUE    .060                                                        158
SEGMENT    9.9       2         N         -30.                          159
N VALUE    .090                                                        160
SEGMENT    9.9       3         C         30.                           161
N VALUE    .033                                                        162
SEGMENT    9.9       4         N         145.                          163
N VALUE    .090                                                        164
SEGMENT    9.9       5         N         3781.                         165
N VALUE    .060                                                        166
SECTION    9.9                                                         167
           -2940.    596.      -2915.    592.      -2860.    591.      168
           -1390.    590.5     -190.     593.      -80.      602.      169
           -70.      602.      -30.      579.3     30.       579.3     170
           90.       601.      100.      601.      145.      592.      171
           275.      592.9     865.      591.      885.      595.      172
           945.      593.      3135.     593.      3340.     594.      173
           3510.     595.      3780.     596.      -2941.    610.      174
           3781.     610.
ENDTABLE                                                               175
```

----------MESSAGE - DATA POINTS ON SECTION 9.9 REORDERED BY PROGRAM ACCORDING TO X VALUES
DUPLICATE X POINTS NOT CHANGED----------

```
BPR        10.0      A         1.        7.                            176
PIER       579.3     2.5                                               177
GIRDER     599.6     599.1     45.       .8        2.7                 178
           -53.1     602.7     -53.0     599.1     53.0      599.1     179
           53.1      602.7                                             180
ENDTABLE                                                               181
SECTION    10.0                                                        182
           -5500.    595.      -550.     593.9     -450.     594.4     183
           -350.     595.2     -200.     599.5     -125.     602.1     184
           -53.1     602.7     -53.      587.8     -25.      580.3     185
           0.        579.3     39.       579.8     53.       586.1     186
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-------------------------------
          53.1      602.7     143.      602.      243.      598.5     187
          350.      594.9     450.      594.1     550.      594.0     188
          4250.     595.      -5501.    610.      4251.     610.      189
ENDTABLE                                                               190
---------------------MESSAGE - DATA POINTS ON SECTION 10.0   REORDERED BY PROGRAM ACCORDING TO X VALUES
                    DUPLICATE X POINTS NOT CHANGED--------------------
SEGMENT   10.9      1         N         -140.                          191
N VALUE   .060                                                         192
SEGMENT   10.9      2         N         -25.                           193
N VALUE   .090                                                         194
SEGMENT   10.9      3         C         25.                            195
N VALUE   .033                                                         196
SEGMENT   10.9      4         N         145.                           197
N VALUE   .090                                                         198
SEGMENT   10.9      5         N         1380.                          199
N VALUE   .060                                                         200
SECTION   10.9                                                         201
          -1885.    610.      -1885.    597.      -1780.    595.      202
          -1180.    595.      -1170.    594.      -320.     594.3     203
          -140.     595.      -75.      604.6     -65.      604.0     204
          -25.      578.1     25.       578.1     80.       606.      205
          95.       606.      110.      600.      145.      595.      206
          525.      597.      930.      594.4     1380.     596.6     207
          1380.     610.                                              208
ENDTABLE                                                               209
BPR       11.0      B         1         3.                             210
PIER      578.1     3.0                                              211
GIRDER    598.3     597.8     45.       .8        2.7                212
          -47.1     600.4     -47.      597.8     47.       597.8     213
          47.1      599.9                                             214
ENDTABLE                                                               215
SECTION   11.0                                                         216
          -6800.    600.      -500.     595.5     -300.     596.4     217
          -200.     597.      -100.     599.7     -47.1     600.4     218
          -47.      586.8     -28.      579.3     -5.       578.1     219
          -4.9      586.8     4.9       586.8     5.0       578.1     220
          32.       580.1     47.       585.8     47.1      599.9     221
          100.      598.9     200.      596.0     400.      595.8     222
          500.      595.8     4800.     600.                            223
ENDTABLE                                                               224
SEGMENT   11.5      1         N         -140.                          225
N VALUE   .060                                                         226
SEGMENT   11.5      2         N         -10.                           227
N VALUE   .085                                                         228
SEGMENT   11.5      3         C         15.                            229
N VALUE   .033                                                         230
SEGMENT   11.5      4         N         80.                            231
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
N VALUE   .085                                                          232
SEGMENT   11.5      5         N         625.                            233
N VALUE   .060                                                          234
SECTION   11.5                                                          235
          -2320.    607.      -2190.    600.      -2030.    597.        236
          -1800.    598.      -1340.    598.      -800.     597.        237
          -140.     599.      -100.     607.      -87.      607.        238
          -10.      580.4     15.       580.4     50.       607.        239
          62.       607.      80.       600.      180.      600.        240
          505.      605.      560.      606.      625.      605.        241
ENDTABLE                                                                242
COMPUTE   9.5       11.5      9.1
-----------------------------END OF DATA LISTING----------------------------
```

```
                    COMPUTE   9.5       11.5      9.1


-----------------------------STARTING DATA FROM PREVIOUS COMPUTATIONS-----------------------------
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 9.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	579.3	0.0	0.0							
LOW GRND	579.3	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	579.3	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	589.7	870.3	1710.0	0.00	1.98	3.53	1710.00	582.1	0.00014	107.1
2	591.5	2634.0	3490.0	0.00	1.98	75.42	3490.00	583.7	0.00024	2289.4
3	593.4	9572.0	7540.0	0.00	1.98	174.50	7540.00	586.5	0.00020	5297.0
4	594.3	14642.9	8740.0	0.00	1.98	201.34	8740.00	587.1	0.00012	6111.7
5	596.9	31030.2	12130.0	0.00	1.98	217.30	12130.00	588.8	0.00004	6596.1

SEGMENT TABLE FOR SECTION 9.5

CSM		TOTAL	SEG NO 1	2	3	4	5
			N	N	C	N	N
1	DISCHARGE CFS	1710.	0.	51.	1575.	84.	0.
1710.	VELOCITY FPS	2.43	0.00	0.53	2.52	0.56	0.00
2	DISCHARGE CFS	3490.	526.	102.	2683.	167.	13.
3490.	VELOCITY FPS	3.31	0.36	0.77	3.65	0.80	0.15
3	DISCHARGE CFS	7540.	3678.	122.	3121.	209.	410.
7540.	VELOCITY FPS	2.51	0.61	0.68	3.68	0.74	0.18
4	DISCHARGE CFS	8740.	4827.	102.	3629.	186.	997.
8740.	VELOCITY FPS	1.75	0.57	0.48	2.92	0.57	0.21
5	DISCHARGE CFS	12130.	7194.	96.	1887.	163.	2791.
12130.	VELOCITY FPS	0.82	0.46	0.26	1.79	0.33	0.20
1 ELEV 589.7 KD		145616.	1.	4315.	134167.	7132.	1.
2 ELEV 591.5 KD		216344.	23034.	6639.	175645.	10890.	135.
3 ELEV 593.4 KD		514654.	245713.	8695.	222916.	14946.	22384.
4 ELEV 594.3 KD		782896.	433191.	9596.	246808.	17387.	75913.
5 ELEV 596.9 KD		2023277.	1203523.	16121.	320896.	27558.	455180.

***** WSP2 MICROCOMPUTER TEST VERSION *****

K.D TABLE FOR CROSS SECTION 9.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	K.D TOTAL	K.D BY SEGMENT 1	2	3	4	5
579.30	0.							
580.	43.	63.	1503.	1.	4.	1491.	5.	1.
581.	109.	68.	6637.	1.	34.	6544.	57.	1.
582.	179.	72.	14467.	1.	118.	14150.	195.	1.
583.	253.	77.	24654.	1.	273.	23925.	452.	1.
584.	332.	81.	37026.	1.	518.	35649.	856.	1.
585.	416.	86.	51472.	1.	866.	49170.	1431.	1.
586.	504.	90.	67919.	1.	1333.	64376.	2203.	1.
587.	597.	95.	86310.	1.	1931.	81178.	3192.	1.
588.	694.	99.	106610.	1.	2675.	99503.	4421.	1.
589.	795.	104.	128787.	1.	3575.	119290.	5910.	1.
590.	902.	108.	152822.	1.	4644.	140488.	7677.	1.
591.	1697.	1489.	189034.	930.	5894.	163051.	9743.	18.
592.	3847.	2707.	274487.	50461.	7335.	186938.	11853.	723.
593.	7567.	4327.	432464.	174226.	8439.	212114.	14017.	10515.
594.	12788.	6038.	692612.	366524.	9228.	238547.	16476.	53235.
595.	18934.	6283.	1078439.	620677.	10571.	266208.	19634.	159615.
596.	25362.	6552.	1552063.	917716.	13085.	295070.	23547.	300318.
597.	31940.	6599.	2114496.	1254077.	16664.	325108.	28245.	484567.
598.	38550.	6631.	2772731.	1641595.	21232.	356301.	33703.	716722.
599.	45179.	6643.	3515757.	2073395.	26969.	388626.	40000.	986198.
600.	51835.	6665.	4315988.	2533389.	33989.	422065.	47224.	1277663.
601.	58515.	6689.	5188826.	3031957.	42336.	456599.	54942.	1601344.
602.	65214.	6709.	6136613.	3569491.	52495.	492211.	64324.	1957145.
603.	71932.	6718.	7149239.	4138518.	65340.	528886.	77574.	2337877.
604.	78653.	6721.	8222871.	4738788.	80794.	566608.	91746.	2743670.
605.	85374.	6721.	9372973.	5379023.	98941.	605362.	107130.	3182285.
606.	92095.	6721.	10563754.	6040397.	117836.	645135.	123075.	3636451.
607.	98817.	6722.	11821843.	6737297.	138387.	685915.	140084.	4119495.
608.	105538.	6722.	13142342.	7467122.	160397.	727688.	158061.	4628887.
609.	112260.	6722.	14500541.	8216796.	183112.	770444.	176566.	5152857.
610.	118982.	6722.	15934479.	9006476.	207719.	814172.	196285.	5709701.
611.	125704.	6722.	17401346.	9813597.	232888.	858859.	216452.	6278953.
612.	132426.	6722.	18910034.	10642891.	258976.	904498.	237249.	6865364.
613.	139148.	6722.	20395636.	11460375.	284023.	951077.	257531.	7438344.
614.	145870.	6722.	21949374.	12313963.	310653.	998587.	278878.	8040275.
615.	152592.	6722.	23572192.	13204177.	338916.	1047018.	301311.	8671725.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 9.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	579.3	0.0	0.0							
LOW GRND	579.3	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	579.3	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	589.9	890.9	1710.0	0.00	1.98	3.10	1710.00	582.1	0.00013	108.0
2	591.8	3445.7	3490.0	0.00	1.98	73.72	3490.00	583.7	0.00018	2569.1
3	593.7	10770.6	7540.0	0.00	1.98	168.65	7540.00	586.5	0.00014	5877.1
4	594.4	15503.2	8740.0	0.00	1.98	176.36	8740.00	587.1	0.00008	6145.7
5	596.9	31277.8	12130.0	0.00	1.98	189.31	12130.00	588.8	0.00002	6597.0

602 Left
601 Right

SEGMENT TABLE FOR SECTION 9.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	0.	55.	1564.	91.	0.
1710.	VELOCITY FPS	2.36	0.00	0.56	2.46	0.58	0.00
2	DISCHARGE CFS	3490.	827.	98.	2359.	159.	46.
3490.	VELOCITY FPS	2.72	0.38	0.71	3.13	0.73	0.26
3	DISCHARGE CFS	7540.	3780.	110.	2668.	193.	788.
7540.	VELOCITY FPS	1.91	0.56	0.60	3.10	0.66	0.29
4	DISCHARGE CFS	8740.	4550.	91.	2186.	167.	1746.
8740.	VELOCITY FPS	1.35	0.51	0.42	2.41	0.50	0.34
5	DISCHARGE CFS	12130.	6185.	82.	1502.	139.	4221.
12130.	VELOCITY FPS	0.62	0.40	0.22	1.42	0.28	0.31
1 ELEV	589.9 KD	151200.	1.	4855.	138316.	8026.	1.
2 ELEV	591.8 KD	245786.	41863.	7610.	183172.	12358.	784.
3 ELEV	593.7 KD	642778.	321915.	9483.	229477.	16631.	65272.
4 ELEV	594.4 KD	948865.	501155.	10471.	250678.	19100.	167462.
5 ELEV	596.9 KD	2542217.	1304528.	17435.	322040.	29736.	868477.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 9.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
579.30	0.							
580.	43.	63.	1503.	1.	4.	1491.	6.	1.
581.	109.	68.	6644.	1.	37.	6544.	61.	1.
582.	179.	72.	14489.	1.	127.	14150.	209.	1.
583.	253.	77.	24706.	1.	293.	23925.	485.	1.
584.	332.	81.	37125.	1.	555.	35649.	917.	1.
585.	416.	86.	51637.	1.	928.	49170.	1534.	1.
586.	504.	90.	68174.	1.	1428.	64376.	2361.	1.
587.	597.	95.	86678.	1.	2070.	81178.	3422.	1.
588.	694.	99.	107120.	1.	2867.	99503.	4739.	1.
589.	795.	104.	129469.	1.	3832.	119290.	6334.	1.
590.	902.	108.	153708.	1.	4978.	140488.	8229.	1.
591.	1697.	1489.	190920.	996.	6317.	163051.	10443.	28.
592.	3847.	2707.	282158.	54085.	7862.	186938.	12705.	1356.
593.	7567.	4327.	459395.	186739.	9045.	212114.	15023.	19723.
594.	12788.	6038.	770832.	392848.	9891.	238547.	17660.	99852.
595.	18934.	6283.	1265505.	665255.	11331.	266208.	21044.	299388.
596.	25362.	6552.	1884406.	983628.	14024.	295070.	25238.	563303.
597.	31940.	6599.	2634052.	1344145.	17861.	325108.	30274.	908895.
598.	38550.	6621.	3523077.	1759498.	22757.	356301.	36123.	1344347.
599.	45179.	6643.	4533217.	2222307.	28906.	388626.	42873.	1849798.
600.	51835.	6665.	5623019.	2715339.	36430.	422065.	50615.	2396493.
601.	58515.	6689.	6816213.	3249714.	45376.	456599.	58888.	3003620.
602.	65214.	6709.	8115392.	3825854.	56265.	492211.	68944.	3670992.
603.	71932.	6718.	9504193.	4435750.	70033.	528886.	82146.	4385125.
604.	78653.	6721.	10978409.	5079132.	86596.	566608.	98336.	5146266.
605.	85374.	6721.	12560810.	5765348.	106047.	605362.	114824.	5968971.
606.	92095.	6721.	14199423.	6474222.	126299.	645135.	131914.	6820836.
607.	98817.	6722.	15933203.	7221174.	148326.	685915.	150145.	7726883.
608.	105538.	6722.	17754984.	8003416.	171917.	727688.	169414.	8682342.
609.	112260.	6722.	19628924.	8806933.	196263.	770444.	189248.	9665156.
610.	118982.	6722.	21610276.	9653328.	222638.	814172.	210383.	10709601.
611.	125704.	6722.	23636890.	10518416.	249614.	858859.	231998.	11777349.
612.	132426.	6722.	25722084.	11407272.	277576.	904498.	254288.	12877261.
613.	139148.	6722.	27771812.	12283467.	304422.	951077.	276027.	13952004.
614.	145870.	6722.	29917752.	13198361.	332964.	998587.	298907.	15081053.
615.	152592.	6722.	32161408.	14152511.	363257.	1047018.	322952.	16265441.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	1.00	0.00	0.07	1.00	-0.01	0.05	2.63	1.51	1.51	1.51	892.30	730.83	582.47	0.00
2	1.00	0.00	0.06	1.00	-0.01	0.05	4.39	1.60	1.60	7.27	3491.43	908.15	584.07	0.00
3	1.00	0.00	0.06	1.00	-0.01	0.05	8.09	1.68	1.68	7.37	10836.46	1084.09	586.68	0.00
4	0.99	0.00	0.06	1.00	-0.01	0.05	8.83	1.72	1.72	5.69	15553.19	1163.84	587.02	0.00
5	0.80	0.25	0.06	0.95	-0.08	0.23	7.07	7.50	6.20	2.56	31292.67	3955.01	586.89	0.00

D.'16 @ 602

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 10.0 Fergus

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	579.30	0.0	0.00	579.30	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	589.93	1710.0	0.02	589.91	1710.00	1710.0	649.6	0.0	0.0	0.0	0.0	0.0
2	591.88	3490.0	0.02	591.86	3490.00	3490.0	795.9	0.0	0.0	0.0	0.0	0.0
3	593.70	7540.0	0.02	593.68	7540.00	7540.0	931.8	0.0	0.0	0.0	0.0	0.0
4	594.47	8740.0	0.02	594.45	8740.00	8224.0	990.0	0.0	0.0	516.1	1232.4	4577.3
5	596.92	12130.0	0.02	596.90	12130.00	8056.8	1173.9	0.0	0.0	4073.2	22328.1	9170.4

MIN ROAD ELEVATION = 593.90 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 599.10 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 10.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.1	0.0	0.0							
LOW GRND	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	590.0	841.7	1710.0	0.00	0.23	0.42	1710.00	581.3	0.00013	91.7
2	592.0	1033.6	3490.0	0.00	0.23	0.45	3490.00	583.1	0.00031	98.8
3	594.1	1475.2	7540.0	0.00	0.23	2.19	7540.00	586.2	0.00085	476.7
4	595.1	2601.0	8740.0	0.00	0.23	7.10	8740.00	586.9	0.00077	1545.8
5	597.9	10083.1	12130.0	0.00	0.23	14.41	12130.00	588.8	0.00024	3139.0

SEGMENT TABLE FOR SECTION 10.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	0.	59.	1572.	79.	0.
1710.	VELOCITY FPS	2.55	0.00	0.54	2.65	0.57	0.00
2	DISCHARGE CFS	3490.	0.	140.	3164.	186.	0.
3490.	VELOCITY FPS	4.35	0.00	0.94	4.56	0.98	0.00
3	DISCHARGE CFS	7540.	119.	337.	6633.	448.	4.
7540.	VELOCITY FPS	7.83	0.56	1.71	8.31	1.78	0.29
4	DISCHARGE CFS	8740.	786.	370.	6997.	493.	94.
8740.	VELOCITY FPS	7.50	0.74	1.64	8.22	1.72	0.54
5	DISCHARGE CFS	12130.	4794.	273.	4984.	365.	1715.
12130.	VELOCITY FPS	3.35	0.84	0.83	5.04	0.88	0.65
1	ELEV 590.0 KD	151473.	1.	5247.	139250.	6973.	1.
2	ELEV 592.0 KD	199273.	1.	7963.	180726.	10583.	1.
3	ELEV 594.1 KD	255279.	21.	11572.	228299.	15380.	7.
4	ELEV 595.1 KD	305113.	18811.	13454.	254091.	17920.	837.
5	ELEV 597.9 KD	780845.	306715.	17800.	325771.	23806.	106753.

***** WSPI MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 10.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.10	0.							
579.	46.	53.	1905.	1.	6.	1889.	7.	1.
580.	101.	57.	6659.	1.	40.	6564.	53.	1.
581.	160.	60.	13571.	1.	122.	13283.	162.	1.
582.	222.	64.	22398.	1.	269.	21766.	358.	1.
583.	287.	67.	33001.	1.	495.	31845.	658.	1.
584.	356.	71.	45298.	1.	813.	43400.	1080.	1.
585.	429.	74.	59223.	1.	1234.	56343.	1640.	1.
586.	505.	78.	74729.	1.	1770.	70603.	2352.	1.
587.	584.	81.	91791.	1.	2432.	86121.	3233.	1.
588.	667.	85.	110380.	1.	3231.	102849.	4295.	1.
589.	754.	88.	130477.	1.	4177.	120744.	5551.	1.
590.	844.	92.	152069.	1.	5278.	139770.	7015.	1.
591.	938.	95.	175152.	1.	6546.	159893.	8700.	1.
592.	1035.	99.	199706.	1.	7988.	181085.	10616.	1.
593.	1136.	102.	225728.	1.	9614.	203319.	12777.	1.
594.	1423.	404.	256326.	11.	11432.	226571.	15194.	5.
595.	2298.	1407.	301886.	15359.	13332.	250820.	17737.	583.
596.	4593.	2457.	406060.	68823.	14255.	276046.	19142.	8451.
597.	7415.	2954.	575256.	175173.	15890.	302230.	21339.	42459.
598.	10493.	3141.	819554.	325409.	18177.	329355.	24278.	116191.
599.	13641.	3159.	1135006.	506252.	21256.	357404.	28122.	218780.
600.	16811.	3174.	1497672.	708914.	25175.	386363.	33259.	338590.
601.	19993.	3189.	1915858.	943546.	29838.	416219.	39493.	483133.
602.	23185.	3201.	2389708.	1208738.	35318.	446956.	46941.	650602.
603.	26396.	3214.	2894375.	1488045.	41732.	478564.	55011.	828194.
604.	29617.	3228.	3454941.	1799674.	49014.	511030.	63910.	1030174.
605.	32855.	3242.	4051735.	2129884.	57217.	544343.	73540.	1245496.
606.	36106.	3255.	4686985.	2480480.	68372.	578492.	82411.	1475758.
607.	39365.	3265.	5371820.	2858265.	82026.	613468.	91672.	1726108.
608.	42630.	3265.	6083953.	3246728.	96108.	649261.	106800.	1983686.
609.	45895.	3265.	6847088.	3663525.	111548.	685861.	123321.	2262256.
610.	49160.	3265.	7637882.	4094721.	127609.	723260.	140491.	2550915.
611.	52425.	3265.	8432953.	4527376.	143696.	761450.	157696.	2840077.
612.	55690.	3265.	9220375.	4954485.	159402.	800421.	174530.	3124040.
613.	58955.	3265.	10055195.	5407693.	176293.	840167.	192593.	3426884.
614.	62220.	3265.	10938779.	5887779.	194419.	880679.	211934.	3749277.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 10.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.1	0.0	0.0							
LOW GRND	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	590.2	866.4	1710.0	0.00	2.53	4.47	1710.00	581.3	0.00012	92.7
2	592.6	1094.7	3490.0	0.00	2.53	4.87	3490.00	583.1	0.00026	101.0
3	595.5	3532.9	7540.0	0.00	2.53	95.07	7540.00	586.2	0.00045	1971.9
4	596.5	5767.0	8740.0	0.00	2.53	135.62	8740.00	586.9	0.00034	2813.2
5	598.3	11484.8	12130.0	0.00	2.53	151.70	12130.00	588.8	0.00017	3146.7

604 Left
666 Right

SEGMENT TABLE FOR SECTION 10.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	0.	62.	1566.	82.	0.
1710.	VELOCITY FPS	2.48	0.00	0.54	2.58	0.57	0.00
2	DISCHARGE CFS	3490.	0.	148.	3144.	197.	0.
3490.	VELOCITY FPS	4.13	0.00	0.91	4.34	0.95	0.00
3	DISCHARGE CFS	7540.	1182.	294.	5488.	393.	183.
7540.	VELOCITY FPS	5.55	0.68	1.24	6.29	1.30	0.46
4	DISCHARGE CFS	8740.	2354.	277.	5233.	372.	505.
8740.	VELOCITY FPS	4.54	0.73	1.03	5.70	1.09	0.51
5	DISCHARGE CFS	12130.	5149.	253.	4342.	336.	2050.
12130.	VELOCITY FPS	2.74	0.80	0.71	4.30	0.76	0.64
1 ELEV	590.2 KD	157804.	1.	5709.	144506.	7587.	1.
2 ELEV	592.6 KD	215631.	1.	9166.	194281.	12183.	1.
3 ELEV	595.5 KD	335642.	35668.	14179.	264269.	18959.	2567.
4 ELEV	596.5 KD	468651.	122219.	15213.	287953.	20470.	22796.
5 ELEV	598.3 KD	914131.	384426.	19597.	338093.	26095.	145920.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 10.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.10	0.							
579.	46.	53.	1904.	1.	6.	1889.	7.	1.
580.	101.	57.	6661.	1.	41.	6564.	54.	1.
581.	160.	60.	13578.	1.	125.	13283.	167.	1.
582.	222.	64.	22414.	1.	276.	21766.	367.	1.
583.	287.	67.	33031.	1.	508.	31845.	675.	1.
584.	356.	71.	45347.	1.	833.	43400.	1107.	1.
585.	429.	74.	59296.	1.	1265.	56343.	1681.	1.
586.	505.	78.	74834.	1.	1815.	70603.	2412.	1.
587.	584.	81.	91935.	1.	2494.	86121.	3315.	1.
588.	667.	85.	110571.	1.	3313.	102849.	4404.	1.
589.	754.	88.	130725.	1.	4283.	120744.	5692.	1.
590.	844.	92.	152381.	1.	5412.	139770.	7193.	1.
591.	938.	95.	175539.	1.	6712.	159893.	8920.	1.
592.	1035.	99.	200179.	1.	8191.	181085.	10886.	1.
593.	1136.	102.	226297.	1.	9858.	203319.	13102.	1.
594.	1423.	404.	257080.	12.	11723.	226571.	15580.	5.
595.	2298.	1407.	303167.	15749.	13671.	250820.	18187.	598.
596.	4593.	2457.	409313.	70570.	14617.	276046.	19628.	8665.
597.	7415.	2954.	582038.	179621.	16294.	302230.	21881.	43538.
598.	10493.	3141.	831920.	333672.	18638.	329355.	24895.	119142.
599.	13641.	3159.	1154711.	519107.	21795.	357404.	28836.	224335.
600.	16811.	3174.	1525804.	726914.	25814.	386363.	34104.	347187.
601.	19993.	3189.	1953871.	967505.	30596.	416219.	40496.	495401.
602.	23185.	3201.	2439017.	1239431.	36215.	446956.	48133.	667122.
603.	26396.	3214.	2955661.	1525829.	42791.	478564.	56408.	849223.
604.	29617.	3228.	3529668.	1845371.	50259.	511030.	65533.	1056333.
605.	32855.	3242.	4140769.	2183966.	58670.	544343.	75408.	1277122.
606.	36106.	3255.	4791279.	2543465.	70108.	578492.	84503.	1513230.
607.	39365.	3265.	5492637.	2930842.	84109.	613468.	94000.	1769937.
608.	42630.	3265.	6221925.	3329169.	98549.	649261.	109512.	2034056.
609.	45895.	3265.	7003522.	3756549.	114381.	685861.	126452.	2319699.
610.	49160.	3265.	7813441.	4198694.	130849.	723260.	144058.	2615685.
611.	52425.	3265.	8627692.	4642335.	147345.	761450.	161700.	2912192.
612.	55690.	3265.	9434008.	5080290.	163450.	800421.	178962.	3203365.
613.	58955.	3265.	10288936.	5545005.	180769.	840167.	197483.	3513900.
614.	62220.	3265.	11193849.	6037281.	199355.	880679.	217315.	3844478.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	1.00	0.00	0.23	1.00	0.00	0.23	2.85	2.21	2.21	1.57	867.47	616.59	582.33	0.00
2	1.00	0.00	0.22	1.00	0.00	0.22	4.60	2.40	2.40	1.68	1097.38	809.36	584.19	0.00
3	0.76	0.34	0.21	0.91	0.14	0.67	4.03	9.85	7.71	6.93	3635.24	3317.15	584.46	0.00
4	0.70	0.48	0.20	0.87	0.15	0.81	2.98	10.13	7.40	9.01	5870.39	3843.73	583.74	0.00
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 11.0 Birch Rd

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	578.10	0.0	0.00	578.10	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	590.27	1710.0	0.02	590.25	1710.00	1710.0	600.1	0.0	0.0	0.0	0.0	0.0
2	592.65	3490.0	0.02	592.63	3490.00	3490.0	758.0	0.0	0.0	0.0	0.0	0.0
3	596.56	7540.0	0.98	595.58	7540.00	3816.2	954.8	0.0	0.0	3723.8	1436.4	2814.3
4	596.81	8740.0	0.32	596.49	8740.00	3016.6	1015.4	0.0	0.0	5723.4	2214.6	3472.5
5	598.43	12130.0	0.10	598.33	12130.00	2670.5	1500.1	0.0	0.0	9459.5	11145.8	7537.3

Bankfull 599.9 R

MIN ROAD ELEVATION = 595.50 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 597.80 FT OPENING NO.= 1

***** WSPZ MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 11.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	578.1	0.0	0.0							
LOW GRND	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	578.1	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	590.3	619.4	1710.0	0.00	0.11	0.35	1710.00	582.7	0.00036	76.4
2	592.7	816.2	3490.0	0.00	0.11	0.40	3490.00	585.0	0.00077	86.6
3	596.7	3501.7	7540.0	0.00	0.11	9.29	7540.00	588.6	0.00082	2024.4
4	596.9	4045.8	8740.0	0.00	0.11	9.56	8740.00	589.5	0.00089	2083.2
5	598.5	7535.5	12130.0	0.00	0.11	10.73	12130.00	591.6	0.00051	2337.4

SEGMENT TABLE FOR SECTION 11.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	0.	231.	1385.	94.	0.
1710.	VELOCITY FPS	4.11	0.00	1.07	4.54	0.95	0.00
2	DISCHARGE CFS	3490.	0.	544.	2725.	221.	0.
3490.	VELOCITY FPS	6.64	0.00	1.76	7.45	1.57	0.00
3	DISCHARGE CFS	7540.	2027.	1019.	4076.	419.	0.
7540.	VELOCITY FPS	6.86	0.88	2.04	8.79	1.85	0.00
4	DISCHARGE CFS	8740.	2876.	1087.	4326.	451.	0.
8740.	VELOCITY FPS	6.96	1.02	2.12	9.20	1.93	0.00
5	DISCHARGE CFS	12130.	6901.	982.	3770.	412.	65.
12130.	VELOCITY FPS	4.45	1.15	1.61	7.40	1.50	0.57
1	ELEV 590.3 MD	89993.	1.	12139.	72931.	4921.	1.
2	ELEV 592.7 MD	126142.	1.	19644.	98532.	7964.	1.
3	ELEV 596.7 MD	253347.	55242.	36603.	146482.	15019.	1.
4	ELEV 596.9 MD	277710.	74566.	37650.	149908.	15584.	1.
5	ELEV 598.5 MD	526797.	291847.	44638.	171426.	18709.	177.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 11.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
578.10	0.							
579.	24.	29.	964.	1.	12.	944.	6.	1.
580.	55.	33.	3404.	1.	85.	3282.	34.	1.
581.	90.	37.	7013.	1.	263.	6641.	106.	1.
582.	130.	41.	11700.	1.	579.	10883.	235.	1.
583.	173.	46.	17421.	1.	1064.	15922.	431.	1.
584.	221.	50.	24159.	1.	1745.	21700.	708.	1.
585.	273.	54.	31903.	1.	2650.	28171.	1074.	1.
586.	329.	58.	40649.	1.	3802.	35301.	1541.	1.
587.	389.	62.	50409.	1.	5225.	43060.	2118.	1.
588.	454.	67.	61185.	1.	6941.	51424.	2814.	1.
589.	523.	71.	72986.	1.	8972.	60372.	3637.	1.
590.	596.	75.	85825.	1.	11338.	69884.	4596.	1.
591.	673.	79.	99721.	1.	14061.	79946.	5700.	1.
592.	755.	84.	114676.	1.	17159.	90542.	6956.	1.
593.	841.	88.	130702.	1.	20651.	101659.	8372.	1.
594.	936.	150.	147842.	3.	24558.	113285.	9955.	1.
595.	1161.	442.	168309.	188.	28896.	125410.	11714.	1.
596.	2396.	1598.	212965.	11208.	33684.	138022.	13655.	1.
597.	4236.	2104.	303773.	82737.	38020.	151114.	15785.	1.
598.	6405.	2291.	448693.	218246.	42332.	164676.	17891.	11.
599.	8734.	2386.	646944.	394222.	47157.	178701.	19595.	3052.
600.	11184.	2482.	884493.	598589.	53089.	193181.	21820.	12661.
601.	13718.	2577.	1167333.	843862.	59917.	208108.	24439.	27467.
602.	16324.	2673.	1496722.	1127582.	67677.	223477.	27461.	49337.
603.	19082.	2799.	1854010.	1429272.	76625.	239281.	31024.	75034.
604.	21901.	2900.	2263195.	1773183.	85992.	255514.	34533.	111822.
605.	24821.	2935.	2719586.	2143872.	95043.	272170.	37315.	168621.
606.	27759.	2945.	3167343.	2498986.	107706.	289245.	42324.	220840.
607.	30704.	2945.	3631259.	2861284.	122997.	306733.	48836.	271686.
608.	33649.	2945.	4143810.	3261055.	139827.	324629.	56077.	331890.
609.	36594.	2945.	4708211.	3700723.	158289.	342930.	64099.	402774.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 11.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	580.4	0.0	0.0							
LOW GRND	580.4	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	580.4	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	591.9	569.0	1710.0	0.00	2.19	5.91	1710.00	585.0	0.00044	73.6
2	595.4	847.1	3490.0	0.00	2.19	7.07	3490.00	587.3	0.00069	88.0
3	599.2	4021.8	7540.0	0.00	2.19	167.17	7540.00	590.9	0.00064	2080.6
4	599.6	4942.0	8740.0	0.00	2.19	175.16	8740.00	591.8	0.00060	2180.0
5	600.6	7124.7	12130.0	0.00	2.19	186.46	12130.00	593.9	0.00055	2320.6

607L
607R

SEGMENT TABLE FOR SECTION 11.5

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1710.	0.	229.	1388.	93.	0.
1710.	VELOCITY FPS	4.37	0.00	1.19	4.81	1.06	0.00
2	DISCHARGE CFS	3490.	0.	574.	2683.	233.	0.
3490.	VELOCITY FPS	6.35	0.00	1.77	7.17	1.57	0.00
3	DISCHARGE CFS	7540.	2517.	962.	3663.	399.	0.
7540.	VELOCITY FPS	5.86	0.90	1.87	7.79	1.71	0.00
4	DISCHARGE CFS	8740.	3605.	988.	3732.	415.	0.
8740.	VELOCITY FPS	5.39	0.98	1.84	7.76	1.70	0.00
5	DISCHARGE CFS	12130.	6753.	1042.	3843.	438.	54.
12130.	VELOCITY FPS	4.64	1.19	1.74	7.61	1.62	0.61
1	ELEV 591.9 KD	81673.	1.	10902.	66348.	4420.	1.
2	ELEV 595.4 KD	133232.	1.	21864.	102501.	8864.	1.
3	ELEV 599.2 KD	282199.	76894.	39290.	149757.	16257.	1.
4	ELEV 599.6 KD	340664.	126579.	41176.	155621.	17287.	2.
5	ELEV 600.6 KD	508615.	274595.	45756.	168960.	19235.	68.

***** WSP2 MICROCOMPUTER TEST VERSION *****

K.D TABLE FOR CROSS SECTION 11.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
580.40	0.							
581.	16.	28.	491.	1.	4.	480.	4.	1.
582.	45.	32.	2545.	1.	56.	2464.	23.	1.
583.	79.	36.	5828.	1.	205.	5536.	83.	1.
584.	117.	40.	10212.	1.	488.	9523.	198.	1.
585.	160.	44.	15655.	1.	939.	14330.	381.	1.
586.	206.	49.	22124.	1.	1587.	19892.	643.	1.
587.	257.	53.	29622.	1.	2459.	26159.	997.	1.
588.	312.	57.	38138.	1.	3583.	33095.	1453.	1.
589.	371.	61.	47682.	1.	4982.	40668.	2020.	1.
590.	435.	65.	58254.	1.	6681.	48853.	2708.	1.
591.	502.	70.	69870.	1.	8702.	57627.	3528.	1.
592.	574.	74.	82539.	1.	11067.	66972.	4486.	1.
593.	650.	78.	96281.	1.	13798.	76871.	5593.	1.
594.	730.	82.	111098.	1.	16915.	87308.	6857.	1.
595.	814.	86.	127006.	1.	20438.	98270.	8286.	1.
596.	902.	91.	144022.	1.	24388.	109744.	9887.	1.
597.	1015.	287.	162291.	59.	28784.	121721.	11669.	1.
598.	2025.	1251.	201595.	3519.	33643.	134188.	13639.	1.
599.	3606.	2036.	274293.	61157.	38453.	147137.	15804.	1.
600.	5706.	2263.	411371.	189853.	42775.	160559.	18173.	2.
601.	8036.	2358.	598861.	345998.	47729.	174446.	19932.	608.
602.	10445.	2453.	835133.	555630.	53536.	188790.	22071.	9915.
603.	12936.	2549.	1120485.	806289.	60296.	203584.	24633.	23955.
604.	15542.	2644.	1443205.	1081440.	68213.	218821.	27721.	43357.
605.	18250.	2760.	1809242.	1394177.	77156.	234495.	31257.	69590.
606.	21025.	2890.	2223573.	1747641.	87126.	250599.	35232.	102973.
607.	23945.	2924.	2679127.	2117614.	96407.	267130.	38105.	156013.
608.	26875.	2945.	3160554.	2504772.	108043.	284079.	42322.	216525.
609.	29820.	2945.	3627629.	2872061.	123557.	301444.	48908.	266967.
610.	32765.	2945.	4148540.	3277752.	140648.	319218.	56239.	326799.
611.	35710.	2945.	4720633.	3724363.	159416.	337398.	64370.	397361.

***** WSPI MICROCOMPUTER TEST VERSION *****

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----------------------- LIST OF INPUT DATA WITH LIMITED EDITING----------------------
TITLE     DISCHARGE FROM MITCHELL CREEK TO STRUCTURE 4
CHANGE    DISCHARGE
DISCHARGE -1.       1650.     3420.     7340.     8520.     11880.
END
SEGMENT   11.9      1         N         -135.                         243
N VALUE   .060                                                        244
SEGMENT   11.9      2         N         -10.                          245
N VALUE   .070                                                        246
SEGMENT   11.9      3         C         10.                           247
N VALUE   .033                                                        248
SEGMENT   11.9      4         N         100.                          249
N VALUE   .070                                                        250
SEGMENT   11.9      5         N         1105.                         251
N VALUE   .060                                                        252
SECTION   11.9                                                        253
          -1390.    612.      -1340.    610.      -1250.    600.      254
          -1240.    599.      -540.     599.5     -135.     600.      255
          -110.     605.      -90.      607.      -80.      607.      256
          -10.      583.8     10.       583.8     60.       607.      257   601.7
          70.       607.      100.      600.      240.      605.      258
          320.      608.      615.      608.      915.      609.      259
          1090.     610.      1105.     611.                          260
ENDTABLE                                                              261
BPR       12.0      A         1.        3.                            262
PIER      583.8     2.                                                263
GIRDER    602.9     602.4     0.        .8        2.7                 264
          -52.1     604.8     -52.      602.4     52.       602.4     265
          52.1      604.6                                             266
ENDTABLE                                                              267
SECTION   12.0                                                        268
          -2450.    612.      -600.     605.3     -200.     605.2     269
          -100.     604.9     -52.1     604.8     -52.      599.      270
          -19.      584.8     0.        583.8     20.       584.0     271
          52.       598.8     52.1      604.6     100.      604.4     272
          200.      605.4     300.      607.2     3400.     611.      273
ENDTABLE                                                              274
SEGMENT   12.5      1         N         -60.                          275
N VALUE   .060                                                        276
SEGMENT   12.5      2         N         -30.                          277
N VALUE   .085                                                        278
SEGMENT   12.5      3         C         30.                           279
N VALUE   .033                                                        280
SEGMENT   12.5      4         N         100.                          281
N VALUE   .085                                                        282
SEGMENT   12.5      5         N         600.                          283
```

***** WSPS MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
N VALUE    .075                                                    284
SECTION    12.5                                                    285
           -1000.   612.     -885.    604.     -785.    602.       286
           -300.    602.     -60.     602.     -30.     584.7      287
           0.       584.7    30.      584.7    100.     608.       288
           175.     610.     230.     612.     600.     614.       289
ENDTABLE                                                           290
SEGMENT    12.9     1        N        -250.                       291
N VALUE    .060                                                    292
SEGMENT    12.9     2        N        -22.                        293
N VALUE    .085                                                    294
SEGMENT    12.9     3        C        22.                         295
N VALUE    .033                                                    296
SEGMENT    12.9     4        N        340.                        297
N VALUE    .085                                                    298
SEGMENT    12.9     5        N        500.                        299
N VALUE    .070                                                    300
SECTION    12.9                                                    301
           -1150.   620.     -800.    620.     -625.    619.       302
           -575.    618.     -400.    616.     -335.    614.       303
           -285.    600.     -250.    600.     -65.     598.       304
           -30.     590.     -22.     585.     0.       585.       305
           22.      585.     30.      590.     115.     608.       306
           220.     614.     290.     616.     325.     618.       307
           340.     620.     500.     625.                         308
ENDTABLE                                                           309
BPR        13.0     B        1.       3.                          310
PIER       589.6    1.       587.6    4.                          311
GIRDER     910.1    909.6    30.      .8       2.7                 312
           -53.1    611.0    -53.     909.6    93.      609.6      313
           93.1     611.1                                           314
ENDTABLE                                                           315
SECTION    13.0                                                    316
           -750.    620.     -600.    616.2    -500.    612.       317
           -400.    608.9    -200.    609.6    -53.1    611.       318
           -53.     599.6    -24.     589.6    0.       587.6      319
           66.      587.6    93.      592.6    93.1     611.1      320
           100.     610.9    250.     613.5    400.     614.2      321
           500.     615.3    800.     620.                         322
ENDTABLE                                                           323
SEGMENT    13.5     1        N        -400.                       324
N VALUE    .070                                                    325
SEGMENT    13.5     2        N        -24.                        326
N VALUE    .085                                                    327
SEGMENT    13.5     3        C        66.                         328
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***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
N VALUE   .048                                                          329
SEGMENT   13.5      4         N         140.                            330
N VALUE   .085                                                          331
SEGMENT   13.5      5         N         900.                            332
N VALUE   .070                                                          333
SECTION   13.5                                                          334
          -1350.    625.      -850.     622.      -650.     622.        335
          -490.     602.      -400.     600.      -335.     598.        336
          -315.     598.      -225.     600.      -140.     600.        337
          -50.      598.      -24.      589.6     0.        585.6       338
          66.       587.6     140.      612.      225.      612.        339
          285.      614.      350.      616.      375.      618.        340
          900.      625.                                                341
ENDTABLE                                                                342
BPR       14.0      A         1         3                               343
PIER      589.2     2.5                                                 344
GIRDER    609.9     609.4     30.       .8        2.7                   345
          -48.1     613.2     -48.      609.4     48.       609.4       346
          48.1      613.4                                               347
ENDTABLE                                                                348
SECTION   14.0                                                          349
          -1500.    625.      -400.     614.4     -300.     613.5       350
          -200.     613.      -100.     612.9     -48.1     613.2       351
          -48.      596.3     -43.      589.3     0.        589.2       352
          43.       589.3     48.       596.3     48.1      613.4       353
          100.      613.5     200.      613.5     1250.     625.        354
ENDTABLE                                                                355
SEGMENT   14.9      1         N         -25.                            356
N VALUE   .085                                                          357
SEGMENT   14.9      2         C         25.                             358
N VALUE   .059                                                          359
SEGMENT   14.9      3         N         550.                            360
N VALUE   .085                                                          361
SECTION   14.9                                                          362
          -1500.    630.      -1125.    622.      -640.     606.        363
          -120.     604.      -60.      604.      -25.      594.        364
          0.        589.2     25.       594.      35.       596.        365
          75.       614.      150.      620.      175.      620.        366
          215.      620.      250.      622.      550.      630.        367
ENDTABLE                                                                368
COMPUTE   11.9      14.95     11.5                                      369
-----------------------------END OF DATA LISTING-----------------------------
```

COMPUTE 11.9 14.95 11.5 369

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSPC MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 11.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	583.8	0.0	0.0							
LOW GRND	583.8	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	583.8	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	593.9	463.2	1650.0	0.00	1.19	3.97	1650.00	588.6	0.00080	72.0
2	597.7	782.1	3420.0	0.00	1.19	5.07	3420.00	590.9	0.00094	92.1
3	601.3	3306.9	7340.0	0.00	1.19	70.91	7340.00	594.3	0.00081	1287.0
4	601.7	3832.8	8520.0	0.00	1.19	72.07	8520.00	595.2	0.00082	1308.0
5	602.7	5120.5	11880.0	0.00	1.19	74.80	11880.00	597.2	0.00085	1357.6

Dike D 607

SEGMENT TABLE FOR SECTION 11.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1650.	0.	270.	1192.	187.	0.
1650.	VELOCITY FPS	5.12	0.00	1.77	5.92	1.72	0.00
2	DISCHARGE CFS	3420.	0.	702.	2231.	487.	0.
3420.	VELOCITY FPS	6.62	0.00	2.39	8.00	2.32	0.00
3	DISCHARGE CFS	7340.	2486.	1107.	2963.	762.	22.
7340.	VELOCITY FPS	6.78	1.17	2.36	8.45	2.27	0.69
4	DISCHARGE CFS	8520.	3362.	1182.	3130.	812.	33.
8520.	VELOCITY FPS	5.61	1.30	2.39	8.73	2.30	0.72
5	DISCHARGE CFS	11880.	6037.	1358.	3447.	934.	105.
11880.	VELOCITY FPS	5.33	1.64	2.43	9.12	2.32	0.97
1	ELEV 593.9 KD	58478.	1.	9575.	42266.	6635.	1.
2	ELEV 597.7 KD	111431.	1.	22836.	72768.	15825.	1.
3	ELEV 601.3 KD	248364.	74294.	39783.	106591.	27379.	317.
4	ELEV 601.7 KD	290666.	108555.	41803.	110771.	28737.	800.
5	ELEV 602.7 KD	403906.	199899.	47514.	120858.	32679.	2957.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 11.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
583.80	0.							
584.	4.	21.	68.	1.	2.	62.	2.	1.
585.	28.	26.	1278.	1.	33.	1220.	23.	1.
586.	57.	31.	3637.	1.	166.	3352.	115.	1.
587.	91.	37.	7029.	1.	451.	6261.	313.	1.
588.	130.	42.	11430.	1.	932.	9851.	646.	1.
589.	174.	47.	16861.	1.	1647.	14064.	1141.	1.
590.	224.	52.	23320.	1.	2632.	18856.	1824.	1.
591.	278.	57.	30836.	1.	3922.	24194.	2718.	1.
592.	338.	62.	39455.	1.	5548.	30051.	3845.	1.
593.	403.	68.	49183.	1.	7541.	36406.	5226.	1.
594.	473.	73.	60061.	1.	9930.	43239.	6881.	1.
595.	549.	78.	72119.	1.	12743.	50534.	8831.	1.
596.	629.	83.	85392.	1.	16007.	58277.	11093.	1.
597.	715.	88.	99895.	1.	19750.	66456.	13687.	1.
598.	806.	93.	115700.	1.	23997.	75059.	16629.	1.
599.	978.	475.	133446.	107.	28772.	84075.	19939.	1.
600.	1714.	957.	167559.	6279.	33523.	93497.	23173.	8.
601.	2889.	1270.	229158.	54607.	38215.	103315.	26324.	150.
602.	4174.	1322.	325992.	138245.	43144.	113521.	29638.	1443.
603.	5530.	1373.	449425.	233705.	49496.	124108.	34061.	4007.
604.	6933.	1425.	599559.	356915.	56872.	135069.	39258.	8880.
605.	8378.	1477.	776457.	502330.	65097.	146399.	45325.	16482.
606.	9881.	1531.	974528.	662877.	73279.	158090.	52401.	26897.
607.	11456.	1589.	1194250.	838542.	83646.	170139.	59908.	40356.
608.	13147.	1720.	1442972.	1037361.	96518.	182539.	68868.	57336.
609.	15229.	2148.	1715644.	1247499.	115927.	195285.	82625.	73639.
610.	17515.	2376.	2035402.	1470600.	136888.	208374.	97475.	115199.
611.	19937.	2470.	2406513.	1708628.	159598.	221800.	113588.	202928.
612.	22424.	2486.	2817413.	1959504.	182948.	235559.	130093.	303254.
613.	24915.	2495.	3250601.	2221578.	206942.	249648.	147083.	416915.
614.	27410.	2495.	3682472.	2483422.	230194.	264062.	163553.	511887.
615.	29905.	2495.	4154799.	2766065.	255171.	278799.	181240.	624305.
616.	32400.	2495.	4669896.	3070419.	281941.	293853.	200190.	756657.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AND	DLTAN	SIGMA	DFS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.99	0.00	0.11	1.00	0.00	0.11	2.81	1.53	1.52	2.08	469.12	889.74	587.83	0.00
2	1.00	0.00	0.09	1.00	0.00	0.09	3.64	1.72	1.72	2.30	790.70	1377.89	589.89	0.00
3	0.97	0.01	0.08	1.00	0.00	0.09	5.61	2.72	2.67	6.73	3411.34	2291.24	593.11	0.00
4	0.96	0.02	0.07	0.99	0.00	0.09	6.30	3.00	2.91	6.25	3938.36	2484.33	593.89	0.00
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

West Bank R.6

ROAD SECTION 12.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	583.80	0.0	0.00	583.80	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	594.28	1650.0	0.34	593.94	1650.00	1650.0	588.0	0.0	0.0	0.0	0.0	0.0
2	598.37	3420.0	0.54	597.83	3420.00	3420.0	940.0	0.0	0.0	0.0	0.0	0.0
3	601.59	7340.0	0.18	601.41	7340.00	7340.0	1309.2	0.0	0.0	0.0	0.0	0.0
4	601.90	8520.0	0.08	601.82	8520.00	8520.0	1351.8	0.0	0.0	0.0	0.0	0.0
5	604.60	11880.0	1.82	602.78	11880.00	11871.7	1375.6	0.0	0.0	8.3	6.9	68.5

MIN ROAD ELEVATION = 604.40 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 602.40 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 12.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	583.8	0.0	0.0							
LOW GRND	583.8	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	583.8	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	594.3	891.1	1650.0	0.00	0.28	0.50	1650.00	586.5	0.00012	109.7
2	598.4	1380.0	3420.0	0.00	0.28	0.59	3420.00	588.2	0.00016	129.1
3	601.6	2313.1	7340.0	0.00	0.28	3.24	7340.00	590.8	0.00035	705.2
4	601.9	2511.6	8520.0	0.00	0.28	4.05	8520.00	591.5	0.00043	891.5
5	604.6	5100.9	11880.0	0.00	0.28	4.59	11880.00	593.2	0.00032	999.6

SEGMENT TABLE FOR SECTION 12.1

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1650.	0.	51.	1505.	94.	0.
1650.	VELOCITY FPS	2.29	0.00	0.53	2.39	0.57	0.00
2	DISCHARGE CFS	3420.	0.	142.	3018.	261.	0.
3420.	VELOCITY FPS	3.25	0.00	0.77	3.45	0.81	0.00
3	DISCHARGE CFS	7340.	207.	359.	6127.	647.	0.
7340.	VELOCITY FPS	5.27	0.42	1.31	5.73	1.35	0.00
4	DISCHARGE CFS	8520.	303.	422.	7040.	755.	0.
8520.	VELOCITY FPS	5.91	0.47	1.48	6.47	1.53	0.00
5	DISCHARGE CFS	11880.	2816.	547.	7582.	934.	0.
11880.	VELOCITY FPS	4.92	0.99	1.50	6.07	1.43	0.00
1	ELEV 594.3 KD	149019.	1.	4582.	135999.	8436.	1.
2	ELEV 598.4 KD	266900.	1.	11034.	235552.	20312.	1.
3	ELEV 601.6 KD	383930.	1215.	19234.	328840.	34640.	1.
4	ELEV 601.9 KD	405551.	10240.	20298.	338696.	36316.	1.
5	ELEV 604.6 KD	664293.	154411.	30752.	426597.	52532.	1.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 12.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
583.80	0.							
584.	12.	61.	191.	1.	2.	185.	2.	1.
585.	75.	66.	3704.	1.	14.	3661.	26.	1.
586.	144.	70.	10262.	1.	71.	10057.	131.	1.
587.	216.	75.	19334.	1.	193.	18782.	355.	1.
588.	294.	80.	30688.	1.	399.	29554.	734.	1.
589.	376.	85.	44202.	1.	704.	42192.	1297.	1.
590.	463.	89.	59774.	1.	1126.	56568.	2073.	1.
591.	555.	94.	77351.	1.	1678.	72582.	3089.	1.
592.	652.	99.	96907.	1.	2374.	90154.	4370.	1.
593.	753.	104.	118393.	1.	3226.	109217.	5939.	1.
594.	859.	108.	141795.	1.	4248.	129716.	7821.	1.
595.	970.	113.	167100.	1.	5452.	151601.	10036.	1.
596.	1085.	118.	194301.	1.	6849.	174831.	12608.	1.
597.	1205.	123.	223374.	1.	8450.	199367.	15555.	1.
598.	1330.	127.	254357.	1.	10267.	225176.	18900.	1.
599.	1460.	132.	287221.	1.	12310.	252226.	22661.	1.
600.	1595.	137.	321966.	1.	14590.	280491.	26859.	1.
601.	1926.	361.	362746.	17.	17268.	309943.	31511.	1.
602.	2549.	915.	412930.	15223.	20503.	340561.	36637.	1.
603.	3497.	960.	494687.	47953.	24171.	372323.	42254.	1.
604.	4474.	989.	593971.	106894.	28113.	405207.	48382.	1.
605.	5469.	1006.	712370.	184134.	32312.	439196.	55036.	1.
606.	6484.	1023.	848115.	272883.	36719.	474272.	62234.	1.
607.	7524.	1053.	999482.	373641.	41326.	510417.	70650.	10.
608.	8584.	1089.	1168023.	492805.	46197.	547617.	80100.	136.
609.	9705.	1139.	1351919.	620342.	51245.	585857.	90984.	1007.
610.	10868.	1184.	1551694.	761555.	56510.	625122.	102453.	3708.
611.	12060.	1226.	1768690.	918025.	62011.	665400.	114576.	8677.
612.	13420.	1402.	2005812.	1088060.	67656.	706679.	127023.	14284.
613.	14871.	1528.	2266153.	1274269.	73529.	748944.	140100.	25319.
614.	16458.	1579.	2552078.	1471285.	79592.	792187.	153664.	50369.
615.	18053.	1600.	2844937.	1664096.	85699.	836396.	167233.	77609.
616.	19653.	1600.	3147467.	1855373.	91896.	881561.	180947.	101225.
617.	21253.	1600.	3471422.	2061765.	98332.	927670.	195314.	130959.
618.	22853.	1600.	3817606.	2283953.	105006.	974715.	210344.	168137.

***** WSPZ MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 12.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	584.7	0.0	0.0							
LOW GRND	584.7	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	584.7	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	594.7	833.0	1650.0	0.00	3.51	6.03	1650.00	587.4	0.00015	107.2
2	598.8	1323.7	3420.0	0.00	3.51	7.15	3420.00	589.1	0.00018	127.0
3	602.5	2312.3	7340.0	0.00	3.51	39.62	7340.00	591.7	0.00035	704.5
4	603.0	2657.5	8520.0	0.00	3.51	51.74	8520.00	592.4	0.00041	919.9
5	605.5	5029.8	11880.0	0.00	3.51	56.15	11880.00	594.1	0.00032	998.4

SEGMENT TABLE FOR SECTION 12.5

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1650.	0.	49.	1510.	91.	0.
1650.	VELOCITY FPS	2.42	0.00	0.57	2.53	0.61	0.00
2	DISCHARGE CFS	3420.	0.	140.	3021.	258.	0.
3420.	VELOCITY FPS	3.36	0.00	0.81	3.56	0.86	0.00
3	DISCHARGE CFS	7340.	210.	365.	6107.	658.	0.
7340.	VELOCITY FPS	5.25	0.43	1.33	5.71	1.38	0.00
4	DISCHARGE CFS	8520.	411.	429.	6915.	764.	0.
8520.	VELOCITY FPS	5.72	0.54	1.48	6.29	1.52	0.00
5	DISCHARGE CFS	11880.	2798.	556.	7577.	950.	0.
11880.	VELOCITY FPS	4.94	1.01	1.53	6.08	1.47	0.00
1	ELEV 594.7 KD	136287.	1.	4070.	124722.	7493.	1.
2	ELEV 598.8 KD	253271.	1.	10372.	223803.	19094.	1.
3	ELEV 602.5 KD	384985.	1229.	19619.	328802.	35334.	1.
4	ELEV 603.0 KD	421231.	17767.	21323.	344133.	38006.	1.
5	ELEV 605.5 KD	657496.	151183.	31060.	424150.	53102.	1.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 12.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
584.70	0.							
585.	18.	61.	371.	1.	3.	363.	3.	1.
586.	82.	66.	4237.	1.	18.	4184.	33.	1.
587.	151.	71.	11065.	1.	82.	10831.	150.	1.
588.	224.	76.	20382.	1.	214.	19770.	393.	1.
589.	302.	80.	31969.	1.	433.	30736.	797.	1.
590.	385.	85.	45709.	1.	786.	43553.	1392.	1.
591.	472.	90.	61508.	1.	1199.	58097.	2207.	1.
592.	564.	95.	79321.	1.	1776.	74270.	3269.	1.
593.	662.	99.	99111.	1.	2501.	91994.	4604.	1.
594.	763.	104.	120840.	1.	3388.	111203.	6236.	1.
595.	870.	109.	144493.	1.	4448.	131842.	8189.	1.
596.	981.	114.	170058.	1.	5695.	153864.	10485.	1.
597.	1097.	118.	197530.	1.	7141.	177226.	13145.	1.
598.	1217.	123.	226887.	1.	8796.	201891.	16192.	1.
599.	1343.	128.	258152.	1.	10672.	227825.	19646.	1.
600.	1473.	132.	291325.	1.	12780.	254998.	23527.	1.
601.	1608.	137.	326394.	1.	15131.	283382.	27855.	1.
602.	1988.	416.	368701.	35.	17929.	312952.	32648.	1.
603.	2644.	919.	422191.	17472.	21272.	343686.	37927.	1.
604.	3595.	965.	506014.	54686.	25056.	375560.	43709.	1.
605.	4573.	990.	609038.	115663.	29096.	408556.	50013.	1.
606.	5571.	1008.	730860.	195551.	33398.	442654.	56857.	1.
607.	6585.	1025.	870428.	289279.	37930.	477837.	64257.	1.
608.	7628.	1056.	1025672.	392457.	42646.	514089.	72992.	13.
609.	8696.	1094.	1198341.	514682.	47631.	551393.	82785.	170.
610.	9817.	1144.	1387165.	647281.	52813.	589736.	93986.	1249.
611.	10987.	1188.	1591524.	791843.	58198.	629103.	105718.	4125.
612.	12196.	1243.	1814111.	952885.	63827.	669482.	118123.	9313.
613.	13556.	1419.	2057350.	1128687.	69615.	710860.	130906.	15302.
614.	15030.	1533.	2324753.	1319124.	75621.	753224.	144278.	27698.
615.	16617.	1585.	2618073.	1522341.	81833.	796564.	158197.	54976.
616.	18213.	1600.	2915218.	1716554.	88052.	840869.	171981.	81339.
617.	19813.	1600.	3224957.	1913205.	94398.	886128.	186038.	106002.
618.	21413.	1600.	3556643.	2125345.	100988.	932332.	200763.	137031.
619.	23013.	1600.	3911091.	2353673.	107822.	979470.	216165.	175803.

***** WSPI MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 12.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	585.0	0.0	0.0							
LOW GRND	585.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	585.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	595.2	699.7	1650.0	0.00	2.63	5.93	1650.00	588.4	0.00024	107.6
2	599.5	1348.7	3420.0	0.00	2.63	15.31	3420.00	590.4	0.00029	277.9
3	603.5	2825.4	7340.0	0.00	2.63	21.57	7340.00	593.6	0.00037	391.6
4	604.2	3077.8	8520.0	0.00	2.63	21.87	8520.00	594.3	0.00042	396.9
5	606.5	4022.8	11880.0	0.00	2.63	22.93	11880.00	596.1	0.00044	416.1

SEGMENT TABLE FOR SECTION 12.9

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1650.	0.	83.	1482.	85.	0.
1650.	VELOCITY FPS	3.13	0.00	0.68	3.29	0.67	0.00
2	DISCHARGE CFS	3420.	1.	210.	2907.	302.	0.
3420.	VELOCITY FPS	4.22	0.31	0.53	4.55	0.98	0.00
3	DISCHARGE CFS	7340.	155.	1458.	4969.	757.	0.
7340.	VELOCITY FPS	5.08	1.06	1.12	6.09	1.35	0.00
4	DISCHARGE CFS	8520.	219.	1842. 1450	5566.	892. 607	0.
8520.	VELOCITY FPS	5.41	1.23	1.27	6.60 893	1.47	0.00
5	DISCHARGE CFS	11880.	491.	3172.	6910.	1308.	0.
11880.	VELOCITY FPS	5.68	1.62	1.60	7.30	1.64	0.00
					2 [illegible]		
1	ELEV 595.2 KD	106451.	1.	5305.	95683.	5460.	1.
2	ELEV 599.5 KD	201055.	2.	12108.	171181.	17763.	1.
3	ELEV 603.5 KD	379097.	7769.	74712.	257485.	39130.	1.
4	ELEV 604.2 KD	415562.	10386.	89158.	272467.	43551.	1.
5	ELEV 606.5 KD	565563.	23099.	150487.	329723.	62254.	1.

EG = 604.65

***** WSPC MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 12.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
585.00	0.							
586.	46.	47.	2000.	1.	8.	1981.	8.	1.
587.	94.	50.	6398.	1.	52.	6292.	52.	1.
588.	146.	54.	12678.	1.	154.	12369.	154.	1.
589.	202.	57.	20646.	1.	331.	19980.	331.	1.
590.	260.	61.	30168.	1.	591.	28983.	590.	1.
591.	325.	69.	41136.	1.	929.	39277.	924.	1.
592.	399.	78.	53750.	1.	1476.	50785.	1479.	1.
593.	481.	87.	68061.	1.	2293.	63447.	2319.	1.
594.	573.	96.	84128.	1.	3422.	77211.	3492.	1.
595.	674.	105.	101979.	1.	4902.	92036.	5038.	1.
596.	784.	115.	121659.	1.	6772.	107885.	7001.	1.
597.	903.	124.	143217.	1.	9069.	124725.	9420.	1.
598.	1033.	147.	164861.	1.	9976.	142528.	12333.	1.
599.	1228.	230.	188033.	1.	10946.	161270.	15781.	1.
600.	1511.	318.	217591.	21.	16098.	180926.	19803.	1.
601.	1859.	371.	255242.	732.	27659.	201477.	24433.	1.
602.	2233.	379.	300173.	2866.	44223.	222903.	29707.	1.
603.	2616.	387.	350560.	5796.	63354.	245187.	35653.	1.
604.	3008.	395.	405958.	9598.	84977.	268312.	42302.	1.
605.	3408.	404.	466342.	14386.	109520.	292263.	49700.	1.
606.	3814.	412.	531695.	20104.	136683.	317028.	57879.	1.
607.	4232.	420.	601566.	26447.	165289.	342591.	66838.	1.
608.	4659.	433.	674217.	33783.	196375.	368942.	74650.	1.
609.	5093.	450.	750041.	42229.	230208.	396068.	81534.	1.
610.	5560.	471.	830281.	51312.	265105.	423959.	89516.	1.
611.	6040.	492.	916024.	61556.	302609.	452604.	98994.	1.
612.	6540.	513.	1007810.	72785.	342042.	481993.	110828.	1.
613.	7067.	534.	1105593.	84930.	383036.	512118.	125167.	1.
614.	7615.	563.	1205904.	95963.	426316.	542969.	140530.	1.
615.	8218.	626.	1297854.	97864.	470940.	574538.	154219.	1.
616.	8877.	702.	1397284.	99954.	517715.	606817.	172399.	1.
617.	9621.	798.	1506904.	102346.	566094.	639797.	198247.	1.
618.	10467.	889.	1636131.	115965.	616152.	673473.	229422.	1.
619.	11381.	977.	1782679.	139979.	668126.	707836.	266202.	1.
620.	12613.	1229.	1940980.	167062.	721372.	742881.	308171.	12.
621.	13923.	1522.	2109202.	198107.	776807.	778599.	355467.	223.
622.	15477.	1554.	2354293.	286925.	833081.	814986.	405396.	983.
623.	17031.	1586.	2620169.	411479.	891766.	852034.	460722.	4168.
624.	18649.	1618.	2906762.	531564.	951223.	889738.	516166.	8310.
625.	20267.	1650.	3216237.	682256.	1012987.	928093.	576620.	16280.
626.	21917.	1650.	3544551.	829795.	1075542.	967093.	637312.	26619.
627.	23567.	1650.	3897238.	1004488.	1140312.	1006732.	702694.	43012.
628.	25217.	1650.	4237731.	1143988.	1203746.	1047007.	762427.	53089.
629.	26867.	1650.	4599106.	1298974.	1269128.	1087911.	825688.	65211.
630.	28517.	1650.	4982128.	1470752.	1336471.	1129439.	892597.	79732.
631.	30167.	1650.	5387571.	1660705.	1405790.	1171587.	963277.	97056.

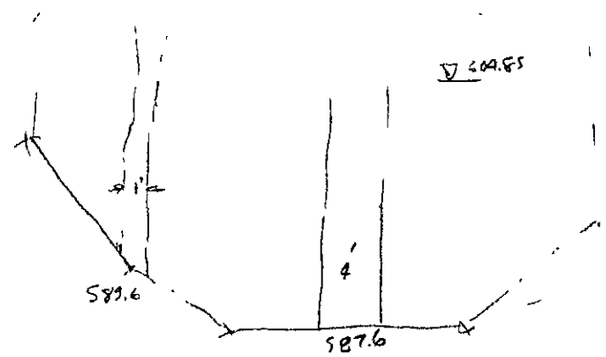
TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	1.00	0.00	0.18	1.00	0.00	0.18	2.28	1.14	1.14	1.48	443.13	659.97	590.05	0.00
2	1.00	0.00	0.16	1.00	0.00	0.16	2.77	1.30	1.30	1.93	878.73	1246.97	591.37	0.00
3	0.89	0.10	0.16	0.97	0.04	0.30	4.32	2.41	2.25	3.26	1664.95	2982.77	593.48	0.00
4	0.84	0.18	0.16	0.96	0.06	0.38	4.80	2.49	2.25	3.48	1877.39	3480.87	594.00	0.00
5	0.71	0.46	0.15	0.88	0.08	0.67	5.72	2.44	2.03	3.81	~~2788.83~~	5212.56	595.35	0.00

133.98

1775



***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 13.0 Gary Rd.

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	587.60	0.0	0.00	587.60	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	595.39	1650.0	0.24	595.15	1650.00	1650.0	724.2	0.0	0.0	0.0	0.0	0.0
2	599.74	3420.0	0.34	599.40	3420.00	3420.0	1236.8	0.0	0.0	0.0	0.0	0.0
3	604.02	7340.0	0.96	603.06	7340.00	7340.0	1700.6	0.0	0.0	0.0	0.0	0.0
4	604.85	8520.0	1.20	603.65	8520.00	8520.0	1774.7	0.0	0.0	0.0	0.0	0.0
5	607.62	11880.0	1.58	606.04	11880.00	11880.0	2077.5	0.0	0.0	0.0	0.0	0.0

EG=605.21

MIN ROAD ELEVATION = 608.90 FT

1985 HWM ~ 609

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 909.60 FT OPENING NO.= 1

***** WSPE MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 13.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	585.6	0.0	0.0							
LOW GRND	587.6	78.0	139.6	0.00	0.41	0.41				78.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	587.6	78.0	139.6	0.00	0.41	0.41				78.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	595.5	921.7	1650.0	0.00	0.47	0.69	1650.00	589.0	0.00024	131.0
2	599.8	1790.6	3420.0	0.00	0.47	2.07	3420.00	590.4	0.00024	396.2
3	604.2	4292.3	7340.0	0.00	0.47	3.26	7340.00	592.7	0.00024	623.6
4	605.0	4808.4	8520.0	0.00	0.47	3.31	8520.00	593.2	0.00025	632.7
5	607.7	6583.9	11880.0	0.00	0.47	3.47	11880.00	594.7	0.00023	662.9

SEGMENT TABLE FOR SECTION 13.5

CSM		TOTAL	SEG NO 1 N	2 N	3 C	4 N	5 N
1	DISCHARGE CFS	1650.	0.	29.	1560.	62.	0.
1650.	VELOCITY FPS	1.97	0.00	0.54	2.01	0.65	0.00
2	DISCHARGE CFS	3420.	0.	140.	3081.	198.	0.
3420.	VELOCITY FPS	2.52	0.00	0.35	2.64	0.88	0.00
3	DISCHARGE CFS	7340.	206.	1684.	5001.	449.	0.
7340.	VELOCITY FPS	2.71	0.67	0.84	3.21	1.08	0.00
4	DISCHARGE CFS	8520.	305.	2169.	5526.	521.	0.
8520.	VELOCITY FPS	2.79	0.77	0.93	3.39	1.14	0.00
5	DISCHARGE CFS	11880.	728.	3794.	6627.	730.	0.
11880.	VELOCITY FPS	2.74	0.99	1.13	3.53	1.19	0.00
1	ELEV 595.5 KD	106232.	1.	1847.	100429.	3954.	1.
2	ELEV 599.8 KD	220446.	1.	8936.	198715.	12792.	1.
3	ELEV 604.2 KD	469591.	12512.	106453.	321835.	28791.	1.
4	ELEV 605.0 KD	536340.	19190.	136482.	347880.	32787.	1.
5	ELEV 607.7 KD	788091.	48217.	251545.	439894.	48434.	1.

605.12

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 13.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3	4	5
585.60	0.							
586.	3.	16.	37.	1.	1.	33.	1.	1.
587.	37.	55.	935.	1.	1.	931.	1.	1.
588.	110.	82.	4128.	1.	1.	4121.	3.	1.
589.	196.	91.	10238.	1.	1.	10196.	40.	1.
590.	291.	99.	18785.	1.	3.	18613.	165.	1.
591.	393.	105.	30061.	1.	40.	29596.	422.	1.
592.	501.	111.	43458.	1.	168.	42441.	837.	1.
593.	615.	117.	58996.	1.	427.	57107.	1446.	1.
594.	735.	123.	76608.	1.	850.	73457.	2275.	1.
595.	861.	129.	96284.	1.	1473.	91432.	3352.	1.
596.	993.	135.	117994.	1.	2322.	110943.	4703.	1.
597.	1131.	141.	141733.	1.	3423.	131933.	6349.	1.
598.	1293.	193.	166636.	1.	3948.	154340.	8314.	1.
599.	1526.	293.	194225.	1.	5194.	178149.	10623.	1.
600.	1882.	430.	227739.	3.	10450.	203309.	13296.	1.
601.	2389.	552.	270603.	301.	24162.	229783.	16356.	1.
602.	2969.	594.	324814.	1814.	44534.	257505.	19813.	1.
603.	3572.	611.	387578.	5398.	70058.	286475.	23695.	1.
604.	4188.	622.	458342.	11452.	101120.	316695.	28027.	1.
605.	4813.	633.	537021.	19266.	136796.	348131.	32826.	1.
606.	5454.	644.	622601.	28136.	174825.	380697.	38096.	1.
607.	6104.	655.	715456.	38981.	217413.	414441.	43871.	1.
608.	6763.	666.	815521.	51657.	264029.	449335.	50168.	1.
609.	7435.	677.	922118.	65775.	313399.	485326.	56995.	1.
610.	8118.	688.	1035596.	81774.	366421.	522426.	64377.	1.
611.	8809.	699.	1156387.	99877.	423530.	560639.	72340.	1.
612.	9551.	773.	1284120.	119271.	482324.	599874.	81656.	68.
613.	10336.	833.	1421132.	140913.	545128.	640195.	92127.	1437.
614.	11184.	871.	1568219.	164488.	610934.	681559.	104107.	5973.
615.	12086.	911.	1724620.	189804.	679026.	723929.	116524.	13193.
616.	13002.	952.	1890589.	217640.	751239.	767359.	129761.	24590.
617.	13972.	972.	2067676.	246988.	824802.	811743.	143239.	38516.
618.	14959.	1004.	2253595.	278934.	902303.	857162.	157499.	57290.
619.	16011.	1080.	2443755.	312751.	981741.	903536.	172123.	72612.
620.	17122.	1159.	2645637.	349014.	1064369.	950900.	187373.	92765.
621.	18323.	1242.	2860892.	387483.	1149449.	999222.	203094.	120306.
622.	19749.	1452.	3066769.	403696.	1236988.	1048493.	219290.	155089.
623.	21324.	1746.	3267175.	403696.	1327361.	1098718.	236038.	198717.
624.	23212.	1979.	3491485.	411945.	1420051.	1149871.	253231.	252783.
625.	25307.	2173.	3736533.	425770.	1515428.	1201959.	270945.	319429.
626.	27496.	2250.	4053092.	479322.	1610861.	1254873.	288640.	388881.
627.	29746.	2250.	4431838.	569500.	1707152.	1308643.	306477.	461520.
628.	31996.	2250.	4835650.	673864.	1806694.	1363352.	324951.	545494.
629.	34246.	2250.	5265549.	794232.	1909516.	1418991.	344069.	642239.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AFB	DLTAH	SIGMA	DKS	COEFF	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	1.00	0.00	0.10	1.00	-0.01	0.09	3.35	1.07	1.07	1.10	493.36	208.70	591.53	0.00
2	1.00	0.00	0.10	1.00	-0.01	0.09	4.04	1.26	1.26	1.33	1020.69	535.53	592.94	0.00
3	1.00	0.00	0.09	1.00	-0.01	0.09	6.13	1.56	1.56	1.99	2095.02	1009.43	595.36	0.00
4	1.00	0.00	0.09	1.00	-0.01	0.09	6.73	1.95	1.95	2.25	2526.73	1210.66	595.98	0.00
5	0.63	0.68	0.09	0.82	-0.10	0.65	7.93	2.85	2.17	2.52	4204.09	4021.78	597.57	0.00

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 14.0 Lincoln Rd

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	589.20	0.0	0.00	589.20	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	595.55	1650.0	0.02	595.53	1650.00	1650.0	492.1	0.0	0.0	0.0	0.0	0.0
2	599.82	3420.0	0.02	599.80	3420.00	3420.0	846.8	0.0	0.0	0.0	0.0	0.0
3	604.04	7340.0	0.02	604.02	7340.00	7340.0	1197.6	0.0	0.0	0.0	0.0	0.0
4	604.86	8520.0	0.02	604.84	8520.00	8520.0	1265.6	0.0	0.0	0.0	0.0	0.0
5	608.95	11880.0	1.32	607.63	11880.00	11880.0	1497.6	0.0	0.0	0.0	0.0	0.0

MIN ROAD ELEVATION = 612.90 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 609.40 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 14.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH .FT
0	589.2	0.0	0.0							
LOW GRND	594.0	120.0	686.6	0.00	0.26	0.26				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	594.0	120.0	686.6	0.00	0.26	0.26				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	596.7	288.4	1650.0	0.00	0.26	0.37	1650.00	594.9	0.00703	71.2
2	600.4	585.6	3420.0	0.00	0.26	0.48	3420.00	596.9	0.00430	92.0
3	604.6	1137.6	7340.0	0.00	0.26	1.79	7340.00	599.7	0.00466	341.1
4	605.7	1672.3	8520.0	0.00	0.26	3.06	8520.00	600.4	0.00415	583.9
5	609.1	4163.4	11880.0	0.00	0.26	4.18	11880.00	602.2	0.00153	798.8

SEGMENT TABLE FOR SECTION 14.1

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	1650.	24.	1590.	36.
1650.	VELOCITY FPS	6.12	1.80	6.19	1.96
2	DISCHARGE CFS	3420.	174.	3042.	203.
3420.	VELOCITY FPS	6.62	2.43	6.94	2.70
3	DISCHARGE CFS	7340.	533.	6122.	684.
7340.	VELOCITY FPS	8.69	1.73	9.41	3.83
4	DISCHARGE CFS	8520.	1163.	6552.	805.
8520.	VELOCITY FPS	8.33	1.54	9.31	3.81
5	DISCHARGE CFS	11880.	5231.	5748.	901.
11880.	VELOCITY FPS	4.79	1.77	6.56	2.71
1	ELEV 596.7 KD	19650.	268.	18988.	394.
2	ELEV 600.4 KD	52116.	2612.	46437.	3067.
3	ELEV 604.6 KD	107508.	7821.	89687.	10000.
4	ELEV 605.7 KD	130789.	16115.	102183.	12491.
5	ELEV 609.1 KD	303108.	132870.	147197.	23041.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 14.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
589.20	0.					
590.	3.	8.	47.	1.	45.	1.
591.	17.	19.	394.	1.	391.	1.
592.	41.	29.	1274.	1.	1272.	1.
593.	76.	40.	2874.	1.	2872.	1.
594.	120.	50.	5356.	1.	5354.	1.
595.	175.	58.	9584.	18.	9531.	22.
596.	237.	67.	14999.	119.	14707.	173.
597.	307.	73.	21563.	352.	20692.	520.
598.	382.	78.	29268.	757.	27466.	1045.
599.	464.	84.	38120.	1373.	34987.	1760.
600.	551.	90.	48130.	2233.	43218.	2679.
601.	644.	96.	59301.	3360.	52110.	3810.
602.	743.	101.	71680.	4796.	61671.	5181.
603.	847.	107.	85284.	6570.	71875.	6804.
604.	1000.	201.	99249.	7820.	82700.	8693.
605.	1291.	428.	114845.	9253.	94126.	10863.
606.	1854.	658.	141086.	20809.	106126.	13322.
607.	2547.	730.	181646.	43970.	118683.	16084.
608.	3292.	762.	233538.	81215.	131817.	19175.
609.	4064.	795.	295540.	127425.	145509.	22605.
610.	4882.	827.	365607.	178550.	159696.	26366.
611.	5729.	860.	444751.	238869.	174420.	30493.
612.	6595.	892.	533918.	309219.	189691.	35007.
613.	7514.	925.	629838.	383793.	205421.	39883.
614.	8455.	961.	734584.	468461.	221679.	43933.
615.	9430.	1001.	845837.	560841.	238429.	46242.
616.	10459.	1043.	965943.	660013.	255645.	49774.
617.	11517.	1086.	1096387.	768672.	273361.	54173.
618.	12633.	1129.	1236296.	883727.	291525.	60605.
619.	13786.	1186.	1383629.	1008282.	310172.	64706.
620.	14993.	1266.	1535029.	1140554.	329272.	64707.
621.	16281.	1330.	1702965.	1280266.	348824.	73300.
622.	17623.	1382.	1887296.	1428414.	368837.	89769.
623.	19066.	1459.	2071215.	1575267.	389273.	106248.
624.	20534.	1544.	2263164.	1728711.	410178.	124275.
625.	22162.	1628.	2471491.	1891984.	431476.	147256.
626.	23790.	1712.	2692455.	2065534.	453249.	173672.
627.	25587.	1797.	2930479.	2249301.	475405.	204815.
628.	27384.	1881.	3182499.	2443972.	498023.	240504.
629.	29349.	1966.	3452178.	2649253.	521020.	280830.
630.	31315.	2050.	3737161.	2866032.	544470.	326659.
631.	33365.	2050.	4108204.	3148395.	568293.	389512.
632.	35415.	2050.	4505992.	3450904.	592558.	462529.
633.	37465.	2050.	4875260.	3728709.	617082.	521951.
634.	39515.	2050.	5265418.	4021842.	642032.	587402.
635.	41565.	2050.	5677145.	4330777.	667407.	659339.
636.	43615.	2050.	6111115.	4655995.	693204.	738240.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 14.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	589.2	0.0	0.0							
LOW GRND	594.0	120.0	393.0	0.00	1.84	1.84				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	594.0	120.0	393.0	0.00	1.84	1.84				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	599.5	503.9	1650.0	0.00	1.84	2.99	1650.00	594.9	0.00149	86.8
2	603.2	863.3	3420.0	0.00	1.84	3.72	3420.00	596.9	0.00151	107.9
3	607.5	2901.2	7340.0	0.00	1.84	25.67	7340.00	599.7	0.00124	745.6
4	608.3	3517.0	8520.0	0.00	1.84	26.58	8520.00	600.4	0.00112	771.8
5	610.6	5376.8	11880.0	0.00	1.84	29.16	11880.00	602.2	0.00080	846.7

SEGMENT TABLE FOR SECTION 14.9

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	1650.	70.	1493.	87.
1650.	VELOCITY FPS	3.65	1.34	3.80	1.49
2	DISCHARGE CFS	3420.	278.	2856.	286.
3420.	VELOCITY FPS	4.60	1.89	4.95	2.06
3	DISCHARGE CFS	7340.	2315.	4388.	637.
7340.	VELOCITY FPS	4.41	1.26	5.52	2.35
4	DISCHARGE CFS	8520.	3322.	4505.	693.
8520.	VELOCITY FPS	4.14	1.40	5.40	2.30
5	DISCHARGE CFS	11880.	6293.	4747.	839.
11880.	VELOCITY FPS	3.42	1.56	5.00	2.14
1	ELEV 599.5 KD	42666.	1785.	38664.	2218.
2	ELEV 603.2 KD	87863.	7093.	73467.	7303.
3	ELEV 607.5 KD	207430.	64274.	125026.	18131.
4	ELEV 608.3 KD	252402.	95870.	135738.	20795.
5	ELEV 610.6 KD	419506.	221395.	168389.	29722.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 14.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
589.20	0.					
590.	3.	8.	47.	1.	45.	1.
591.	17.	19.	394.	1.	391.	1.
592.	41.	29.	1274.	1.	1272.	1.
593.	76.	40.	2874.	1.	2872.	1.
594.	120.	50.	5356.	1.	5354.	1.
595.	175.	58.	9586.	18.	9531.	23.
596.	237.	67.	15008.	123.	14707.	178.
597.	307.	73.	21591.	363.	20692.	537.
598.	382.	78.	29327.	782.	27466.	1079.
599.	464.	84.	38222.	1418.	34987.	1818.
600.	551.	90.	48291.	2306.	43218.	2767.
601.	644.	96.	59537.	3470.	52110.	3935.
602.	743.	101.	72008.	4953.	61671.	5350.
603.	847.	107.	85724.	6785.	71875.	7027.
604.	1000.	201.	99792.	8077.	82700.	8979.
605.	1291.	428.	115522.	9557.	94126.	11219.
606.	1854.	658.	142229.	21492.	106126.	13759.
607.	2547.	730.	183689.	45412.	118683.	16612.
608.	3292.	762.	236857.	83879.	131817.	19804.
609.	4064.	795.	300460.	131604.	145509.	23347.
610.	4882.	827.	372344.	184406.	159696.	27231.
611.	5729.	860.	453599.	246703.	174420.	31493.
612.	6595.	892.	545207.	319361.	189691.	36155.
613.	7514.	925.	643743.	396380.	205421.	41191.
614.	8455.	961.	751397.	483824.	221679.	45374.
615.	9430.	1001.	865752.	579234.	238429.	47758.
616.	10459.	1043.	989227.	681658.	255645.	51407.
617.	11517.	1086.	1123374.	793881.	273361.	55949.
618.	12633.	1129.	1267270.	912710.	291525.	62593.
619.	13786.	1186.	1418829.	1041348.	310172.	66828.
620.	14993.	1266.	1574566.	1177959.	329272.	66829.
621.	16281.	1330.	1747366.	1322253.	348824.	75703.
622.	17623.	1382.	1937091.	1475258.	368837.	92713.
623.	19066.	1459.	2126369.	1626929.	389273.	109733.
624.	20534.	1544.	2323933.	1785405.	410178.	128350.
625.	22162.	1628.	2538385.	1954033.	431476.	152085.
626.	23790.	1712.	2765891.	2133275.	453249.	179368.
627.	25587.	1797.	3010983.	2323069.	475405.	211532.
628.	27384.	1881.	3270537.	2524123.	498023.	248391.
629.	29349.	1966.	3548295.	2736137.	521020.	290040.
630.	31315.	2050.	3841867.	2960025.	544470.	337372.
631.	33365.	2050.	4224270.	3251649.	568293.	402286.
632.	35415.	2050.	4634335.	3564078.	592558.	477698.
633.	37465.	2050.	5014795.	3850995.	617082.	539069.
634.	39515.	2050.	5416839.	4153741.	642032.	606666.
635.	41565.	2050.	5841157.	4472808.	667407.	680962.
636.	43615.	2050.	6288463.	4808692.	693204.	762452.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 14.95 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	593.0	0.0	0.0							
LOW GRND	597.8	120.0	413.5	0.00	2.41	2.41				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	597.8	120.0	413.5	0.00	2.41	2.41				50.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	603.0	478.8	1650.0	0.00	2.41	3.91	1650.00	598.7	0.00172	85.2
2	606.6	829.0	3420.0	0.00	2.41	4.87	3420.00	600.7	0.00169	106.1
3	610.8	2574.8	7340.0	0.00	2.41	33.56	7340.00	603.5	0.00157	731.0
4	611.4	3001.6	8520.0	0.00	2.41	34.44	8520.00	604.2	0.00157	750.0
5	613.3	4433.1	11880.0	0.00	2.41	37.17	11880.00	606.0	0.00130	809.5

SEGMENT TABLE FOR SECTION 14.95

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1650.	64.	1504.	81.
1650.	VELOCITY FPS	3.83	1.37	3.97	1.53
2	DISCHARGE CFS	3420.	265.	2879.	276.
3420.	VELOCITY FPS	4.78	1.94	5.13	2.11
3	DISCHARGE CFS	7340.	2010.	4677.	653.
7340.	VELOCITY FPS	5.03	1.30	6.06	2.55
4	DISCHARGE CFS	8520.	2771.	5020.	729.
8520.	VELOCITY FPS	4.95	1.44	6.27	2.64
5	DISCHARGE CFS	11880.	5559.	5431.	891.
11880.	VELOCITY FPS	4.39	1.74	6.08	2.57
1	ELEV 603.0 KD	39821.	1534.	36343.	1944.
2	ELEV 606.6 KD	83157.	6394.	70097.	6666.
3	ELEV 610.8 KD	182016.	46265.	119168.	16583.
4	ELEV 611.4 KD	215002.	69758.	126831.	18413.
5	ELEV 613.3 KD	328910.	152243.	151833.	24835.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 14.95

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
593.00	0.					
594.	5.	10.	84.	1.	82.	1.
595.	21.	21.	520.	1.	518.	1.
596.	47.	31.	1531.	1.	1529.	1.
597.	84.	42.	3295.	1.	3293.	1.
598.	130.	52.	6123.	2.	6119.	2.
599.	186.	60.	10602.	31.	10526.	45.
600.	251.	68.	16204.	153.	15807.	223.
601.	322.	74.	23016.	423.	21959.	616.
602.	399.	80.	30977.	878.	28890.	1193.
603.	481.	85.	40096.	1555.	36558.	1967.
604.	569.	91.	50385.	2488.	44927.	2951.
605.	663.	97.	61882.	3718.	53993.	4171.
606.	763.	102.	74565.	5251.	63673.	5620.
607.	869.	108.	88494.	7135.	73993.	7332.
608.	1045.	247.	102303.	8008.	84934.	9321.
609.	1403.	474.	120349.	11187.	96469.	11598.
610.	1966.	704.	147712.	24913.	108610.	14189.
611.	2693.	736.	192960.	51987.	121269.	17077.
612.	3447.	769.	247675.	91173.	134504.	20305.
613.	4228.	801.	312486.	139775.	148297.	23885.
614.	5045.	834.	386259.	195209.	162608.	27817.
615.	5902.	866.	468407.	257794.	177427.	32114.
616.	6779.	899.	560780.	330860.	192791.	36810.
617.	7697.	931.	661035.	409896.	208636.	41891.
618.	8650.	969.	768654.	497555.	224984.	45457.
619.	9625.	1009.	884503.	594832.	241845.	47826.
620.	10668.	1052.	1008740.	697332.	259149.	51769.
621.	11740.	1095.	1143706.	809681.	276952.	56748.
622.	12856.	1137.	1288970.	929964.	295221.	63436.
623.	14027.	1202.	1439389.	1058560.	313951.	66257.
624.	15235.	1282.	1596163.	1196461.	333154.	66257.
625.	16550.	1340.	1771984.	1340337.	352787.	78201.
626.	17892.	1392.	1962980.	1494429.	372899.	95652.
627.	19360.	1476.	2149795.	1643649.	392416.	112300.
628.	20859.	1561.	2349112.	1802751.	414400.	131696.
629.	22488.	1645.	2564472.	1972012.	435793.	155900.
630.	24149.	1729.	2793628.	2151791.	457643.	182864.
631.	25946.	1814.	3039649.	2342166.	479892.	216643.
632.	27777.	1898.	3300717.	2543654.	502587.	254103.
633.	29743.	1983.	3579397.	2756180.	525675.	296476.
634.	31725.	2050.	3887407.	2990935.	549199.	346588.
635.	33775.	2050.	4272133.	3284116.	573111.	412925.
636.	35825.	2050.	4673581.	3589262.	597429.	485310.
637.	37875.	2050.	5055255.	3876823.	622038.	547354.
638.	39925.	2050.	5458459.	4180180.	647073.	615664.
639.	41975.	2050.	5883889.	4499814.	672533.	690711.

***** WSPZ MICROCOMPUTER TEST VERSION *****

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---------------------- LIST OF INPUT DATA WITH LIMITED EDITING-----------------------
END                                                                    370
ENDJOB                                                                 371


****************************NORMAL END OF JOB-----------------------------
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FILENAME = FMS:12.OUT

***** WSP2 MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
WSP2      40.                                                          1
TITLE     MISTEGUAY CREEK-FPMS-SAGINAW SHIAWASSEE & GENESEE CO., MI.   2
TITLE     FLOOD PLAIN MANAGEMENT STUDY - PRESENT CONDITIONS 10-27-88   3
TITLE     DISCHARGE FROM STRUCTURE 4 TO NORTHWOOD CREEK
DISCHARGE -1.       2470.     3970.     7590.     8820.     12430.     6
STARTE    15.1      626.1     628.4     630.2     630.5     631.6      9
TRIB      15.9                                                         9A
OUTPUT    PSK                                                          10
COMMENT   STARTING ELEVATIONS FROM MISTYB.OUT (TR 20 OF 10-27-88)
REACH     15.1      1.        0.        0.                             13
REACH2    15.9      0.                                                 14
REACH     15.9      1.        2338.     1600.                          15
REACH     15.95     1.        1267.     867.                           16
REACH2    15.9      1.                                                 17
REACH     16.0      1.        33.       33.                            18
COMMENT   CS 16.0 IS BUECHE RD AT STA. 486+53. BRIDGE HAS BEEN          19
COMMENT   REMOVED.  TREATED AS VALLEY SECTION.                          19A
REACH     16.1      1.        33.       33.                            20
REACH2    16.0      0.                                                 21
REACH     16.5      1.        3902.     3175.                          22
REACH     16.9      1.        3834.     3150.                          23
REACH     17.0      1.        100.      100.                           24
COMMENT   CS 17.0 IS CHESANING RD AT STA. 565+22.                       25
REACH     17.1      1.        100.      100.                           25A
REACH2    17.5      -1.                                                25B
REACH     17.5      1.        900.      700.                           26
REACH     17.9      1.        1471.     1250.                          27
REACH     17.95     1.         400.     400.                           28
REACH2    17.9      .3                                                 29
ROAD      18.0      2.7       100.      100.                           30
COMMENT   CS  18.0 IS EAST RD. AT STA. 597+18                           31
REACH     18.1      1.        100.      100.                           31A
REACH2    18.5      -6.10                                              31B
REACH     18.5      1.        3372.     2500.                          32
REACH     18.9      1.        1950.     1800.                          33
ROAD      19.0      2.7       200.      200.                           34
COMMENT   CS 19.0 IS VOLKMER RD AT STA. 653+40                          35
REACH     19.1      1.        100.      100.                           35A
REACH2    19.5      -5.2                                               35B
REACH     19.5      1.        4960.     3700.                          36
REACH     19.9      1.        2738.     2500.                          37
REACH     19.95     1.        1750.     1700.                          38
REACH2    19.9      4.5                                                39
ROAD      20.0      2.7       100.      100.                           40
COMMENT   CS 20.0 IS M-57 AT STA. 749+88.                               41
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***** WSP2 MICROCOMPUTER TEST VERSION *****

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-----------------------------80/80 LIST OF INPUT DATA-----------------------------
REACH     20.1      1.        100.      100.                          41A
REACH2    20.5      -3.85                                             41B
REACH     20.5      1.        6387.     6000.                         42
REACH     20.9      1.        4061.     3800.                         43
REACH     21.0      2.7       300.      300.                          44
COMMENT   CS 21.0 IS FERDEN RD AT STA. 858+36                          45
REACH     21.1      1.        400.      400.                          46
REACH     21.95     1.        710.      710.                          47
REACH2    21.1      1.2                                               48
SEGMENT   15.9      1         N         -40.                          51
N VALUE   .075                                                        52
SEGMENT   15.9      2         C         25.                           53
N VALUE   .058                                                        54
SEGMENT   15.9      3         N         110.                          55
N VALUE   .075                                                        56
SECTION   15.9                                                        57
          -1915.    634.      -1600.    632.1     -1350.    632.      58
          -1300.    632.      -1000.    630.      -800.     620.      59
          -590.     616.      -490.     604.      -375.     604.      60
          -300.     602.      -240.     604.      -175.     602.      61
          -40.      600.      -25.      596.      0.        596.      62
          25.       596.      110.      634.                          63
ENDTABLE                                                              64
COMPUTE   15.1      15.9      15.1
-----------------------------END OF DATA LISTING----------------------------
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                    COMPUTE   15.1      15.9      15.1

*****WARNING - SECT. 15.1   KD VALUES REVERSED ON SEGMENT  1 AT ELEVATION    633.80  VALUE CHANGED TO EQUAL PREVIOUS VALUE *****


----------------------------STARTING DATA FROM GIVEN ELEVATION-----------------------------
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 15.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	596.0	0.0	0.0							
LOW GRND	596.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	596.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	17177.9	2470.0	0.00	0.00	0.00	2470.00	599.9	0.00000	1014.3
2	628.4	19568.3	3970.0	0.00	0.00	0.00	3970.00	601.5	0.00000	1065.5
3	630.2	21545.5	7590.0	0.00	0.00	0.00	7590.00	603.1	0.00001	1131.5
4	630.5	21916.9	8820.0	0.00	0.00	0.00	8820.00	603.4	0.00001	1177.2
5	631.6	23278.8	12430.0	0.00	0.00	0.00	12430.00	604.2	0.00001	1344.6

SEGMENT TABLE FOR SECTION 15.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2470.	1864.	487.	119.
2470.	VELOCITY FPS	0.16	0.13	0.25	0.12
2	DISCHARGE CFS	3970.	3035.	740.	195.
3970.	VELOCITY FPS	0.23	0.19	0.36	0.17
3	DISCHARGE CFS	7590.	5834.	1375.	381.
7590.	VELOCITY FPS	0.40	0.32	0.63	0.29
4	DISCHARGE CFS	8820.	6755.	1613.	452.
8820.	VELOCITY FPS	0.46	0.37	0.73	0.34
5	DISCHARGE CFS	12430.	9399.	2352.	679.
12430.	VELOCITY FPS	0.62	0.48	1.03	0.48

1	ELEV	626.1	KD	2386785.	1800799.	470714.	115271.
2	ELEV	628.4	KD	2859197.	2185739.	533173.	140285.
3	ELEV	630.2	KD	3225894.	2479650.	584200.	162044.
4	ELEV	630.5	KD	3242468.	2483723.	592882.	165863.
5	ELEV	631.6	KD	3303925.	2498414.	625166.	180344.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 15.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
596.00	0.					
597.	53.	56.	1311.	1.	1296.	13.
598.	112.	62.	4252.	1.	4168.	83.
599.	177.	68.	8554.	1.	8307.	246.
600.	248.	74.	14147.	1.	13616.	530.
601.	362.	144.	22090.	349.	20606.	961.
602.	540.	218.	33000.	2548.	28727.	1562.
603.	800.	316.	48040.	7789.	37894.	2356.
604.	1187.	426.	69537.	17842.	48034.	3365.
605.	1706.	543.	100242.	36131.	59122.	4606.
606.	2254.	554.	143294.	65840.	71112.	6101.
607.	2814.	565.	194298.	102297.	83970.	7866.
608.	3384.	575.	252686.	144953.	97669.	9921.
609.	3963.	586.	318476.	194006.	112189.	12282.
610.	4555.	596.	390538.	247965.	127494.	14966.
611.	5158.	607.	469391.	307695.	143575.	17990.
612.	5770.	617.	554848.	372954.	160413.	21368.
613.	6393.	628.	646681.	443476.	177990.	25118.
614.	7024.	639.	745186.	519635.	196296.	29255.
615.	7670.	649.	849117.	599941.	215301.	33793.
616.	8331.	675.	948299.	674523.	235007.	38746.
617.	9016.	714.	1042689.	743146.	255402.	44131.
618.	9758.	769.	1134839.	808402.	276466.	49960.
619.	10565.	824.	1238188.	883717.	298190.	56249.
620.	11403.	873.	1353753.	970105.	320574.	63010.
621.	12295.	899.	1499540.	1085571.	343596.	70257.
622.	13208.	923.	1655388.	1209985.	367253.	78004.
623.	14135.	945.	1821353.	1343546.	391542.	86265.
624.	15099.	968.	1994748.	1483124.	416440.	95051.
625.	16077.	990.	2176879.	1630441.	441953.	104376.
626.	17078.	1012.	2367313.	1784876.	468070.	114253.
627.	18103.	1034.	2566182.	1946576.	494782.	124695.
628.	19144.	1057.	2773826.	2115965.	522087.	135713.
629.	20217.	1079.	2989740.	2292313.	549971.	147320.
630.	21298.	1101.	3214888.	2476918.	578440.	159529.
631.	22536.	1253.	3270885.	2490447.	607471.	172351.
632.	23884.	1437.	3324251.	2501046.	637075.	185799.
633.	25674.	1745.	3369045.	2501046.	667235.	199885.
634.	27510.	1995.	3472720.	2559331.	697958.	214942.
635.	29533.	2012.	3829198.	2866520.	729224.	232071.
636.	31557.	2025.	4206698.	3194357.	761036.	249665.
637.	33582.	2025.	4588547.	3519521.	793358.	266360.
638.	35607.	2025.	4994592.	3868734.	826225.	283729.
639.	37632.	2025.	5425726.	4243142.	859632.	301781.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 15.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	596.0	0.0	0.0							
LOW GRND	596.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	596.0	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	17179.8	2470.0	0.00	3.49	37.26	2470.00	599.9	0.00000	1014.4
2	628.4	19571.9	3970.0	0.00	3.49	39.14	3970.00	601.5	0.00000	1065.5
3	630.2	21557.5	7590.0	0.00	3.49	41.62	7590.00	603.1	0.00000	1133.0
4	630.5	21933.0	8820.0	0.00	3.49	43.31	8820.00	603.4	0.00001	1179.2
5	631.6	23309.8	12430.0	0.00	3.49	49.53	12430.00	604.2	0.00001	1348.4

SEGMENT TABLE FOR SECTION 15.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2470.	1930.	417.	124.
2470.	VELOCITY FPS	0.15	0.14	0.22	0.12
2	DISCHARGE CFS	3970.	3136.	633.	201.
3970.	VELOCITY FPS	0.21	0.19	0.30	0.17
3	DISCHARGE CFS	7590.	6022.	1174.	394.
7590.	VELOCITY FPS	0.37	0.33	0.54	0.30
4	DISCHARGE CFS	8820.	6975.	1379.	467.
8820.	VELOCITY FPS	0.43	0.38	0.62	0.35
5	DISCHARGE CFS	12430.	9714.	2013.	703.
12430.	VELOCITY FPS	0.58	0.50	0.88	0.49

1	ELEV	626.1	KD	2787339.	2177209.	470764.	139366.
2	ELEV	628.4	KD	3345771.	2642878.	533266.	169626.
3	ELEV	630.2	KD	3778128.	2997617.	584480.	196031.
4	ELEV	630.5	KD	3796553.	3002592.	593260.	200700.
5	ELEV	631.6	KD	3864864.	3020540.	625911.	218414.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 15.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
596.00	0.					
597.	53.	56.	1314.	1.	1296.	16.
598.	112.	62.	4270.	1.	4168.	101.
599.	177.	68.	8606.	1.	8307.	297.
600.	248.	74.	14258.	1.	13616.	640.
601.	362.	144.	22399.	422.	20606.	1161.
602.	540.	218.	33889.	3080.	28727.	1888.
603.	800.	316.	50158.	9415.	37894.	2849.
604.	1187.	426.	74006.	21568.	48034.	4067.
605.	1706.	543.	108793.	43677.	59122.	5568.
606.	2254.	554.	158341.	79589.	71112.	7375.
607.	2814.	565.	217317.	123658.	83970.	9509.
608.	3384.	575.	285038.	175222.	97669.	11993.
609.	3963.	586.	361554.	234518.	112189.	14847.
610.	4555.	596.	445451.	299745.	127494.	18091.
611.	5158.	607.	537409.	371949.	143575.	21746.
612.	5770.	617.	637197.	450834.	160413.	25831.
613.	6393.	628.	744539.	536083.	177990.	30364.
614.	7024.	639.	859806.	628146.	196296.	35364.
615.	7670.	649.	981458.	725223.	215301.	40849.
616.	8331.	675.	1097248.	815377.	235007.	46838.
617.	9016.	714.	1207090.	898331.	255402.	53347.
618.	9758.	769.	1314086.	977214.	276466.	60393.
619.	10565.	824.	1434476.	1068255.	298190.	67995.
620.	11403.	873.	1569493.	1172684.	320574.	76168.
621.	12295.	899.	1740905.	1312262.	343596.	84929.
622.	13208.	923.	1924353.	1462656.	367253.	94294.
623.	14135.	945.	2119928.	1624108.	391542.	104279.
624.	15099.	968.	2324310.	1792834.	416440.	114900.
625.	16077.	990.	2539151.	1970912.	441953.	126172.
626.	17078.	1012.	2763897.	2157598.	468070.	138112.
627.	18103.	1034.	2998715.	2353063.	494782.	150733.
628.	19144.	1057.	3244026.	2557823.	522087.	164053.
629.	20217.	1079.	3499192.	2770997.	549971.	178084.
630.	21298.	1101.	3765437.	2994154.	578440.	192842.
631.	22536.	1253.	3827015.	3010509.	607471.	208342.
632.	23884.	1437.	3885365.	3023318.	637075.	224598.
633.	25674.	1746.	3933171.	3023318.	667235.	241625.
634.	27510.	1995.	4052075.	3093777.	697958.	259827.
635.	29533.	2012.	4476320.	3465114.	729224.	280533.
636.	31557.	2025.	4925963.	3861406.	761036.	301800.
637.	33582.	2025.	5379572.	4254471.	793358.	321982.
638.	35607.	2025.	5862487.	4676608.	826225.	342977.
639.	37632.	2025.	6375849.	5129201.	859632.	364799.

***** WSPZ MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
TITLE      DISCHARGE FROM NORTHWOOD CREEK TO STRUCTURE 3
CHANGE     DISCHARGE
DISCHARGE  -1.       2020.     3180.     6850.     7900.     10900.
END
SEGMENT    16.0      1         N         -61.                          65
N VALUE    .075                                                        66
SEGMENT    16.0      2         C         61.                           67
N VALUE    .058                                                        68
SEGMENT    16.0      3         N         2740.                         69
N VALUE    .075                                                        70
SECTION    16.0                                                        71
           -860.     634.      -800.     632.      -600.     618.      72
           -400.     610.      -61.      608.      -60.      597.      73
           0.        597.      60.       597.      61.       608.      74
           1075.     606.      1300.     608.      1610.     624.      75
           1890.     608.      1940.     608.      2300.     612.      76
           2400.     614.      2740.     634.                          77
ENDTABLE                                                               78
SEGMENT    16.5      1         N         -120.                         79
N VALUE    .065                                                        80
SEGMENT    16.5      2         C         25.                           81
N VALUE    .050                                                        82
SEGMENT    16.5      3         N         455.                          83
N VALUE    .075                                                        84
SECTION    16.5                                                        85
           -425.     634.      -365.     632.      -235.     620.      86
           -120.     618.      -32.      604.      -18.      602.      87
           0.        602.      18.       602.      25.       608.      88
           30.       610.      335.      612.      385.      614.      89
           455.      634.                                              90
ENDTABLE                                                               91
SEGMENT    16.9      1         N         -100.                         92
N VALUE    .065                                                        93
SEGMENT    16.9      2         C         55.                           94
N VALUE    .050                                                        95
SEGMENT    16.9      3         N         1150.                         96
N VALUE    .075                                                        97
SECTION    16.9                                                        98
           -150.     640.      -100.     634.      -45.      606.      99
           0.        606.      40.       606.      55.       612.      100
           335.      610.      375.      610.      875.      614.      101
           965.      616.      1050.     634.      1150.     640.      102
ENDTABLE                                                               103
BPR        17.0      A         1.        3.                            104
PIER       606.0     2.5                                               105
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
GIRDER    670.2     629.7     0.        .8        2.7                   106
          -54.1     631.9     -54.      629.7     54.       679.7       107
          54.1      631.9                                                 108
ENDTABLE                                                                  109
SECTION   17.0                                                            110
          -1450.    643.      -200.     635.      -100.     632.8       111
          -54.1     631.9     -54.      626.5     -22.      606.4       112
          0.        606.      14.       608.4     54.       626.7       113
          54.1      631.9     100.      631.6     200.      630.9       114
          300.      629.8     400.      629.1     600.      628.6       115
          700.      628.6     800.      629.2     900.      630.8       116
          1000.     634.8     1200.     642.                            117
ENDTABLE                                                                  118
SEGMENT   17.5      1         N         -65.                            119
N VALUE   .085                                                            120
SEGMENT   17.5      2         C         30.                             121
N VALUE   .050                                                            122
SEGMENT   17.5      3         N         700.                            123
N VALUE   .085                                                            124
SECTION   17.5                                                            125
          -150.     640.      -75.      632.      -65.      630.        126
          -24.      608.      -12.      607.      0.        607.        127
          12.       607.      24.       608.      30.       612.        128
          170.      614.      265.      616.      300.      618.        129
          315.      620.      360.      622.      400.      624.        130
          630.      626.      650.      632.      700.      640.        131
ENDTABLE                                                                  132
SEGMENT   17.9      1         N         -60.                            133
N VALUE   .085                                                            134
SEGMENT   17.9      2         C         25.                             135
N VALUE   .050                                                            136
SEGMENT   17.9      3         N         100.                            137
N VALUE   .085                                                            138
SECTION   17.9                                                            139
          -820.     642.9     -630.     632.      -560.     620.        140
          -320      618.      -300.     614.      -230.     612.        141
          -210.     616.      -60.      616.      -35.      612.        142
          -15.      610.      -7.       609.      0.        609.        143
          14.       609.      25.       610.      65.       632.        144
          100.      640.                                                145
ENDTABLE                                                                  146
BPR       18.0      A         1.        7                               147
PIER      609.4     3.                                                    148
GIRDER    632.9     632.4     0.        .8        2.7                   149
          -70.1     635.2     -70.      632.4     70.       632.4       151
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
          70.1      635.7                                                  152
ENDTABLE                                                                   153
SECTION   18.0                                                             154
          -1150.    645.      -600.     639.8     -500.     636.9          155
          -400.     634.6     -300.     634.7     -200.     634.9          156
          -70.1     635.2     -70.      629.9     -29.5     612.4          157
          0.        609.4     29.       612.4     70.       627.9          158
          70.1      635.7     200.      636.3     300.      639.0          159
          2150.     642.                                                   160
ENDTABLE                                                                   161
SEGMENT   18.5      1         N         -30.                               162
N VALUE   .100                                                             163
SEGMENT   18.5      2         C         35.                                164
N VALUE   .058                                                             165
SEGMENT   18.5      3         N         1040.                              166
N VALUE   .100                                                             167
SECTION   18.5                                                             168
          -65.      644.      -30.      620.      -20.      615.5          169
          0.        615.5     20.       615.5     35.       620.           170
          45.       622.      60.       624.      865.      624.           171
          925.      642.      1040.     644.                               172
ENDTABLE                                                                   173
SEGMENT   18.9      1         N         -30.                               174
N VALUE   .100                                                             175
SEGMENT   18.9      2         C         35.                                176
N VALUE   .058                                                             177
SEGMENT   18.9      3         N         315.                               178
N VALUE   .100                                                             179
SECTION   18.9                                                             180
          -390.     644.      -250.     642.      -90.      636.           181
          -80.      634.      -65.      632.      -30.      622.           182
          -12.      620.      0.        619.3     12.       620.           183
          35.       622.      80.       624.      260.      626.           184
          315.      644.                                                   185
ENDTABLE                                                                   186
BPR       19.0      A         1                                            187
GIRDER    633.3     632.8     0.        .8        2.7                      188
          -38.1     633.8     -38.      632.8     38.       632.8          190
          38.1      633.9                                                  191
ENDTABLE                                                                   192
SECTION   19.0                                                             193
          -1100.    648.      -200.     639.6     -100.     635.6          194
          -38.1     633.8     -38.      620.6     0.        619.3          195
          38.       621.6     38.1      633.9     100.      633.1          196
          200.      632.2     300.      632.1     400.      632.1          197
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
          500.      632.      600.      633.0     700.      634.9     198
          1400.     650.                                             199
ENDTABLE                                                             200
SEGMENT   19.5      1         N         -55.                         201
N VALUE   .110                                                       202
SEGMENT   19.5      2         C         50.                          203
N VALUE   .065                                                       204
SEGMENT   19.5      3         N         520.                         205
N VALUE   .110                                                       206
SECTION   19.5                                                       207
          -1500.    650.      -485.     646.      -400.     644.      208
          -300.     642.      -250.     640.      -120.     638.      209
          -55.      636.      -30.      638.      -14.      624.5     210
          0.        624.5     14.       624.5     20.       628.      211
          25.       630.      50.       632.      460.      635.      212
          520.      652.                                             213
ENDTABLE                                                             214
SEGMENT   19.9      1         N         -50.                         215
N VALUE   .110                                                       216
SEGMENT   19.9      2         C         60.                          217
N VALUE   .065                                                       218
SEGMENT   19.9      3         N         725.                         219
N VALUE   .110                                                       220
SECTION   19.9                                                       221
          -875.     652.      -565.     650.      -515.     636.      222
          -50.      636.      -20.      630.      -15.      627.4     223
          .0        627.4     15.       627.4     22.       630.      224
          25.       632.      60.       634.      90.       636.      225
          170.      638.      225.      640.      250.      642.      226
          365.      644.      725.      652.                           227
ENDTABLE                                                             228
BPR       20.0      B         1         2                              229
PIER      629.8     3.0       629.2     3.0                            230
GIRDER    649.3     648.8     20.       .8        2.7                  231
          -57.6     652.5     -57.5     648.8     57.5      648.8     232
          57.6      652.5                                            233
ENDTABLE                                                             234
SECTION   20.0                                                       235
          -1850     659.      -658.     655.4     -358.     653.1     236
          -158.     652.      -57.6     652.5     -57.5     638.6     237
          -43.      633.6     -18.5     629.8     0.        629.3     238
          18.5      629.2     42.       633.6     57.5      638.2     239
          57.6      652.5     158.      652.      358.      653.2     240
          458.      654.3     558.      655.3     658.      656.3     241
          3200.     659.                                             241A
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-------------------------------
ENDTABLE                                                                        242
SEGMENT   20.5      1         N         -25.                                    243
N VALUE   .110                                                                  244
SEGMENT   20.5      2         C         70.                                     245
N VALUE   .065                                                                  246
SEGMENT   20.5      3         N         1240.                                   247
N VALUE   .110                                                                  248
SECTION   20.5                                                                  249
          -100.     658.      -25.      636.      -15.      633.15              251
          0.        633.15    15.       633.15    35.       640.                252
          70.       642.      275.      644.      650.      646.                253
          975.      648.      1075.     650.      1100.     652.                254
          1150.     654.      1220.     656.      1240.     658.                255
ENDTABLE                                                                        256
SEGMENT   20.9      1         N         -28.                                    257
N VALUE   .110                                                                  258
SEGMENT   20.9      2         C         30.                                     259
N VALUE   .065                                                                  260
SEGMENT   20.9      3         N         650.                                    261
N VALUE   .110                                                                  262
SECTION   20.9                                                                  263
          -850.     665.      -740.     662.      -550.     660.                265
          -435.     658.      -415.     648.      -185.     646.                266
          -150.     644.      -115.     642.      -80.      642.                267
          -28       642.      -20.      640.      -18.      637.3               268
          0.        637.3     18.       637.3     20.       640.                269
          30.       642.      50.       642.      165.      644.                270
          290.      646.      650.      665.                                    271
ENDTABLE                                                                        272
BPR       21.0      A         3                                                 273
GIRDER    650.8     650.3     0.        .8        2.7                           274
          -21.3     652.9     -21.3     650.3     21.3      650.3               275
          21.3      652.9                                                       276
ENDTABLE                                                                        277
SECTION   21.0                                                                  278
          -800.     665.      -200.     656.3     -100.     653.6               279
          -21.3     652.9     -21.2     639.6     0.        637.3               280
          21.2      638.0     21.3      652.9     100.      651.1               281
          200.      650.2     300.      650.1     400.      652.0               282
          500.      655.4     525.      656.6     750.      665.0               283
ENDTABLE                                                                        284
SEGMENT   21.1      1         N         -50.                                    285
N VALUE   .055                                                                  286
SEGMENT   21.1      2         C         30.                                     287
N VALUE   .050                                                                  288
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
SEGMENT   21.1      3         N         1110.                                 289
N VALUE   .055                                                                 290
SECTION   21.1                                                                 291
          -970.     664.      -600.     662.      -150.     660.              292
          -100.     646.      -50.      646.      -17.      640.              293
          -15.      637.3     0.        637.3     15.       637.3             294
          17.       640.      30.       642.      130.      644.              295
          215.      646.      710.      648.      830.      658.              296
          915.      660.      1060.     662.      1110.     664.              297
ENDTABLE                                                                       298
SEGMENT   NORTH     1         N         -30.                                  299
N VALUE   .070                                                                 300
SEGMENT   NORTH     2         C         30.                                   301
N VALUE   .063                                                                 302
SEGMENT   NORTH     3         N         325.                                  303
N VALUE   .070                                                                 304
SECTION   NORTH                                                                305
          -600.     650.      -200.     648.      -175.     646.              306
          -165.     644.      -155.     642.      -145.     640.              307
          -30.      638.      -15.      636.      -5.       634.              308
          5.        634.      15.       636.      30.       638.              309
          150.      640.      250.      648.      325.      650.              310
ENDTABLE                                                                       311
COMPUTE   16.0      21.95     15.9                                            312
-----------------------------END OF DATA LISTING----------------------------
```

COMPUTE	16.0	21.95	15.9	312

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 16.0 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	597.0	0.0	0.0							
LOW GRND	606.0	1087.4	43.0	0.00	0.09	0.09				121.6
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	608.0	2570.0	101.5	0.00	0.09	1.03				1361.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	51123.4	2020.0	0.00	0.09	2.52	2020.00	599.1	0.00000	3321.5
2	628.4	58844.8	3180.0	0.00	0.09	2.57	3180.00	599.8	0.00000	3393.5
3	630.2	65029.9	6850.0	0.00	0.09	2.61	6850.00	601.7	0.00000	3450.1
4	630.5	66078.3	7900.0	0.00	0.09	2.62	7900.00	602.1	0.00000	3459.8
5	631.6	69960.5	10900.0	0.00	0.09	2.65	10900.00	603.3	0.00000	3496.6

SEGMENT TABLE FOR SECTION 16.0

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	301.	241.	1478.
2020.	VELOCITY FPS	0.04	0.03	0.07	0.04
2	DISCHARGE CFS	3180.	485.	347.	2348.
3180.	VELOCITY FPS	0.06	0.05	0.09	0.05
3	DISCHARGE CFS	6850.	1061.	704.	5084.
6850.	VELOCITY FPS	0.11	0.09	0.17	0.10
4	DISCHARGE CFS	7900.	1227.	805.	5868.
7900.	VELOCITY FPS	0.13	0.10	0.20	0.12
5	DISCHARGE CFS	10900.	1707.	1075.	8118.
10900.	VELOCITY FPS	0.16	0.14	0.26	0.15

1	ELEV	626.1	KD	6480067.	964025.	774297.	4741745.
2	ELEV	628.4	KD	8051070.	1226563.	879396.	5945110.
3	ELEV	630.2	KD	9385517.	1453786.	965638.	6966093.
4	ELEV	630.5	KD	9619323.	1493732.	980455.	7145135.
5	ELEV	631.6	KD	10489734.	1641930.	1035540.	7812263.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 16.0

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
597.00	0.					
598.	120.	120.	3046.	1.	3044.	1.
599.	240.	120.	9577.	1.	9575.	1.
600.	361.	121.	18648.	1.	18646.	1.
601.	481.	121.	29841.	1.	29839.	1.
602.	602.	121.	42894.	1.	42892.	1.
603.	723.	121.	57608.	1.	57606.	1.
604.	844.	121.	73837.	1.	73835.	1.
605.	966.	121.	91456.	1.	91454.	1.
606.	1087.	122.	110352.	1.	110350.	1.
607.	1519.	741.	134307.	1.	130440.	3865.
608.	2570.	1361.	176197.	1.	151647.	24549.
609.	4177.	1707.	254275.	487.	175517.	71872.
610.	6025.	1960.	361790.	6253.	200766.	150171.
611.	8089.	2156.	501597.	19952.	227355.	251682.
612.	10308.	2301.	674287.	40937.	255252.	376990.
613.	12659.	2419.	881880.	67694.	284425.	529760.
614.	15155.	2522.	1118617.	98591.	314845.	703397.
615.	17724.	2610.	1390365.	136090.	346491.	906285.
616.	20364.	2689.	1696348.	179680.	379340.	1136797.
617.	23093.	2768.	2029291.	228320.	413367.	1387012.
618.	25909.	2843.	2391053.	283574.	448554.	1658010.
619.	28788.	2915.	2784366.	346191.	484881.	1952570.
620.	31730.	2983.	3208425.	416208.	522332.	2269426.
621.	34760.	3051.	3658013.	491044.	560889.	2605289.
622.	37833.	3119.	4140093.	572791.	600538.	2966496.
623.	40993.	3188.	4647269.	659156.	641263.	3346358.
624.	44212.	3242.	5196496.	751462.	683049.	3761428.
625.	47470.	3287.	5788984.	850348.	725886.	4212748.
626.	50785.	3318.	6414418.	953069.	769756.	4690924.
627.	54111.	3350.	7077730.	1063190.	814654.	5199679.
628.	57483.	3381.	7762809.	1177915.	860561.	5723838.
629.	60877.	3412.	8479962.	1299158.	907471.	6273015.
630.	64304.	3443.	9223260.	1425931.	955372.	6841625.
631.	67766.	3476.	9992142.	1557032.	1004254.	7430524.
632.	71250.	3509.	10789790.	1693214.	1054108.	8042315.
633.	74797.	3549.	11601085.	1833401.	1104922.	8672403.
634.	78359.	3592.	12442041.	1956039.	1156690.	9329186.
635.	81951.	3600.	13324985.	2115741.	1209391.	9996622.
636.	85551.	3600.	14246734.	2289543.	1263028.	10687420.
637.	89151.	3600.	15206468.	2472674.	1317594.	11406663.
638.	92751.	3600.	16204748.	2665383.	1373084.	12154726.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 16.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	597.0	0.0	0.0							
LOW GRND	606.0	1087.4	43.0	0.00	0.09	0.09				121.6
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	608.0	2570.0	101.5	0.00	0.09	1.03				1361.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	51123.4	2020.0	0.00	0.09	2.52	2020.00	599.1	0.00000	3321.5
2	628.4	58844.8	3180.0	0.00	0.09	2.57	3180.00	599.8	0.00000	3393.5
3	630.2	65029.9	6850.0	0.00	0.09	2.61	6850.00	601.7	0.00000	3450.1
4	630.5	66078.3	7900.0	0.00	0.09	2.62	7900.00	602.1	0.00000	3459.8
5	631.6	69960.7	10900.0	0.00	0.09	2.65	10900.00	603.3	0.00000	3496.6

SEGMENT TABLE FOR SECTION 16.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	301.	241.	1478.
2020.	VELOCITY FPS	0.04	0.03	0.07	0.04
2	DISCHARGE CFS	3180.	485.	347.	2348.
3180.	VELOCITY FPS	0.06	0.05	0.09	0.05
3	DISCHARGE CFS	6850.	1061.	704.	5084.
6850.	VELOCITY FPS	0.11	0.09	0.17	0.10
4	DISCHARGE CFS	7900.	1227.	805.	5868.
7900.	VELOCITY FPS	0.13	0.10	0.20	0.12
5	DISCHARGE CFS	10900.	1707.	1075.	8118.
10900.	VELOCITY FPS	0.16	0.14	0.26	0.15

1	ELEV	626.1	KD	6480067.	964025.	774297.	4741745.
2	ELEV	628.4	KD	8051070.	1226563.	879396.	5945110.
3	ELEV	630.2	KD	9385517.	1453786.	965638.	6966093.
4	ELEV	630.5	KD	9619323.	1493732.	980455.	7145135.
5	ELEV	631.6	KD	10489783.	1641940.	1035543.	7812301.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 16.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
597.00	0.					
598.	120.	120.	3046.	1.	3044.	1.
599.	240.	120.	9577.	1.	9575.	1.
600.	361.	121.	18648.	1.	18646.	1.
601.	481.	121.	29841.	1.	29839.	1.
602.	602.	121.	42894.	1.	42892.	1.
603.	723.	121.	57608.	1.	57606.	1.
604.	844.	121.	73837.	1.	73835.	1.
605.	966.	121.	91456.	1.	91454.	1.
606.	1087.	122.	110352.	1.	110350.	1.
607.	1519.	741.	134307.	1.	130440.	3865.
608.	2570.	1361.	176197.	1.	151647.	24549.
609.	4177.	1707.	254275.	487.	175517.	71872.
610.	6025.	1960.	361790.	6253.	200766.	150171.
611.	8089.	2156.	501597.	19952.	227355.	251682.
612.	10308.	2301.	674287.	40937.	255252.	376990.
613.	12659.	2419.	881880.	67694.	284425.	529760.
614.	15155.	2522.	1118617.	98591.	314845.	703397.
615.	17724.	2610.	1390365.	136090.	346491.	906285.
616.	20364.	2689.	1696348.	179680.	379340.	1136797.
617.	23093.	2768.	2029291.	228320.	413367.	1387012.
618.	25909.	2843.	2391053.	283574.	448554.	1658010.
619.	28788.	2915.	2784366.	346191.	484881.	1952570.
620.	31730.	2983.	3208425.	416208.	522332.	2269426.
621.	34760.	3051.	3658013.	491044.	560889.	2605289.
622.	37833.	3119.	4140093.	572791.	600538.	2966496.
623.	40993.	3188.	4647269.	659156.	641263.	3346358.
624.	44212.	3242.	5196496.	751462.	683049.	3761428.
625.	47470.	3287.	5788984.	850348.	725886.	4212748.
626.	50785.	3318.	6414418.	953069.	769756.	4690924.
627.	54111.	3350.	7077730.	1063190.	814654.	5199679.
628.	57483.	3381.	7762809.	1177915.	860561.	5723838.
629.	60877.	3412.	8479962.	1299158.	907471.	6273015.
630.	64304.	3443.	9223260.	1425931.	955372.	6841625.
631.	67766.	3476.	9992142.	1557032.	1004254.	7430524.
632.	71250.	3509.	10789790.	1693214.	1054108.	8042315.
633.	74797.	3549.	11601085.	1823401.	1104922.	8672403.
634.	78359.	3592.	12442041.	1956039.	1156690.	9329186.
635.	81951.	3600.	13324985.	2115741.	1209391.	9996622.
636.	85551.	3600.	14246734.	2289543.	1263028.	10687420.
637.	89151.	3600.	15206468.	2472674.	1317594.	11406663.
638.	92751.	3600.	16204748.	2665383.	1373084.	12154726.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 16.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	602.0	0.0	0.0							
LOW GRND	608.0	357.3	77.6	0.00	7.36	7.36				82.1
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	608.0	357.3	77.6	0.00	7.36	7.36				82.1
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	9299.8	2020.0	0.00	12.99	53.10	2020.00	605.9	0.00000	728.6
2	628.4	11015.2	3180.0	0.00	12.99	55.51	3180.00	607.1	0.00000	761.6
3	630.3	12436.4	6850.0	0.00	12.99	57.43	6850.00	609.8	0.00001	787.9
4	630.6	12684.6	7900.0	0.00	12.99	57.78	7900.00	611.4	0.00001	792.8
5	631.7	13601.3	10900.0	0.00	12.99	59.15	10900.00	612.2	0.00002	811.6

SEGMENT TABLE FOR SECTION 16.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	124.	822.	1074.
2020.	VELOCITY FPS	0.24	0.12	0.31	0.19
2	DISCHARGE CFS	3180.	256.	1234.	1689.
3180.	VELOCITY FPS	0.32	0.17	0.41	0.26
3	DISCHARGE CFS	6850.	649.	2572.	3629.
6850.	VELOCITY FPS	0.61	0.35	0.79	0.50
4	DISCHARGE CFS	7900.	766.	2950.	4184.
7900.	VELOCITY FPS	0.69	0.40	0.89	0.56
5	DISCHARGE CFS	10900.	1142.	3996.	5762.
10900.	VELOCITY FPS	0.89	0.52	1.15	0.73
1	ELEV 626.1 KD	1336373.	81193.	544664.	710516.
2	ELEV 628.4 KD	1707808.	137154.	663260.	907394.
3	ELEV 630.3 KD	2034378.	192307.	764072.	1077999.
4	ELEV 630.6 KD	2092908.	202576.	781890.	1108442.
5	ELEV 631.7 KD	2311002.	241215.	847951.	1221836.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 16.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
602.00	0.					
603.	40.	44.	1113.	1.	1110.	1.
604.	88.	52.	3683.	1.	3681.	1.
605.	144.	60.	7617.	1.	7615.	1.
606.	208.	67.	12900.	1.	12898.	1.
607.	279.	75.	19579.	1.	19577.	1.
608.	357.	82.	27711.	1.	27709.	1.
609.	444.	91.	37743.	1.	37725.	16.
610.	539.	100.	49450.	1.	49344.	105.
611.	718.	258.	63888.	1.	62621.	1266.
612.	1056.	417.	84786.	1.	77612.	7173.
613.	1489.	449.	116150.	1.	94377.	21772.
614.	1956.	476.	155865.	1.	112989.	42235.
615.	2440.	490.	204368.	1.	133489.	70202.
616.	2934.	499.	260896.	1.	155936.	104504.
617.	3438.	509.	324815.	1.	180387.	144168.
618.	3951.	519.	396100.	1.	206884.	189215.
619.	4513.	580.	479674.	165.	241230.	237562.
620.	5119.	625.	572813.	2599.	277893.	291194.
621.	5761.	655.	675589.	8769.	316740.	349655.
622.	6423.	670.	787446.	17514.	357447.	411932.
623.	7103.	684.	907519.	28663.	399961.	477948.
624.	7792.	698.	1037181.	43235.	444671.	548975.
625.	8499.	713.	1174505.	59634.	491019.	623264.
626.	9219.	727.	1320418.	78937.	539246.	701666.
627.	9949.	741.	1475500.	101463.	589473.	784564.
628.	10702.	756.	1637508.	125744.	641098.	870150.
629.	11465.	770.	1808649.	153461.	694657.	960128.
630.	12242.	784.	1987996.	183956.	749886.	1053716.
631.	13034.	800.	2174837.	216707.	806774.	1150937.
632.	13838.	816.	2369825.	252045.	865432.	1252147.
633.	14678.	846.	2565641.	283549.	925528.	1356404.
634.	15528.	880.	2768160.	315592.	987508.	1465060.
635.	16408.	880.	3005666.	371932.	1050736.	1581845.
636.	17288.	880.	3251829.	432906.	1115557.	1702189.
637.	18168.	880.	3494397.	486966.	1180718.	1820018.
638.	19048.	880.	3747457.	545964.	1247688.	1942337.
639.	19928.	880.	4011151.	610194.	1316465.	2069187.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 16.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	606.0	0.0	0.0							
LOW GRND	610.0	375.7	48.8	0.00	9.05	9.05				102.9
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	612.0	1200.4	156.0	0.00	9.84	49.30				681.8
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.1	15540.9	2020.0	0.00	12.28	79.35	2020.00	608.5	0.00000	1097.3
2	628.4	18091.7	3180.0	0.00	12.68	80.46	3180.00	609.4	0.00000	1112.7
3	630.3	20161.8	6850.0	0.00	13.00	81.36	6850.00	611.6	0.00000	1125.1
4	630.6	20521.7	7900.0	0.00	13.05	81.51	7900.00	611.8	0.00001	1127.2
5	631.7	21830.7	10900.0	0.00	13.25	82.07	10900.00	612.2	0.00001	1135.0

SEGMENT TABLE FOR SECTION 16.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	0.	433.	1587.
2020.	VELOCITY FPS	0.14	0.00	0.18	0.12
2	DISCHARGE CFS	3180.	0.	650.	2530.
3180.	VELOCITY FPS	0.18	0.00	0.24	0.16
3	DISCHARGE CFS	6850.	0.	1360.	5490.
6850.	VELOCITY FPS	0.35	0.00	0.46	0.32
4	DISCHARGE CFS	7900.	0.	1562.	6338.
7900.	VELOCITY FPS	0.40	0.00	0.52	0.36
5	DISCHARGE CFS	10900.	0.	2123.	8777.
10900.	VELOCITY FPS	0.52	0.00	0.67	0.47

1	ELEV	626.1	KD	2103895.	1.	451084.	1652810.
2	ELEV	628.4	KD	2674572.	1.	547236.	2127334.
3	ELEV	630.3	KD	3172652.	1.	630396.	2542254.
4	ELEV	630.6	KD	3262376.	1.	645315.	2617060.
5	ELEV	631.7	KD	3596089.	1.	700689.	2895399.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 16.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
606.00	0.					
607.	87.	89.	2544.	1.	2541.	1.
608.	179.	94.	8126.	1.	8124.	1.
609.	275.	98.	16092.	1.	16090.	1.
610.	376.	103.	26205.	1.	26203.	1.
611.	675.	412.	41372.	1.	38346.	2230.
612.	1200.	682.	66381.	1.	52430.	13951.
613.	1953.	809.	109231.	1.	69271.	39552.
614.	2827.	917.	168054.	1.	88013.	79322.
615.	3783.	983.	245331.	1.	108594.	136213.
616.	4786.	1020.	340562.	1.	130957.	209190.
617.	5817.	1036.	454020.	1.	155062.	298642.
618.	6857.	1043.	583337.	1.	180874.	402174.
619.	7903.	1050.	727065.	1.	208371.	518570.
620.	8955.	1056.	884105.	1.	237525.	646579.
621.	10016.	1063.	1052736.	1.	268322.	784314.
622.	11082.	1070.	1234011.	1.	300749.	933144.
623.	12156.	1076.	1427250.	1.	334795.	1092325.
624.	13235.	1083.	1633032.	1.	370441.	1262543.
625.	14322.	1090.	1849655.	1.	407690.	1441912.
626.	15416.	1097.	2077139.	1.	446541.	1630519.
627.	16515.	1103.	2316233.	1.	486974.	1829209.
628.	17620.	1110.	2566588.	1.	528983.	2037605.
629.	18736.	1117.	2826103.	1.	572613.	2253428.
630.	19855.	1123.	3097284.	1.	617805.	2479444.
631.	20981.	1130.	3378869.	1.	664578.	2714267.
632.	22116.	1137.	3670085.	1.	712963.	2957082.
633.	23254.	1143.	3972421.	1.	762902.	3209509.
634.	24400.	1150.	4284497.	1.	814442.	3470053.
635.	25572.	1175.	4586417.	27.	874824.	3711421.
636.	26754.	1200.	4898497.	390.	937241.	3960766.
637.	27971.	1225.	5221394.	1096.	1001152.	4218827.
638.	29207.	1250.	5554902.	2564.	1066877.	4485200.
639.	30469.	1275.	5899408.	4676.	1134214.	4760195.
640.	31753.	1290.	6273613.	7829.	1203171.	5062120.
641.	33050.	1298.	6673369.	12356.	1273840.	5386913.
642.	34350.	1300.	7085767.	16049.	1345047.	5722604.
643.	35650.	1300.	7511168.	19791.	1417741.	6069176.
644.	36950.	1300.	7949741.	24268.	1492268.	6426646.
645.	38250.	1300.	8401526.	29602.	1568625.	6795061.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.50	1.14	0.12	0.69	0.00	1.23	1.49	1.92	1.45	1.10	15541.05	5970.06	611.23	0.00
2	0.43	1.42	0.11	0.61	0.00	1.49	1.98	1.68	1.29	1.08	18091.80	7627.20	612.70	0.00
3	0.38	1.63	0.11	0.55*	0.00	1.69	3.32	1.57	1.22	1.07	20162.35	9103.07	615.27	0.00
4	0.37	1.65	0.11	0.55*	0.00	1.71	3.60	1.57	1.21	1.07	20522.38	9380.95	615.80	0.00
5	0.36	1.70	0.10	0.53*	0.00	1.76	4.01	1.53	1.19	1.07	21831.70	10302.37	616.78	0.00

***** WSP2 MICROCOMPUTER TEST VERSION *****

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ROAD SECTION 17.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	606.00	0.0	0.00	606.00	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	626.17	2020.0	0.06	626.11	2020.00	2020.0	1355.3	0.0	0.0	0.0	0.0	0.0
2	628.54	3180.0	0.12	628.42	3180.00	3180.0	1604.1	0.0	0.0	0.0	0.0	0.0
3	630.61	6850.0	0.34	630.27	6850.00	5838.8	1803.8	0.0	0.0	1011.2	933.8	662.2
4	630.99	7900.0	0.40	630.59	7900.00	6483.7	1837.8	0.0	0.0	1416.3	1196.0	718.1
5	632.25	10900.0	0.50	631.75	10900.00	7770.4	1959.3	0.0	0.0	3129.6	2265.5	1008.2

MIN ROAD ELEVATION = 628.60 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 629.70 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 17.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	606.0	0.0	0.0							
LOW GRND	611.0	254.9	86.2	0.00	0.28	0.28				61.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	611.0	254.9	86.2	0.00	0.28	0.28				61.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.2	5971.0	2020.0	0.00	0.41	3.18	2020.00	610.0	0.00001	693.7
2	628.5	7628.4	3180.0	0.00	0.43	3.24	3180.00	611.9	0.00002	706.0
3	630.6	9106.3	6850.0	0.00	0.44	3.31	6850.00	613.8	0.00004	721.9
4	631.0	9384.9	7900.0	0.00	0.44	3.34	7900.00	614.2	0.00005	727.2
5	632.3	10308.3	10900.0	0.00	0.44	3.42	10900.00	615.0	0.00008	744.7

SEGMENT TABLE FOR SECTION 17.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	0.	903.	1117.
2020.	VELOCITY FPS	0.47	0.00	0.64	0.24
2	DISCHARGE CFS	3180.	0.	1236.	1944.
3180.	VELOCITY FPS	0.54	0.00	0.76	0.32
3	DISCHARGE CFS	6850.	1.	2460.	4390.
6850.	VELOCITY FPS	0.94	0.10	1.35	0.60
4	DISCHARGE CFS	7900.	2.	2802.	5096.
7900.	VELOCITY FPS	1.05	0.14	1.51	0.68
5	DISCHARGE CFS	10900.	6.	3734.	7161.
10900.	VELOCITY FPS	1.31	0.19	1.89	0.86
1	ELEV 626.2 KD	556270.	1.	249488.	306781.
2	ELEV 628.5 KD	787476.	1.	306766.	480709.
3	ELEV 630.6 KD	1027582.	97.	368986.	658498.
4	ELEV 631.0 KD	1073509.	153.	381236.	692120.
5	ELEV 632.3 KD	1235380.	638.	423250.	811492.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 17.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
606.00	0.					
607.	36.	46.	907.	1.	904.	1.
608.	86.	51.	3555.	1.	3553.	1.
609.	139.	55.	7560.	1.	7558.	1.
610.	195.	58.	12759.	1.	12757.	1.
611.	255.	61.	19096.	1.	19094.	1.
612.	352.	133.	27297.	1.	26911.	385.
613.	526.	202.	38405.	1.	35826.	2380.
614.	755.	255.	53209.	1.	45820.	7214.
615.	1033.	299.	72261.	1.	56860.	15212.
616.	1346.	323.	96523.	1.	68931.	27447.
617.	1678.	341.	125376.	1.	82024.	43204.
618.	2024.	352.	159260.	1.	96129.	63129.
619.	2382.	364.	196720.	1.	111247.	85361.
620.	2759.	386.	236414.	1.	127374.	108951.
621.	3157.	409.	279908.	1.	144512.	135302.
622.	3578.	432.	327988.	1.	162662.	165230.
623.	4017.	454.	380735.	1.	181817.	198917.
624.	4552.	571.	414063.	1.	202013.	212016.
625.	5171.	649.	467419.	1.	223227.	243953.
626.	5849.	693.	541212.	1.	245463.	295521.
627.	6544.	698.	632979.	1.	268745.	363980.
628.	7246.	703.	730923.	1.	293090.	437366.
629.	7950.	708.	836941.	1.	318449.	518491.
630.	8665.	717.	951797.	18.	349230.	602298.
631.	9386.	727.	1073913.	153.	381298.	692290.
632.	10118.	741.	1201311.	487.	414481.	786221.
633.	10870.	756.	1333829.	1130.	448646.	883691.
634.	11628.	772.	1474168.	2383.	484100.	987684.
635.	12414.	787.	1619118.	4020.	520368.	1094322.
636.	13206.	803.	1771937.	6527.	557878.	1207377.
637.	14020.	819.	1930295.	9624.	596290.	1323992.
638.	14845.	833.	2096553.	13764.	635806.	1446668.
639.	15686.	845.	2270465.	18951.	676298.	1574863.
640.	16533.	850.	2449114.	24211.	717317.	1705747.
641.	17383.	850.	2633306.	29420.	759019.	1840170.
642.	18233.	850.	2825574.	35554.	801867.	1980949.
643.	19083.	850.	3026032.	42744.	845861.	2128192.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 17.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	607.0	0.0	0.0							
LOW GRND	612.0	254.9	97.2	0.00	1.27	1.27				61.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	612.0	254.9	97.2	0.00	1.27	1.27				61.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.2	5298.2	2020.0	0.00	1.82	10.59	2020.00	611.0	0.00002	659.3
2	628.6	6936.6	3180.0	0.00	1.91	11.26	3180.00	612.9	0.00002	700.9
3	630.7	8421.8	6850.0	0.00	1.96	11.47	6850.00	614.8	0.00005	713.8
4	631.0	8700.4	7900.0	0.00	1.96	11.52	7900.00	615.2	0.00006	717.1
5	632.3	9628.7	10900.0	0.00	1.96	11.76	10900.00	616.0	0.00008	731.8

SEGMENT TABLE FOR SECTION 17.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	0.	891.	1129.
2020.	VELOCITY FPS	0.50	0.00	0.68	0.28
2	DISCHARGE CFS	3180.	0.	1208.	1972.
3180.	VELOCITY FPS	0.57	0.00	0.79	0.36
3	DISCHARGE CFS	6850.	0.	2342.	4508.
6850.	VELOCITY FPS	0.97	0.12	1.36	0.67
4	DISCHARGE CFS	7900.	1.	2662.	5237.
7900.	VELOCITY FPS	1.07	0.13	1.51	0.76
5	DISCHARGE CFS	10900.	3.	3522.	7375.
10900.	VELOCITY FPS	1.32	0.20	1.87	0.95
1	ELEV 626.2 KD	514059.	1.	227360.	286698.
2	ELEV 628.6 KD	740977.	1.	282262.	458715.
3	ELEV 630.7 KD	988121.	8.	338602.	649512.
4	ELEV 631.0 KD	1038794.	23.	350809.	687962.
5	ELEV 632.3 KD	1211618.	256.	392129.	819233.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 17.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
607.00	0.					
608.	36.	46.	907.	1.	904.	1.
609.	86.	51.	3555.	1.	3553.	1.
610.	139.	55.	7560.	1.	7558.	1.
611.	195.	58.	12759.	1.	12757.	1.
612.	255.	61.	19096.	1.	19094.	1.
613.	352.	133.	27349.	1.	26911.	437.
614.	526.	202.	38747.	1.	35826.	2699.
615.	755.	255.	54194.	1.	45820.	8180.
616.	1033.	299.	74316.	1.	56860.	17248.
617.	1346.	323.	100211.	1.	68931.	31122.
618.	1678.	341.	131173.	1.	82024.	48988.
619.	2024.	352.	167712.	1.	96129.	71582.
620.	2382.	364.	208158.	1.	111247.	96791.
621.	2759.	386.	251008.	1.	127374.	123539.
622.	3157.	409.	298030.	1.	144512.	153418.
623.	3578.	432.	350117.	1.	162662.	187354.
624.	4017.	454.	407369.	1.	181817.	225550.
625.	4552.	571.	442453.	1.	202013.	240403.
626.	5171.	649.	500098.	1.	223227.	276617.
627.	5849.	693.	580793.	1.	245463.	335089.
628.	6544.	698.	681728.	1.	268745.	412714.
629.	7246.	703.	789506.	1.	293090.	495927.
630.	7950.	708.	906364.	1.	318449.	587913.
631.	8665.	717.	1032457.	20.	349230.	682941.
632.	9386.	727.	1166639.	174.	381298.	784982.
633.	10118.	741.	1306656.	552.	414481.	891491.
634.	10870.	756.	1452334.	1282.	448646.	1002012.
635.	11628.	772.	1606732.	2703.	484100.	1119928.
636.	12414.	787.	1766219.	4559.	520388.	1240844.
637.	13206.	803.	1934486.	7401.	557878.	1369038.
638.	14020.	819.	2108900.	10913.	596290.	1501265.
639.	14845.	833.	2292127.	15607.	635806.	1640367.
640.	15686.	845.	2483906.	21489.	676298.	1785727.
641.	16533.	850.	2680926.	27452.	717317.	1934136.
642.	17383.	850.	2884105.	33359.	759019.	2086556.
643.	18233.	850.	3096304.	40314.	801867.	2246184.
644.	19083.	850.	3317654.	48467.	845861.	2413143.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 17.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	609.0	0.0	0.0							
LOW GRND	610.0	30.5	9.8	0.00	1.35	1.35				40.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	610.0	30.5	9.8	0.00	1.35	1.35				40.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.2	6271.9	2020.0	0.00	2.87	18.67	2020.00	613.2	0.00001	650.7
2	628.6	7840.4	3180.0	0.00	2.87	19.19	3180.00	614.0	0.00001	668.8
3	630.7	9285.9	6850.0	0.00	2.87	19.66	6850.00	615.7	0.00004	685.2
4	631.1	9562.7	7900.0	0.00	2.87	19.75	7900.00	616.1	0.00004	688.3
5	632.4	10476.7	10900.0	0.00	2.87	20.21	10900.00	617.1	0.00006	704.4

SEGMENT TABLE FOR SECTION 17.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	1224.	743.	53.
2020.	VELOCITY FPS	0.41	0.26	0.58	0.22
2	DISCHARGE CFS	3180.	2026.	1068.	87.
3180.	VELOCITY FPS	0.50	0.34	0.72	0.28
3	DISCHARGE CFS	6850.	4496.	2160.	193.
6850.	VELOCITY FPS	0.89	0.62	1.29	0.49
4	DISCHARGE CFS	7900.	5210.	2465.	225.
7900.	VELOCITY FPS	0.99	0.70	1.45	0.55
5	DISCHARGE CFS	10900.	7274.	3312.	315.
10900.	VELOCITY FPS	1.25	0.89	1.82	0.69

1	ELEV	626.2	KD	635025.	384641.	233647.	16737.
2	ELEV	628.6	KD	885853.	563951.	297800.	24102.
3	ELEV	630.7	KD	1142707.	749781.	360712.	32214.
4	ELEV	631.1	KD	1193916.	786940.	373069.	33907.
5	ELEV	632.4	KD	1364134.	910115.	414633.	39387.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 17.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
609.00	0.					
610.	30.	40.	757.	1.	755.	1.
611.	76.	52.	2959.	1.	2948.	10.
612.	135.	68.	6599.	2.	6533.	63.
613.	224.	112.	12179.	222.	11730.	186.
614.	360.	155.	20402.	1513.	18397.	400.
615.	526.	178.	31926.	4674.	26525.	727.
616.	713.	196.	46625.	9288.	36154.	1183.
617.	1063.	353.	66379.	15454.	49141.	1784.
618.	1419.	360.	96284.	30063.	63674.	2547.
619.	1839.	481.	124850.	41687.	79676.	3487.
620.	2381.	603.	162813.	61114.	97081.	4618.
621.	2989.	611.	218798.	96649.	115799.	5954.
622.	3604.	618.	283038.	139306.	135842.	7509.
623.	4227.	626.	355114.	188373.	157160.	9296.
624.	4857.	634.	434655.	243434.	179713.	11328.
625.	5494.	641.	521311.	304135.	203461.	13617.
626.	6139.	649.	614638.	369997.	228359.	16175.
627.	6793.	657.	714394.	440850.	254374.	19013.
628.	7453.	664.	821138.	517360.	281534.	22145.
629.	8120.	672.	934615.	599228.	309806.	25582.
630.	8797.	680.	1053482.	684986.	339082.	29330.
631.	9482.	687.	1178874.	775938.	369429.	33405.
632.	10171.	695.	1311163.	872479.	400862.	37821.
633.	10883.	717.	1436216.	961436.	433230.	41518.
634.	11609.	739.	1567645.	1055306.	466647.	45662.
635.	12357.	760.	1705700.	1154177.	501051.	50454.
636.	13132.	782.	1850593.	1258178.	536396.	55970.
637.	13922.	804.	2002154.	1367331.	572737.	62057.
638.	14741.	826.	2160789.	1481807.	609985.	68932.
639.	15576.	847.	2326503.	1601609.	648198.	76626.
640.	16434.	868.	2499696.	1726873.	687323.	85428.
641.	17313.	887.	2680962.	1857695.	727355.	95774.
642.	18205.	904.	2870093.	1994084.	768312.	107633.
643.	19117.	913.	3080341.	2150330.	810125.	119698.
644.	20035.	920.	3302930.	2317581.	852871.	132478.
645.	20955.	920.	3530840.	2489410.	896177.	143865.
646.	21875.	920.	3767578.	2668746.	940406.	155878.
647.	22795.	920.	4013240.	2855696.	985551.	168533.
648.	23715.	920.	4267910.	3050374.	1031605.	181846.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 17.95 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	609.3	0.0	0.0							
LOW GRND	610.3	30.5	10.1	0.00	0.37	0.37				40.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	610.3	30.5	10.1	0.00	0.37	0.37				40.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.2	6081.2	2020.0	0.00	0.78	5.95	2020.00	613.5	0.00001	648.4
2	628.6	7644.1	3180.0	0.00	0.78	6.12	3180.00	614.3	0.00002	666.6
3	630.7	9089.8	6850.0	0.00	0.78	6.27	6850.00	616.0	0.00004	683.0
4	631.1	9368.9	7900.0	0.00	0.78	6.30	7900.00	616.4	0.00005	686.1
5	632.5	10282.1	10900.0	0.00	0.78	6.41	10900.00	617.4	0.00008	698.4

SEGMENT TABLE FOR SECTION 17.95

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	1177.	791.	52.
2020.	VELOCITY FPS	0.44	0.26	0.63	0.22
2	DISCHARGE CFS	3180.	1959.	1137.	84.
3180.	VELOCITY FPS	0.54	0.33	0.78	0.28
3	DISCHARGE CFS	6850.	4362.	2301.	187.
6850.	VELOCITY FPS	0.95	0.62	1.40	0.49
4	DISCHARGE CFS	7900.	5058.	2624.	218.
7900.	VELOCITY FPS	1.06	0.69	1.56	0.55
5	DISCHARGE CFS	10900.	7078.	3516.	307.
10900.	VELOCITY FPS	1.33	0.88	1.96	0.69
1	ELEV 626.2 KD	576032.	335278.	226066.	14688.
2	ELEV 628.6 KD	808579.	497789.	289500.	21291.
3	ELEV 630.7 KD	1048216.	667521.	352073.	28622.
4	ELEV 631.1 KD	1095884.	701329.	364397.	30158.
5	ELEV 632.5 KD	1258066.	816823.	405856.	35387.

Flow area

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 17.95

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
609.30	0.					
610.	19.	34.	395.	1.	393.	1.
611.	62.	48.	2154.	1.	2150.	3.
612.	116.	61.	5333.	1.	5294.	37.
613.	192.	97.	10237.	68.	10010.	129.
614.	315.	143.	17514.	880.	16245.	299.
615.	475.	172.	27787.	3192.	23932.	567.
616.	656.	190.	41197.	7111.	33106.	950.
617.	958.	306.	58825.	12314.	45009.	1462.
618.	1312.	358.	84373.	22882.	59099.	2119.
619.	1713.	445.	112601.	34963.	74676.	2935.
620.	2219.	567.	146139.	50418.	91673.	3924.
621.	2807.	609.	193694.	77970.	110009.	5097.
622.	3419.	616.	252457.	115919.	129687.	6470.
623.	4039.	624.	318633.	159735.	150648.	8052.
624.	4666.	631.	391841.	209077.	172849.	9857.
625.	5301.	639.	471456.	263267.	196229.	11895.
626.	5946.	647.	557104.	321992.	220747.	14176.
627.	6596.	654.	649564.	386262.	246449.	16714.
628.	7253.	662.	748514.	455666.	273297.	19520.
629.	7920.	670.	852862.	528985.	301193.	22600.
630.	8594.	677.	963255.	607016.	330172.	25969.
631.	9275.	685.	1079762.	689835.	360228.	29635.
632.	9964.	693.	1201881.	776894.	391310.	33609.
633.	10669.	710.	1321872.	861207.	423400.	37232.
634.	11385.	732.	1443728.	946359.	456541.	40819.
635.	12132.	754.	1571933.	1036127.	490615.	45157.
636.	12897.	776.	1706301.	1130564.	525692.	50005.
637.	13679.	797.	1846923.	1229734.	561749.	55429.
638.	14495.	819.	1994177.	1333809.	598702.	61595.
639.	15318.	841.	2147719.	1442719.	636659.	68321.
640.	16177.	862.	2308543.	1556720.	675481.	76251.
641.	17045.	882.	2476261.	1675733.	715261.	85188.
642.	17937.	899.	2651834.	1799951.	755922.	95840.
643.	18842.	911.	2841957.	1937353.	797489.	106971.
644.	19760.	918.	3047957.	2089411.	839947.	118498.
645.	20679.	920.	3260029.	2246563.	883089.	129409.
646.	21599.	920.	3479316.	2409792.	927042.	140308.
647.	22519.	920.	3706862.	2580012.	971912.	151795.
648.	23439.	920.	3942740.	2757323.	1017694.	163884.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.33	1.84	0.06	0.60*	0.00	1.87	1.48	1.82	1.27	1.77	6017.41	8300.33	614.44	0.00
2	0.30	1.97	0.05	0.57*	0.00*	2.00	1.89	1.63	1.19	1.66	7578.45	10588.38	615.60	0.00
3	0.28	2.08	0.05	0.55*	0.00*	2.10	3.46	1.52	1.14	1.60	9024.49	12954.77	618.37	0.00
4	0.27	2.10	0.04	0.54*	0.00*	2.12	3.87	1.50	1.14	1.59	9303.43	13461.87	619.02	0.00
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 18.0 EAST

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	609.40	0.0	0.00	609.40	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	626.31	2020.0	0.10	626.21	2020.00	2020.0	1368.7	0.0	0.0	0.0	0.0	0.0
2	628.73	3180.0	0.14	628.59	3180.00	3180.0	1683.9	0.0	0.0	0.0	0.0	0.0
3	631.20	6850.0	0.46	630.74	6850.00	6850.0	1982.6	0.0	0.0	0.0	0.0	0.0
4	631.72	7900.0	0.58	631.14	7900.00	7900.0	2039.5	0.0	0.0	0.0	0.0	0.0
5	633.10	10900.0	0.64	632.46	10900.00	10900.0	2147.0	0.0	0.0	0.0	0.0	0.0

MIN ROAD ELEVATION = 634.60 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 632.40 FT OPENING NO.= 1

***** WSPC MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 18.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	609.4	0.0	0.0							
LOW GRND	613.9	236.2	57.5	0.00	0.30	0.30				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	613.9	236.2	57.5	0.00	0.30	0.30				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.3	8301.4	2020.0	0.00	0.30	4.32	2020.00	613.3	0.00001	941.1
2	628.7	10589.6	3180.0	0.00	0.30	4.37	3180.00	614.5	0.00001	952.7
3	631.2	12957.9	6850.0	0.00	0.30	4.43	6850.00	617.4	0.00003	964.6
4	631.7	13465.5	7900.0	0.00	0.30	4.44	7900.00	618.0	0.00004	967.1
5	633.1	14809.1	10900.0	0.00	0.30	4.47	10900.00	618.9	0.00005	973.7

SEGMENT TABLE FOR SECTION 18.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	17.	555.	1448.
2020.	VELOCITY FPS	0.33	0.15	0.53	0.20
2	DISCHARGE CFS	3180.	29.	761.	2390.
3180.	VELOCITY FPS	0.38	0.18	0.63	0.26
3	DISCHARGE CFS	6850.	68.	1478.	5304.
6850.	VELOCITY FPS	0.65	0.31	1.09	0.47
4	DISCHARGE CFS	7900.	80.	1674.	6146.
7900.	VELOCITY FPS	0.72	0.35	1.20	0.52
5	DISCHARGE CFS	10900.	117.	2210.	8573.
10900.	VELOCITY FPS	0.89	0.43	1.49	0.66

Flow area

1	ELEV	626.3	KD	607772.	4958.	167389.	435425.
2	ELEV	628.7	KD	882592.	7970.	211490.	663132.
3	ELEV	631.2	KD	1206194.	12016.	260709.	933469.
4	ELEV	631.7	KD	1281428.	13021.	271740.	996667.
5	ELEV	633.1	KD	1486045.	15893.	301577.	1168576.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 18.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
609.40	0.					
610.	25.	43.	444.	1.	442.	1.
611.	71.	49.	2323.	1.	2321.	1.
612.	123.	54.	5354.	1.	5352.	1.
613.	180.	60.	9462.	1.	9460.	1.
614.	243.	66.	14734.	1.	14731.	1.
615.	312.	72.	21911.	9.	21870.	27.
616.	387.	79.	30321.	43.	30106.	164.
617.	471.	88.	39961.	122.	39361.	468.
618.	643.	177.	51829.	258.	49582.	1292.
619.	1547.	906.	76882.	462.	60724.	15133.
620.	2455.	911.	117694.	745.	72751.	43829.
621.	3369.	916.	170324.	1117.	85632.	83077.
622.	4287.	920.	232967.	1586.	99334.	131413.
623.	5210.	925.	305412.	2164.	113843.	188911.
624.	6138.	930.	387038.	2859.	129135.	254717.
625.	7070.	935.	477207.	3679.	145190.	328128.
626.	8007.	940.	575772.	4633.	161992.	409055.
627.	8950.	944.	681162.	5723.	179508.	495710.
628.	9897.	949.	794820.	6965.	197746.	589948.
629.	10848.	954.	916319.	8366.	216689.	691228.
630.	11805.	959.	1044040.	9924.	236308.	797712.
631.	12766.	964.	1178712.	11651.	256599.	910319.
632.	13731.	968.	1321355.	13565.	277570.	1030193.
633.	14703.	973.	1469410.	15652.	299177.	1154478.
634.	15679.	978.	1624695.	17936.	321436.	1285242.
635.	16658.	983.	1786872.	20420.	344335.	1422092.
636.	17654.	1012.	1928161.	23100.	367847.	1537189.
637.	18677.	1046.	2070881.	26024.	391986.	1652854.
638.	19759.	1085.	2217499.	29235.	416729.	1771508.
639.	20852.	1105.	2386362.	32465.	442036.	1911363.
640.	21957.	1105.	2580389.	35661.	467895.	2075440.
641.	23062.	1105.	2783185.	39053.	494361.	2247639.
642.	24167.	1105.	2994848.	42646.	521430.	2428088.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 18.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	615.5	0.0	0.0							
LOW GRND	620.0	236.2	153.0	0.00	5.03	5.03				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	620.0	236.2	153.0	0.00	5.03	5.03				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	626.8	3119.1	2020.0	0.00	5.03	52.48	2020.00	619.4	0.00015	914.4
2	629.0	5151.6	3180.0	0.00	5.03	53.09	3180.00	620.6	0.00009	925.0
3	631.6	7582.7	6850.0	0.00	5.03	53.80	6850.00	623.5	0.00013	937.5
4	632.2	8108.9	7900.0	0.00	5.03	53.96	7900.00	624.1	0.00015	940.2
5	633.7	9492.5	10900.0	0.00	5.03	54.36	10900.00	625.0	0.00017	947.2

SEGMENT TABLE FOR SECTION 18.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	14.	983.	1023.
2020.	VELOCITY FPS	1.08	0.42	1.45	0.43
2	DISCHARGE CFS	3180.	24.	1077.	2079.
3180.	VELOCITY FPS	0.87	0.40	1.31	0.49
3	DISCHARGE CFS	6850.	57.	1783.	5011.
6850.	VELOCITY FPS	1.14	0.57	1.79	0.77
4	DISCHARGE CFS	7900.	66.	1975.	5859.
7900.	VELOCITY FPS	1.20	0.61	1.92	0.84
5	DISCHARGE CFS	10900.	97.	2475.	8328.
10900.	VELOCITY FPS	1.37	0.71	2.20	1.01
1	ELEV 626.8 KD	164655.	1165.	82019.	81471.
2	ELEV 629.0 KD	330212.	2466.	112898.	214848.
3	ELEV 631.6 KD	589777.	4855.	154281.	430641.
4	ELEV 632.2 KD	655481.	5512.	163862.	486106.
5	ELEV 633.7 KD	835958.	7458.	189909.	638592.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 18.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
615.50	0.					
616.	21.	43.	328.	1.	326.	1.
617.	66.	48.	2082.	1.	2080.	1.
618.	117.	54.	5001.	1.	4999.	1.
619.	174.	59.	9005.	1.	9003.	1.
620.	236.	65.	14083.	1.	14081.	1.
621.	305.	71.	21139.	8.	21098.	22.
622.	379.	78.	29459.	44.	29244.	170.
623.	462.	87.	39026.	131.	38398.	497.
624.	553.	96.	49944.	281.	48523.	1139.
625.	1456.	906.	75728.	510.	59575.	15644.
626.	2364.	910.	119937.	829.	71515.	47593.
627.	3277.	915.	177245.	1248.	84302.	90738.
628.	4195.	920.	246726.	1781.	97925.	146233.
629.	5118.	925.	327591.	2440.	112356.	212265.
630.	6045.	930.	419044.	3233.	127573.	287928.
631.	6977.	934.	520369.	4172.	143554.	372487.
632.	7913.	939.	630708.	5261.	160276.	464994.
633.	8856.	944.	749609.	6511.	177722.	565132.
634.	9802.	949.	877991.	7937.	195892.	674014.
635.	10752.	954.	1015359.	9547.	214768.	791043.
636.	11709.	958.	1159327.	11334.	234314.	913558.
637.	12670.	963.	1311851.	13322.	254541.	1043849.
638.	13634.	968.	1473543.	15525.	275448.	1182570.
639.	14606.	973.	1640922.	17925.	296986.	1325896.
640.	15581.	977.	1817110.	20556.	319183.	1477296.
641.	16560.	982.	2000734.	23415.	342016.	1635258.
642.	17554.	1009.	2164042.	26505.	365467.	1772041.
643.	18569.	1042.	2325496.	29867.	389547.	1906068.
644.	19650.	1081.	2491234.	33567.	414226.	2043404.
645.	20741.	1105.	2678521.	37346.	439485.	2201280.
646.	21846.	1105.	2898560.	41035.	465282.	2390898.
647.	22951.	1105.	3128697.	44951.	491688.	2589937.
648.	24056.	1105.	3369048.	49101.	518697.	2798542.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 18.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	619.3	0.0	0.0							
LOW GRND	622.0	97.4	146.4	0.00	2.91	2.91				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	622.0	97.4	146.4	0.00	2.91	2.91				65.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	628.1	1343.9	2020.0	0.00	2.91	13.12	2020.00	623.6	0.00067	317.6
2	630.1	1988.1	3180.0	0.00	2.91	13.66	3180.00	624.7	0.00056	330.6
3	633.1	3012.5	6850.0	0.00	2.91	14.65	6850.00	626.2	0.00078	354.5
4	633.7	3244.5	7900.0	0.00	2.91	14.93	7900.00	626.4	0.00084	361.4
5	635.4	3863.7	10900.0	0.00	2.91	15.62	10900.00	627.1	0.00097	377.9

SEGMENT TABLE FOR SECTION 18.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	53.	1253.	714.
2020.	VELOCITY FPS	2.09	0.82	2.55	0.91
2	DISCHARGE CFS	3180.	103.	1689.	1388.
3180.	VELOCITY FPS	2.12	0.90	2.72	1.11
3	DISCHARGE CFS	6850.	271.	3153.	3426.
6850.	VELOCITY FPS	2.91	1.25	3.86	1.73
4	DISCHARGE CFS	7900.	322.	3556.	4021.
7900.	VELOCITY FPS	3.10	1.31	4.14	1.88
5	DISCHARGE CFS	10900.	503.	4657.	5741.
10900.	VELOCITY FPS	3.56	1.50	4.81	2.24
1	ELEV 628.1 KD	77884.	2034.	48481.	27369.
2	ELEV 630.1 KD	134416.	4333.	71527.	58557.
3	ELEV 633.1 KD	244562.	9651.	112733.	122178.
4	ELEV 633.7 KD	272369.	11103.	122669.	138597.
5	ELEV 635.4 KD	350011.	16119.	149683.	184209.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 18.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
619.30	0.					
620.	9.	23.	110.	1.	108.	1.
621.	43.	44.	1062.	1.	1060.	1.
622.	97.	65.	3262.	1.	3260.	1.
623.	175.	91.	7771.	17.	7645.	110.
624.	284.	127.	14162.	103.	13374.	663.
625.	451.	210.	22850.	307.	20347.	2084.
626.	705.	291.	35511.	667.	28455.	6242.
627.	1008.	311.	53646.	1211.	37598.	14614.
628.	1322.	317.	76235.	1971.	47739.	26399.
629.	1642.	324.	102634.	2976.	58823.	40754.
630.	1969.	330.	132622.	4250.	70813.	57501.
631.	2303.	337.	165958.	5817.	83666.	76393.
632.	2644.	345.	202567.	7575.	97373.	97556.
633.	2993.	354.	242317.	9533.	111903.	120837.
634.	3351.	364.	285315.	11897.	127232.	146157.
635.	3719.	372.	331893.	15102.	143340.	173451.
636.	4098.	387.	380475.	17852.	160181.	202407.
637.	4498.	410.	431802.	20595.	177778.	233398.
638.	4919.	440.	486280.	23790.	196114.	266336.
639.	5374.	470.	545510.	29323.	215151.	300992.
640.	5862.	499.	609249.	36821.	234881.	337388.
641.	6377.	531.	677124.	46015.	255306.	375631.
642.	6918.	566.	749021.	56841.	276411.	415661.
643.	7532.	632.	823403.	67774.	298167.	457314.
644.	8179.	692.	904145.	81822.	320596.	501256.
645.	8883.	701.	1001768.	108630.	343656.	548579.
646.	9587.	705.	1102855.	135259.	367275.	596295.
647.	10292.	705.	1207894.	161331.	391472.	644755.
648.	10997.	705.	1318674.	191228.	416320.	695224.
649.	11702.	705.	1435295.	225351.	441813.	747712.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.96	0.02	0.00	0.00	0.00	0.02	3.32	1.44	1.42	1.91	1384.93	685.66	622.99	0.00
2	0.71	0.45	0.00	0.00	0.00	0.45	4.19	2.14	1.81	1.75	2024.22	1579.34	623.98	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 19.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	619.30	0.0	0.00	619.30	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	628.22	2020.0	0.02	628.20	2020.00	2020.0	608.4	0.0	0.0	0.0	0.0	0.0
2	630.33	3180.0	0.16	630.17	3180.00	3180.0	758.1	0.0	0.0	0.0	0.0	0.0
3	633.75	6850.0	0.54	633.21	6850.00	4436.9	958.8	0.0	0.0	2413.1	761.4	589.8
4	634.33	7900.0	0.46	633.87	7900.00	4084.5	958.8	0.0	0.0	3815.5	1162.0	726.6
5	635.95	10900.0	0.38	635.57	10900.00	3629.0	958.8	0.0	0.0	7271.0	2450.2	857.8

MIN ROAD ELEVATION = 632.00 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 632.80 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 19.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	619.3	0.0	0.0							
LOW GRND	626.8	401.5	1054.0	0.00	0.64	0.64				92.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	626.8	401.5	1054.0	0.00	0.64	0.64				92.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	628.5	769.5	2020.0	0.00	0.67	2.25	2020.00	623.8	0.00222	326.5
2	630.5	1658.9	3180.0	0.00	0.72	3.56	3180.00	625.2	0.00140	516.4
3	633.9	3603.8	6850.0	0.00	0.72	4.56	6850.00	628.5	0.00097	662.7
4	634.4	3992.4	7900.0	0.00	0.72	4.83	7900.00	628.9	0.00099	701.7
5	636.1	5191.7	10900.0	0.00	0.72	5.27	10900.00	629.5	0.00098	765.3

SEGMENT TABLE FOR SECTION 19.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	0.	1892.	128.
2020.	VELOCITY FPS	3.29	0.00	3.37	0.62
2	DISCHARGE CFS	3180.	0.	2412.	768.
3180.	VELOCITY FPS	2.80	0.00	3.16	0.86
3	DISCHARGE CFS	6850.	94.	3759.	2997.
6850.	VELOCITY FPS	2.66	0.52	3.37	1.30
4	DISCHARGE CFS	7900.	147.	4172.	3581.
7900.	VELOCITY FPS	2.75	0.57	3.54	1.40
5	DISCHARGE CFS	10900.	477.	5170.	5253.
10900.	VELOCITY FPS	2.89	0.80	3.83	1.62
1	ELEV 628.5 KD	42391.	1.	40312.	2078.
2	ELEV 630.5 KD	84490.	1.	64673.	19816.
3	ELEV 633.9 KD	219438.	2611.	121193.	95634.
4	ELEV 634.4 KD	250881.	4583.	132595.	113702.
5	ELEV 636.1 KD	348740.	14773.	165948.	168019.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 19.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
619.30	0.					
620.	21.	32.	364.	1.	362.	1.
621.	57.	39.	1656.	1.	1654.	1.
622.	99.	45.	3748.	1.	3746.	1.
623.	147.	51.	6651.	1.	6649.	1.
624.	201.	57.	10433.	1.	10431.	1.
625.	261.	64.	14838.	1.	14836.	1.
626.	334.	80.	19367.	1.	19365.	1.
627.	423.	120.	25790.	1.	25781.	8.
628.	613.	260.	36321.	1.	35374.	945.
629.	943.	400.	51019.	1.	46257.	4761.
630.	1411.	513.	71805.	1.	58404.	13401.
631.	1931.	526.	100794.	3.	72020.	28490.
632.	2471.	562.	137259.	225.	88168.	48867.
633.	3057.	609.	179207.	1011.	105468.	72430.
634.	3701.	673.	227505.	3021.	124027.	100010.
635.	4405.	724.	282753.	7120.	143772.	131099.
636.	5148.	763.	345417.	14360.	164750.	166044.
637.	5926.	799.	414385.	23477.	186790.	203797.
638.	6756.	849.	489364.	34557.	209889.	244475.
639.	7628.	900.	571651.	48630.	234113.	288513.
640.	8543.	947.	661850.	66720.	259422.	335709.
641.	9569.	1099.	749907.	79250.	285611.	384912.
642.	10743.	1293.	847161.	96290.	312911.	437573.
643.	12138.	1550.	955736.	121316.	341197.	492973.
644.	13863.	1807.	1083790.	160932.	370391.	550737.
645.	15712.	2014.	1231495.	217420.	400620.	611639.
646.	17727.	2017.	1417525.	307387.	431722.	674789.
647.	19746.	2019.	1620145.	411268.	463754.	741725.
648.	21766.	2020.	1840670.	529684.	496751.	812536.
649.	23786.	2020.	2057701.	633689.	530125.	882336.
650.	25806.	2020.	2285215.	741659.	564338.	954195.
651.	27826.	2020.	2529367.	863660.	599554.	1029319.
652.	29846.	2020.	2790792.	1000984.	635772.	1107747.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 19.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	624.5	0.0	0.0							
LOW GRND	632.0	401.5	756.5	0.00	10.53	10.53				92.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	632.0	401.5	756.5	0.00	10.53	10.53				92.5
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	634.5	1072.1	2020.0	0.00	11.41	36.63	2020.00	629.0	0.00124	431.2
2	635.9	1751.5	3180.0	0.00	11.91	43.97	3180.00	630.4	0.00115	517.6
3	638.7	3372.2	6850.0	0.00	11.96	54.24	6850.00	633.7	0.00100	638.6
4	639.3	3774.9	7900.0	0.00	11.96	57.80	7900.00	634.1	0.00100	680.5
5	640.9	4923.7	10900.0	0.00	11.96	63.91	10900.00	634.7	0.00095	752.4

SEGMENT TABLE FOR SECTION 19.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	0.	1731.	289.
2020.	VELOCITY FPS	2.54	0.00	2.70	0.67
2	DISCHARGE CFS	3180.	0.	2268.	912.
3180.	VELOCITY FPS	2.51	0.00	2.90	0.94
3	DISCHARGE CFS	6850.	77.	3613.	3160.
6850.	VELOCITY FPS	2.64	0.57	3.35	1.46
4	DISCHARGE CFS	7900.	135.	3971.	3794.
7900.	VELOCITY FPS	2.71	0.63	3.47	1.57
5	DISCHARGE CFS	10900.	443.	4889.	5569.
10900.	VELOCITY FPS	2.82	0.86	3.73	1.80
1	ELEV 634.5 KD	56851.	1.	49442.	7408.
2	ELEV 635.9 KD	93534.	1.	67103.	26430.
3	ELEV 638.7 KD	216117.	2125.	114610.	99383.
4	ELEV 639.3 KD	249812.	3900.	126186.	119725.
5	ELEV 640.9 KD	352726.	14018.	158503.	180206.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 19.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
624.50	0.					
625.	15.	31.	207.	1.	205.	1.
626.	49.	37.	1334.	1.	1331.	1.
627.	90.	44.	3266.	1.	3263.	1.
628.	137.	50.	6001.	1.	5999.	1.
629.	190.	56.	9610.	1.	9607.	1.
630.	248.	62.	13960.	1.	13958.	1.
631.	317.	77.	18309.	1.	18307.	1.
632.	401.	92.	24022.	1.	24020.	1.
633.	575.	232.	34141.	1.	33305.	441.
634.	877.	372.	48411.	1.	43941.	4045.
635.	1317.	491.	69027.	1.	55843.	12715.
636.	1823.	519.	98472.	1.	69022.	29449.
637.	2363.	555.	136304.	109.	84782.	50968.
638.	2940.	599.	180928.	875.	101864.	77695.
639.	3570.	659.	232592.	2871.	120206.	108988.
640.	4259.	716.	291864.	7062.	139743.	144385.
641.	4993.	756.	359794.	15016.	160520.	184258.
642.	5770.	792.	434231.	24693.	182263.	226700.
643.	6587.	838.	516212.	37242.	205177.	273315.
644.	7445.	890.	605998.	52752.	229212.	323776.
645.	8360.	938.	704465.	72604.	254252.	377312.
646.	9364.	1068.	802984.	88710.	280270.	433853.
647.	10463.	1241.	908351.	106322.	307400.	494381.
648.	11859.	1498.	1027688.	134225.	335441.	557551.
649.	13501.	1756.	1165991.	175714.	364473.	624012.
650.	15309.	2013.	1323112.	234510.	394536.	694066.
651.	17324.	2016.	1529149.	332432.	425411.	766306.
652.	19342.	2019.	1755306.	452178.	457285.	842930.
653.	21362.	2020.	2000778.	583427.	490063.	924004.
654.	23381.	2020.	2249044.	710515.	523404.	1005393.
655.	25401.	2020.	2502788.	832449.	557414.	1087841.
656.	27421.	2020.	2775572.	970338.	592430.	1174062.
657.	29441.	2020.	3068150.	1125661.	628448.	1264098.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 19.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	627.4	0.0	0.0							
LOW GRND	634.0	345.6	518.8	0.00	6.29	6.29				100.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	634.0	345.6	518.8	0.00	6.29	6.29				100.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	637.2	1345.6	2020.0	0.00	6.91	37.72	2020.00	632.1	0.00103	657.2
2	638.4	2163.4	3180.0	0.00	6.91	40.43	3180.00	633.6	0.00096	704.4
3	641.0	4110.7	6850.0	0.00	6.91	44.23	6850.00	636.0	0.00086	770.7
4	641.7	4612.6	7900.0	0.00	6.91	44.95	7900.00	636.4	0.00083	783.2
5	643.2	5845.4	10900.0	0.00	6.91	49.21	10900.00	637.2	0.00084	857.4

SEGMENT TABLE FOR SECTION 19.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	299.	1670.	52.
2020.	VELOCITY FPS	2.25	0.53	2.43	0.53
2	DISCHARGE CFS	3180.	886.	2150.	144.
3180.	VELOCITY FPS	2.25	0.79	2.63	0.65
3	DISCHARGE CFS	6850.	2857.	3398.	595.
6850.	VELOCITY FPS	2.33	1.20	3.07	0.96
4	DISCHARGE CFS	7900.	3434.	3718.	748.
7900.	VELOCITY FPS	2.35	1.27	3.15	1.01
5	DISCHARGE CFS	10900.	5120.	4645.	1135.
10900.	VELOCITY FPS	2.51	1.49	3.45	1.06
1	ELEV 637.2 KD	62409.	8359.	52545.	1505.
2	ELEV 638.4 KD	102028.	27343.	70337.	4348.
3	ELEV 641.0 KD	233028.	96654.	116470.	19903.
4	ELEV 641.7 KD	274513.	119216.	129323.	25975.
5	ELEV 643.2 KD	376186.	176357.	160874.	38955.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 19.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
627.40	0.					
628.	19.	33.	298.	1.	296.	1.
629.	54.	37.	1556.	1.	1554.	1.
630.	94.	42.	3582.	1.	3580.	1.
631.	139.	48.	6275.	1.	6273.	1.
632.	191.	57.	9553.	1.	9551.	1.
633.	257.	77.	12836.	1.	12834.	1.
634.	346.	100.	17814.	1.	17812.	1.
635.	457.	120.	26611.	1.	26528.	51.
636.	586.	140.	37311.	1.	36886.	423.
637.	1212.	649.	57664.	6581.	49848.	1235.
638.	1883.	692.	88457.	20922.	64324.	3211.
639.	2594.	723.	127979.	40469.	80172.	6779.
640.	3333.	750.	175928.	65767.	97441.	12203.
641.	4094.	770.	232146.	95970.	116062.	19721.
642.	4877.	798.	295274.	130661.	135978.	28457.
643.	5694.	847.	363942.	169508.	157138.	37184.
644.	6572.	906.	440057.	212076.	179476.	48377.
645.	7509.	957.	525201.	258229.	202952.	63706.
646.	8489.	1006.	619320.	308492.	227629.	82945.
647.	9509.	1054.	722129.	362594.	253465.	106070.
648.	10597.	1103.	832880.	419305.	280275.	133026.
649.	11729.	1151.	952647.	479695.	308195.	164358.
650.	12891.	1200.	1081925.	544076.	337263.	200586.
651.	14251.	1400.	1154187.	544085.	367218.	241188.
652.	15703.	1540.	1257875.	568742.	398279.	290296.
653.	17293.	1590.	1415408.	633447.	430340.	351265.
654.	18891.	1600.	1589836.	714104.	462837.	409170.
655.	20491.	1600.	1779313.	804680.	496250.	470380.
656.	22091.	1600.	1983406.	902898.	530758.	538069.
657.	23691.	1600.	2202676.	1009101.	566355.	612662.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 19.95 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	631.9	0.0	0.0							
LOW GRND	638.5	345.6	909.7	0.00	4.02	4.02				100.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	638.5	345.6	909.7	0.00	4.02	4.02				100.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	640.8	767.4	2020.0	0.00	4.42	11.22	2020.00	636.6	0.00226	287.5
2	641.9	1509.1	3180.0	0.00	4.42	26.06	3180.00	638.1	0.00209	667.9
3	644.3	3152.0	6850.0	0.00	4.42	29.03	6850.00	640.5	0.00180	744.0
4	644.8	3526.2	7900.0	0.00	4.42	29.54	7900.00	640.9	0.00178	757.0
5	646.1	4575.9	10900.0	0.00	4.42	30.48	10900.00	641.7	0.00166	781.1

SEGMENT TABLE FOR SECTION 19.95

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	87.	1903.	30.
2020.	VELOCITY FPS	3.20	0.64	3.24	0.67
2	DISCHARGE CFS	3180.	563.	2525.	92.
3180.	VELOCITY FPS	3.24	0.83	3.54	0.77
3	DISCHARGE CFS	6850.	2474.	3921.	455.
6850.	VELOCITY FPS	3.23	1.40	4.05	1.11
4	DISCHARGE CFS	7900.	3024.	4296.	579.
7900.	VELOCITY FPS	3.26	1.50	4.20	1.18
5	DISCHARGE CFS	10900.	4653.	5233.	1014.
10900.	VELOCITY FPS	3.32	1.74	4.46	1.39
1	ELEV 640.8 KD	40974.	14.	40393.	567.
2	ELEV 641.9 KD	68623.	10797.	55977.	1850.
3	ELEV 644.3 KD	160783.	57303.	93114.	10366.
4	ELEV 644.8 KD	187032.	71280.	102171.	13581.
5	ELEV 646.1 KD	267377.	114102.	128414.	24862.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 19.95

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
631.90	0.					
632.	3.	15.	20.	1.	19.	1.
633.	36.	35.	825.	1.	822.	1.
634.	73.	40.	2481.	1.	2479.	1.
635.	116.	45.	4840.	1.	4838.	1.
636.	164.	52.	7918.	1.	7916.	1.
637.	223.	66.	11180.	1.	11178.	1.
638.	300.	89.	15170.	1.	15168.	1.
639.	400.	110.	21963.	1.	21935.	7.
640.	520.	130.	31712.	1.	31504.	178.
641.	899.	394.	46556.	91.	43058.	712.
642.	1548.	670.	71348.	11540.	56804.	1954.
643.	2238.	708.	105787.	28421.	71990.	4562.
644.	2960.	737.	149045.	51041.	88642.	8982.
645.	3709.	762.	200480.	78407.	106653.	15312.
646.	4480.	778.	259457.	109730.	125915.	23681.
647.	5278.	821.	323093.	144975.	146403.	31556.
648.	6133.	877.	393692.	184138.	168109.	41204.
649.	7033.	933.	472632.	227612.	191078.	53743.
650.	7986.	981.	560626.	274632.	215199.	70705.
651.	8999.	1030.	656341.	324593.	240369.	91083.
652.	10053.	1079.	760682.	378369.	266700.	115325.
653.	11149.	1127.	873702.	435721.	294150.	143738.
654.	12310.	1176.	994817.	495644.	322566.	176231.
655.	13571.	1300.	1094512.	527490.	352084.	213457.
656.	14931.	1500.	1166238.	527490.	382665.	255663.
657.	16498.	1565.	1307020.	582228.	414159.	309883.
658.	18091.	1600.	1468291.	651093.	446541.	369250.
659.	19691.	1600.	1646201.	735325.	479406.	425602.
660.	21291.	1600.	1838035.	826801.	513368.	488035.
661.	22891.	1600.	2044328.	925852.	548420.	556955.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFF	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.88	0.11	0.41*	0.97	0.02	0.53	2.09	2.06	1.94	2.27	2701.77	1403.65	633.39	0.00
2	0.79	0.28	0.40*	0.91	0.04	0.69	2.92	2.64	2.29	2.11	3562.88	2198.30	634.44	0.00
3	0.54	0.98	0.39	0.70	0.00	1.25	5.11	2.81	1.98	1.90	5369.77	5233.27	636.92	0.00
4	0.49	1.15	0.38	0.65	-0.02	1.37	5.67	2.64	1.81	1.88	5795.94	6086.49	637.50	0.00
5	0.40	1.51	0.38	0.55	-0.08	1.63	7.07	2.24	1.50	1.84	7014.02	8472.06	638.93	0.00

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 20.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	629.20	0.0	0.00	629.20	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	640.99	2020.0	0.04	640.95	2020.00	2020.0	965.4	0.0	0.0	0.0	0.0	0.0
2	642.27	3180.0	0.16	642.11	3180.00	3180.0	1090.2	0.0	0.0	0.0	0.0	0.0
3	645.39	6850.0	0.98	644.41	6850.00	6850.0	1339.7	0.0	0.0	0.0	0.0	0.0
4	646.16	7900.0	1.24	644.92	7900.00	7900.0	1393.9	0.0	0.0	0.0	0.0	0.0
5	648.20	10900.0	1.92	646.28	10900.00	10900.0	1541.4	0.0	0.0	0.0	0.0	0.0

MIN ROAD ELEVATION = 652.00 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 648.80 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 20.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	629.3	0.0	0.0							
LOW GRND	632.2	111.6	162.6	0.00	0.22	0.22				48.3
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	632.2	111.6	162.6	0.00	0.22	0.22				48.3
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	641.1	1386.5	2020.0	0.00	0.44	2.29	2020.00	633.7	0.00062	499.7
2	642.3	2179.6	3180.0	0.00	0.44	3.38	3180.00	635.0	0.00073	737.0
3	645.5	5187.1	6850.0	0.00	0.44	5.09	6850.00	638.4	0.00061	1107.8
4	646.2	6034.4	7900.0	0.00	0.44	5.25	7900.00	639.4	0.00055	1144.1
5	648.2	8403.4	10900.0	0.00	0.44	5.44	10900.00	640.5	0.00044	1185.4

SEGMENT TABLE FOR SECTION 20.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	120.	1702.	198.
2020.	VELOCITY FPS	2.09	0.88	2.24	0.40
2	DISCHARGE CFS	3180.	187.	2376.	618.
3180.	VELOCITY FPS	2.37	1.05	2.70	0.55
3	DISCHARGE CFS	6850.	344.	3481.	3025.
6850.	VELOCITY FPS	2.22	1.14	2.96	0.82
4	DISCHARGE CFS	7900.	382.	3694.	3824.
7900.	VELOCITY FPS	2.13	1.13	2.96	0.86
5	DISCHARGE CFS	10900.	485.	4154.	6261.
10900.	VELOCITY FPS	1.95	1.10	2.88	0.96
1	ELEV 641.1 KD	80580.	4802.	68558.	7220.
2	ELEV 642.3 KD	116689.	6886.	87970.	21834.
3	ELEV 645.5 KD	276937.	14022.	142528.	120386.
4	ELEV 646.2 KD	335072.	16256.	157379.	161437.
5	ELEV 648.2 KD	521867.	23299.	199973.	298595.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 20.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
629.30	0.					
630.	23.	34.	390.	1.	387.	1.
631.	60.	41.	1772.	1.	1770.	1.
632.	105.	47.	4003.	1.	4001.	1.
633.	155.	54.	7269.	9.	7259.	1.
634.	212.	60.	11451.	70.	11373.	1.
635.	275.	66.	16526.	228.	16292.	1.
636.	345.	73.	22409.	513.	21892.	1.
637.	428.	91.	27061.	948.	26101.	1.
638.	528.	112.	32950.	1568.	31380.	1.
639.	688.	205.	44525.	2387.	41779.	182.
640.	946.	311.	59975.	3434.	54182.	2122.
641.	1363.	490.	79907.	4725.	67785.	6836.
642.	1953.	675.	106532.	6288.	82631.	16667.
643.	2714.	850.	141729.	8140.	98647.	34077.
644.	3632.	997.	187585.	10302.	115787.	60843.
645.	4680.	1086.	247253.	12791.	134011.	100313.
646.	5800.	1134.	318779.	15615.	153191.	149948.
647.	6948.	1161.	402759.	18805.	173433.	209636.
648.	8116.	1179.	498616.	22381.	194717.	281207.
649.	9305.	1204.	602264.	26350.	216947.	358736.
650.	10527.	1235.	713155.	30725.	240081.	441973.
651.	11780.	1269.	832608.	35534.	264180.	532613.
652.	13063.	1307.	960300.	40792.	289225.	630153.
653.	14380.	1325.	1103351.	46499.	315092.	741352.
654.	15708.	1335.	1259906.	52870.	341918.	864943.
655.	17047.	1339.	1427590.	60352.	369565.	997429.
656.	18387.	1340.	1594691.	67694.	397701.	1128001.
657.	19727.	1340.	1765234.	75112.	426508.	1260505.
658.	21067.	1340.	1946987.	83036.	456267.	1403035.
659.	22407.	1340.	2140258.	91481.	486977.	1555961.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 20.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	633.1	0.0	0.0							
LOW GRND	636.0	111.6	164.3	0.00	7.09	7.09				48.3
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	636.0	111.6	164.3	0.00	7.09	7.09				48.3
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	644.9	1372.5	2020.0	0.00	13.93	68.00	2020.00	637.5	0.00063	493.7
2	646.5	2399.0	3180.0	0.00	13.93	108.86	3180.00	638.8	0.00061	790.3
3	649.2	5102.8	6850.0	0.00	13.93	152.09	6850.00	642.3	0.00061	1104.2
4	649.9	5819.4	7900.0	0.00	13.93	156.32	7900.00	643.3	0.00059	1134.9
5	651.5	7726.1	10900.0	0.00	13.93	161.42	10900.00	644.3	0.00053	1171.9

SEGMENT TABLE FOR SECTION 20.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	123.	1697.	200.
2020.	VELOCITY FPS	2.09	0.91	2.24	0.42
2	DISCHARGE CFS	3180.	189.	2285.	705.
3180.	VELOCITY FPS	2.17	1.01	2.51	0.54
3	DISCHARGE CFS	6850.	351.	3461.	3038.
6850.	VELOCITY FPS	2.22	1.17	2.96	0.84
4	DISCHARGE CFS	7900.	391.	3704.	3805.
7900.	VELOCITY FPS	2.19	1.19	3.01	0.89
5	DISCHARGE CFS	10900.	500.	4294.	6106.
10900.	VELOCITY FPS	2.11	1.22	3.09	1.03
1	ELEV 644.9 KD	80220.	4908.	68100.	7212.
2	ELEV 646.5 KD	128579.	7679.	92804.	28095.
3	ELEV 649.2 KD	275892.	14251.	141095.	120546.
4	ELEV 649.9 KD	324502.	16165.	153534.	154803.
5	ELEV 651.5 KD	475396.	21834.	187621.	265941.

***** WSP2 MICROCOMPUTER TEST VERSION *****

K.D TABLE FOR CROSS SECTION 20.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
633.15	0.					
634.	28.	35.	541.	1.	539.	1.
635.	67.	42.	2054.	1.	2052.	1.
636.	112.	48.	4409.	1.	4407.	1.
637.	163.	55.	7840.	14.	7823.	1.
638.	221.	61.	12158.	90.	12061.	1.
639.	285.	67.	17372.	273.	17098.	1.
640.	357.	76.	23082.	585.	22488.	1.
641.	442.	95.	27908.	1060.	26832.	1.
642.	545.	115.	34066.	1731.	32334.	1.
643.	713.	221.	46672.	2612.	43610.	450.
644.	987.	327.	62783.	3729.	56197.	2857.
645.	1429.	518.	83697.	5101.	69967.	8216.
646.	2053.	702.	112033.	6755.	84967.	19394.
647.	2846.	875.	149367.	8712.	101138.	38532.
648.	3788.	1011.	198203.	10990.	118431.	67850.
649.	4848.	1093.	260933.	13609.	136800.	110006.
650.	5968.	1141.	336261.	16583.	156188.	162857.
651.	7122.	1164.	424080.	19930.	176559.	226686.
652.	8295.	1183.	523273.	23677.	197972.	301175.
653.	9483.	1208.	631715.	27840.	220390.	383485.
654.	10712.	1239.	746206.	32417.	243646.	469812.
655.	11973.	1275.	869479.	37444.	267865.	563837.
656.	13255.	1319.	1002368.	42945.	293081.	666342.
657.	14579.	1327.	1151687.	48902.	319059.	783334.
658.	15909.	1336.	1313933.	55661.	345998.	912020.
659.	17248.	1339.	1488280.	63488.	373803.	1050828.
660.	18588.	1340.	1658189.	70959.	401962.	1183675.
661.	19928.	1340.	1834898.	78689.	430912.	1321913.
662.	21268.	1340.	2023197.	86945.	460814.	1470553.
663.	22608.	1340.	2223405.	95740.	491667.	1629977.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 20.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	637.3	0.0	0.0							
LOW GRND	642.0	200.6	197.0	0.00	5.41	5.41				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	642.0	200.6	197.0	0.00	5.41	5.41				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	647.1	2056.6	2020.0	0.00	5.41	53.88	2020.00	641.9	0.00052	617.7
2	648.6	3127.9	3180.0	0.00	5.41	65.87	3180.00	643.1	0.00049	755.1
3	651.3	5278.2	6850.0	0.00	5.41	70.89	6850.00	644.3	0.00053	812.6
4	652.0	5824.4	7900.0	0.00	5.41	72.10	7900.00	644.6	0.00053	826.5
5	653.7	7248.8	10900.0	0.00	5.41	75.18	10900.00	645.3	0.00054	861.8

SEGMENT TABLE FOR SECTION 20.9

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2020.	433.	1034.	553.
2020.	VELOCITY FPS	1.57	0.60	2.09	0.66
2	DISCHARGE CFS	3180.	853.	1306.	1021.
3180.	VELOCITY FPS	1.57	0.68	2.24	0.79
3	DISCHARGE CFS	6850.	2442.	2049.	2359.
6850.	VELOCITY FPS	1.76	1.05	2.76	1.07
4	DISCHARGE CFS	7900.	2914.	2233.	2753.
7900.	VELOCITY FPS	1.80	1.12	2.86	1.12
5	DISCHARGE CFS	10900.	4269.	2735.	3896.
10900.	VELOCITY FPS	1.92	1.31	3.12	1.25
1	ELEV 647.1 KD	88761.	18987.	45548.	24226.
2	ELEV 648.6 KD	143583.	37677.	59829.	46077.
3	ELEV 651.3 KD	298210.	106012.	89529.	102669.
4	ELEV 652.0 KD	343438.	126408.	97433.	119597.
5	ELEV 653.7 KD	471086.	184193.	118627.	168266.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 20.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
637.30	0.					
638.	26.	37.	453.	1.	451.	1.
639.	63.	39.	1962.	1.	1960.	1.
640.	103.	41.	4154.	1.	4152.	1.
641.	147.	49.	6745.	1.	6743.	1.
642.	201.	58.	10129.	1.	10127.	1.
643.	408.	240.	17280.	1109.	15447.	436.
644.	681.	315.	28222.	4178.	21670.	2373.
645.	1036.	395.	43478.	8588.	28685.	6206.
646.	1471.	475.	63637.	14513.	36464.	12659.
647.	2013.	609.	86921.	18468.	44973.	23479.
648.	2688.	743.	119048.	27718.	54181.	37149.
649.	3444.	764.	164343.	46534.	64052.	53435.
650.	4220.	785.	217136.	69598.	74581.	72656.
651.	5015.	806.	277144.	96402.	85747.	94775.
652.	5831.	827.	344131.	126657.	97530.	119806.
653.	6667.	848.	417881.	160122.	109912.	147771.
654.	7525.	869.	498095.	196483.	122875.	178654.
655.	8407.	890.	584667.	235621.	136404.	212518.
656.	9306.	910.	678146.	277925.	150503.	249638.
657.	10223.	931.	778383.	323194.	165158.	290032.
658.	11172.	968.	875469.	361648.	180932.	333425.
659.	12178.	1029.	969080.	392549.	196041.	380245.
660.	13222.	1105.	1060580.	417621.	212288.	430671.
661.	14419.	1219.	1152797.	439192.	229023.	484278.
662.	15678.	1316.	1261855.	473866.	246277.	541630.
663.	17030.	1386.	1397630.	530942.	264030.	602608.
664.	18456.	1444.	1548131.	598487.	282264.	667196.
665.	19912.	1490.	1715148.	676102.	300994.	737881.
666.	21411.	1496.	1915491.	772678.	320190.	822209.
667.	22911.	1500.	2121712.	872193.	339831.	908744.
668.	24411.	1500.	2326891.	969368.	359875.	994531.
669.	25911.	1500.	2544372.	1073728.	380402.	1085273.
670.	27411.	1500.	2774469.	1185553.	401407.	1181086.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	A1.B	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.33	2.06	0.00	0.00	0.00	2.06	5.19	1.85	1.28	2.56	2156.72	2246.77	642.18	0.00
2	0.19	2.73*	0.00	0.00	0.00*	2.73	6.65	1.32	1.06	2.34	3233.79	4272.39	643.42	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 21.0 Fern Dev

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	637.30	0.0	0.00	637.30	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	648.33	2020.0	1.12	647.21	2020.00	2020.0	389.0	0.0	0.0	0.0	0.0	0.0
2	650.74	3180.0	2.02	648.72	3180.00	2994.8	453.2	0.0	0.0	185.2	86.2	193.9
3	652.78	6850.0	1.30	651.48	6850.00	3786.5	520.3	0.0	0.0	3063.5	719.4	396.4
4	653.33	7900.0	1.18	652.15	7900.00	3613.5	520.3	0.0	0.0	4286.5	971.4	508.2
5	654.67	10900.0	0.84	653.83	10900.00	3055.2	520.3	0.0	0.0	7844.8	1742.0	618.4

MIN ROAD ELEVATION = 650.10 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 650.30 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 21.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	637.3	0.0	0.0							
LOW GRND	642.0	178.4	156.0	0.00	0.93	0.93				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	642.0	178.4	156.0	0.00	0.93	0.93				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	648.4	2310.6	2020.0	0.00	1.29	13.23	2020.00	642.6	0.00018	823.5
2	650.8	4298.9	3180.0	0.00	1.29	13.82	3180.00	643.7	0.00008	860.3
3	652.8	6099.0	6850.0	0.00	1.29	14.34	6850.00	645.4	0.00012	892.3
4	653.4	6594.9	7900.0	0.00	1.29	14.48	7900.00	645.8	0.00013	900.9
5	654.7	7829.4	10900.0	0.00	1.29	14.82	10900.00	647.0	0.00014	922.0

SEGMENT TABLE FOR SECTION 21.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	81.	986.	953.
2020.	VELOCITY FPS	1.19	0.62	1.52	0.62
2	DISCHARGE CFS	3180.	168.	995.	2017.
3180.	VELOCITY FPS	0.85	0.60	1.19	0.63
3	DISCHARGE CFS	6850.	399.	1710.	4741.
6850.	VELOCITY FPS	1.22	0.94	1.71	1.01
4	DISCHARGE CFS	7900.	470.	1877.	5554.
7900.	VELOCITY FPS	1.30	1.01	1.80	1.09
5	DISCHARGE CFS	10900.	673.	2350.	7877.
10900.	VELOCITY FPS	1.48	1.17	2.04	1.29

1	ELEV	648.4	KD	149191.	5823.	75358.	68009.
2	ELEV	650.8	KD	366101.	19288.	115562.	231251.
3	ELEV	652.8	KD	624555.	36358.	155979.	432218.
4	ELEV	653.4	KD	701118.	41571.	167496.	492051.
5	ELEV	654.7	KD	912611.	56285.	197476.	658850.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 21.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
637.30	0.					
638.	21.	31.	490.	1.	488.	1.
639.	53.	33.	2120.	1.	2118.	1.
640.	87.	36.	4447.	1.	4445.	1.
641.	127.	46.	7097.	1.	7095.	1.
642.	178.	58.	10843.	1.	10841.	1.
643.	264.	113.	17093.	1.	16667.	425.
644.	408.	168.	26521.	1.	23740.	2642.
645.	604.	217.	40207.	1.	32114.	7833.
646.	839.	265.	58792.	1.	41834.	16957.
647.	1280.	566.	81872.	1366.	54820.	25687.
648.	1972.	817.	124248.	4389.	69172.	50688.
649.	2798.	833.	196365.	8591.	84777.	101880.
650.	3639.	848.	285917.	14137.	101668.	169265.
651.	4496.	864.	391708.	20901.	119787.	250473.
652.	5367.	879.	512670.	28840.	139088.	344427.
653.	6254.	895.	647898.	37930.	159527.	450281.
654.	7157.	911.	796258.	48122.	181050.	566904.
655.	8077.	926.	957312.	59432.	203623.	694009.
656.	9010.	942.	1132591.	72012.	227291.	833136.
657.	9956.	957.	1321461.	85842.	252019.	983600.
658.	10926.	982.	1512691.	100705.	277662.	1134222.
659.	11931.	1019.	1706460.	116857.	304322.	1285198.
660.	12959.	1065.	1904360.	134395.	332027.	1437938.
661.	14262.	1362.	2071472.	134398.	360570.	1576196.
662.	15740.	1634.	2268831.	137516.	390122.	1741007.
663.	17480.	1866.	2514098.	145401.	420597.	1947986.
664.	19458.	1996.	2848887.	202479.	451940.	2189296.
665.	21504.	2080.	3230408.	289584.	484145.	2450672.
666.	23584.	2080.	3629691.	364443.	516809.	2712463.
667.	25664.	2080.	4062077.	455055.	550445.	2991799.
668.	27744.	2080.	4529056.	564034.	585046.	3289206.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 21.95 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	638.5	0.0	0.0							
LOW GRND	643.2	178.4	222.9	0.00	0.95	0.95				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	643.2	178.4	222.9	0.00	0.95	0.95				58.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	648.7	1616.7	2020.0	0.00	1.30	11.22	2020.00	643.8	0.00040	688.3
2	650.9	3365.3	3180.0	0.00	1.30	13.74	3180.00	644.9	0.00016	843.2
3	653.0	5158.3	6850.0	0.00	1.30	14.27	6850.00	646.6	0.00020	875.7
4	653.5	5644.9	7900.0	0.00	1.30	14.41	7900.00	647.0	0.00020	884.3
5	654.9	6863.5	10900.0	0.00	1.30	14.76	10900.00	648.2	0.00021	905.5

SEGMENT TABLE FOR SECTION 21.95

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2020.	56.	1218.	746.
2020.	VELOCITY FPS	1.75	0.71	2.12	0.77
2	DISCHARGE CFS	3180.	154.	1181.	1845.
3180.	VELOCITY FPS	1.16	0.74	1.58	0.77
3	DISCHARGE CFS	6850.	382.	1899.	4569.
6850.	VELOCITY FPS	1.48	1.10	2.07	1.17
4	DISCHARGE CFS	7900.	452.	2064.	5384.
7900.	VELOCITY FPS	1.54	1.17	2.15	1.25
5	DISCHARGE CFS	10900.	654.	2530.	7716.
10900.	VELOCITY FPS	1.71	1.33	2.37	1.45
1	ELEV 648.7 KD	100077.	2446.	61568.	36064.
2	ELEV 650.9 KD	254043.	12199.	96044.	145800.
3	ELEV 653.0 KD	483332.	26923.	134445.	321964.
4	ELEV 653.5 KD	553040.	31548.	145387.	376106.
5	ELEV 654.9 KD	745411.	44616.	173911.	526884.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 21.95

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
638.50	0.					
639.	15.	31.	281.	1.	279.	1.
640.	47.	32.	1724.	1.	1722.	1.
641.	80.	34.	3974.	1.	3972.	1.
642.	118.	44.	6501.	1.	6499.	1.
643.	167.	56.	10001.	1.	9999.	1.
644.	246.	102.	15696.	1.	15394.	154.
645.	373.	158.	24267.	1.	22226.	2040.
646.	560.	207.	37070.	1.	30334.	6575.
647.	788.	255.	54635.	1.	39780.	14814.
648.	1192.	506.	76841.	343.	52054.	23723.
649.	1833.	767.	114670.	3506.	66147.	44477.
650.	2633.	830.	179764.	7546.	81513.	89038.
651.	3470.	845.	266458.	12915.	98179.	154457.
652.	4323.	861.	369574.	19481.	116077.	233548.
653.	5191.	876.	487934.	27213.	135160.	325370.
654.	6073.	892.	620744.	36101.	155390.	429253.
655.	6976.	907.	764857.	45938.	176634.	541990.
656.	7892.	923.	923929.	57068.	199018.	667600.
657.	8821.	939.	1097101.	69447.	222497.	805067.
658.	9767.	954.	1282135.	82938.	246972.	952126.
659.	10732.	977.	1473129.	97600.	272436.	1102972.
660.	11726.	1010.	1668406.	113546.	298921.	1255873.
661.	12754.	1056.	1863751.	130754.	326392.	1406565.
662.	14002.	1303.	2037500.	134398.	354771.	1548005.
663.	15392.	1587.	2221616.	135954.	384156.	1701398.
664.	17132.	1819.	2463802.	143813.	414415.	1905381.
665.	19050.	1975.	2775922.	187068.	445597.	2138569.
666.	21088.	2080.	3154390.	276291.	477729.	2400370.
667.	23168.	2080.	3547229.	348288.	510198.	2658714.
668.	25248.	2080.	3972875.	435551.	543640.	2934498.
669.	27328.	2080.	4432815.	540631.	578049.	3228249.
670.	29408.	2080.	4928552.	666401.	613420.	3540494.

***** WSP2 MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
END                                                          314
ENDJOB                                                       315
```

**********NORMAL END OF JOB----------

FILENAME = FMISTY3.OUT

WSP2 XEQ 11/01/88 09:48:27
REV 03/14/88

***** WSP2 MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
WSP2       40.                                                          1
TITLE      MISTEGUAY CREEK-FPMS-SAGINAW, SHIAWASSEE & GENESEE CO., MI.  2
TITLE      FLOOD PLAIN MANAGEMENT STUDY - PRESENT CONDITIONS 10-27-88   3
TITLE      DISCHARGE FROM STRUCTURE 3 TO PORTER CREEK
DISCHARGE  -1.       2670.     4270.     7190.     8270.     11250.     4
STARTE     22.1      655.72    661.33    662.97    663.35    664.21     7
TRIB       25.1      25.5
OUTPUT     PSH
COMMENT    STARTING ELEVATIONS FROM MISTYB.OUT (TR 20 OF 10-18-88)      12
REACH      22.1      1.        0.        0.                             14
REACH2     22.5      -3.3                                               15
REACH      22.5      1.        2804.     2200.                          16
REACH      22.9      1.        4080.     3000.                          17
ROAD       23.0      2.7       350.      350.                           18
COMMENT    CS 23.0 IS DITCH RD. AT STA. 941+80.                         19
REACH      23.1      1.        100.      100.                           19A
REACH2     23.5      -2.9                                               19B
REACH      23.5      1.        3200.     2600.                          20
REACH      23.9      1.        4906.     4600.                          21
REACH      24.0      1.        100.      100.                           22
COMMENT    CS 24.0 IS BYRON RD AT STA. 1033+16., TREATED AS VALLEY      23
COMMENT    SECTION.                                                     23A
REACH      24.5      1.        3677.     3300.                          24
REACH      24.7      1.        4906.     4500.                          25
REACH      24.9      1.        3286.     3100.                          26
ROAD       25.0      2.7       100.      100.                           27
COMMENT    CS 25.0 IS EASTON RD. AT STA. 1152+85.                       28
REACH      25.1      1.        150.      150.                           28A
REACH      25.2      1.        1750.     1500.
REACH      25.5      1.        1500.     1300.                          29
REACH      25.9      1.        3393.     2900.                          30
ROAD       26.0      2.7       375.      375.                           31
COMMENT    CS 26.0 IS ALLAN RD AT STA. 1226+22.                         32
REACH      26.1      1.        100.      100.                           32A
REACH2     25.9      .5                                                 32B
REACH      26.9      1.        4836.     3400.                          33
REACH      26.95     1.        400.      400.                           34
REACH2     26.9      .7                                                 35
SEGMENT    22.5      1         N         -50.                           38
N VALUE    .110                                                         39
SEGMENT    22.5      2         C         85.                            40
N VALUE    .067                                                         41
SEGMENT    22.5      3         N         800.                           42
N VALUE    .110                                                         43
SECTION    22.5                                                         44
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
          -1700.    670.      -1440.    664.      -1320.    664.      45
          -970.     664.      -880.     662.      -825.     660.      46
          -735.     658.      -280.     656.      -80.      654.      47
          -65.      652.      -50.      650.      -25.      641.8     48
          0.        641.8     25.       641.8     85.       664.      49
          800.      670.                                              50
ENDTABLE                                                            51
SEGMENT   22.9      1         N         -75.                          52
N VALUE   .110                                                      53
SEGMENT   22.9      2         C         75.                           54
N VALUE   .067                                                      55
SEGMENT   22.9      3         N         510.                          56
N VALUE   .110                                                      57
SECTION   22.9                                                      58
          -1625.    672.      -1350.    670.      -615.     670.      59
          -525.     668.      -465.     660.      -390.     650.      60
          -310.     650.      -75.      650.      -45.      648.      61
          0.        645.      45.       645.      75.       652.      62
          125.      654.      300.      656.      420.      668.      63
          450.      670.      510.      672.                          64
ENDTABLE                                                            65
BPR       23.0      A         1.        3                             66
PIER      645.1     2.5                                               67
GIRDER    664.2     631.1     0.        .8        2.7                 68
          -62.1     667.      -62.      663.7     62.       663.1     69
          62.1      666.4                                             70
ENDTABLE                                                            71
SECTION   23.0                                                      72
          -1850.    675.      -600.     670.      -500.     667.2     73
          -300.     666.9     -100.     666.8     -62.1     667.0     74
          -62.      661.2     -38.      647.2     0.        645.1     75
          37.       647.1     62.       660.6     62.1      666.4     76
          100.      666.2     300.      665.4     400.      665.9     77
          500.      665.9     650.      670.      900.      675.      78
ENDTABLE                                                            79
SEGMENT   23.5      1         N         -40.                          80
N VALUE   .105                                                      81
SEGMENT   23.5      2         C         60.                           82
N VALUE   .067                                                      83
SEGMENT   23.5      3         N         770.                          84
N VALUE   .105                                                      85
SECTION   23.5                                                      86
          -770.     674.      -630.     672.      -510.     670.      87
          -310.     668.      -215.     654.      -110.     654.      88
          -40.      654.      -39.      654.      -23.      650.      89
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
          -18.      648.      0.        648.      18.       648.      90
          25.       650.      26.       650.      60.       654.      91
          90.       656.      150.      656.      340.      654.      92
          490.      654.      660.      656.      680.      658.      93
          770.      674.                                              94
ENDTABLE                                                            95
SEGMENT   23.9      1         N         -44.                          96
N VALUE   .105                                                      97
SEGMENT   23.9      2         C         45.                           98
N VALUE   .067                                                      99
SEGMENT   23.9      3         N         415.                          100
N VALUE   .105                                                      101
SECTION   23.9                                                      102
          -675.     672.      -665.     668.      -650.     664.      103
          -625.     662.      -580.     660.      -44.      658.      104
          -30.      654.      0.        654.      30.       654.      105
          45.       658.      240.      658.      265.      660.      106
          285.      668.      340.      670.      415.      672.      107
ENDTABLE                                                            108
SEGMENT   24.0      1         N         -26.                          109
N VALUE   .040                                                      110
SEGMENT   24.0      2         C         48.1                          111
N VALUE   .067                                                      112
SEGMENT   24.0      3         N         400.                          113
N VALUE   .040                                                      114
SECTION   24.0                                                      115
          -700.     675.      -180.     666.8     -100.     665.7     116
          -26.      664.9     -25.9     654.6     0.        654.8     117
          48.       655.8     48.1      664.9     100.      665.6     118
          300.      665.9     400.      675.                          119
ENDTABLE                                                            120
SEGMENT   24.5      1         N         -65.                          121
N VALUE   .105                                                      122
SEGMENT   24.5      2         C         65.                           123
N VALUE   .058                                                      124
SEGMENT   24.5      3         N         175.                          125
N VALUE   .105                                                      126
SECTION   24.5                                                      127
          -350.     680.      -300.     675.      -180.     664.      128
          -75.      662.      -65.      660.      -50.      656.8     129
          0.        656.8     50.       656.8     65.       660.      130
          100.      662.      135.      664.      150.      675.      131
          175.      680.                                              132
ENDTABLE                                                            133
SEGMENT   24.7      1         N         -35.                          134
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
N VALUE   .090                                                    135
SEGMENT   24.7     2        C        40.                          136
N VALUE   .049                                                    137
SEGMENT   24.7     3        N        110.                         138
N VALUE   .090                                                    139
SECTION   24.7                                                    140
          -1080.   690.     -920.    685.     -800.    670.       141
          -350.    670.     -35.     664.     -30.     662.       142
          -28.     659.9    0.       659.9    28.      659.9      143
          32.      662.     40.      664.     80.      685.       144
          110      690.                                           145
ENDTABLE                                                          146
SEGMENT   24.9     1        N        -40.                         147
N VALUE   .090                                                    148
SEGMENT   24.9     2        C        35.                          149
N VALUE   .049                                                    150
SEGMENT   24.9     3        N        850.                         151
N VALUE   .090                                                    152
SECTION   24.9                                                    153
          -490.    688.     -430.    684.     -400.    682.       154
          -320.    680.     -40.     664.     -35.     662.       155
          0.       662.     25.      662.     35.      664.       156
          355.     678.     580.     680.     850.     690.       157
ENDTABLE                                                          158
BPR       25.0     A        1        7                            159
PIER      661.8    2.0                                            160
GIRDER    673.9    673.4    0.       .8       2.7                 161
          -42.1    677.4    -42.     673.5    42.      673.4      162
          42.1     677.3                                          163
ENDTABLE                                                          164
SECTION   25.0                                                    165
          -400.    690.     -292.    681.4    -242.    679.9      166
          -142.    678.1    -42.1    677.4    -42.     662.2      167
          -10.     661.8    1.       661.8    10.      661.4      168
          42.      662.0    42.1     677.3    142.     677.2      169
          242.     677.6    342.     678.5    442.     678.3      170
          542.     679.5    642.     681.7    900.     690.       171
ENDTABLE                                                          172
SEGMENT   25.1     1        N        -110.
N VALUE   .110
SEGMENT   25.1     2        C        125.
N VALUE   .067
SEGMENT   25.1     3        N        735.
N VALUE   .110
SECTION   25.1
```

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
          -450.     690.      -420.     688.      -290.     686.
          -140.     682.      -110.     680.      -25.      661.9
          0.        661.9     25.       661.9     125.      668.
          535.      670.      635.      672.      735.      690.
ENDTABLE
COMPUTE   22.1      25.1      22.1
-----------------------------END OF DATA LISTING----------------------------
```

COMPUTE 22.1 25.1 22.1

----------STARTING DATA FROM GIVEN ELEVATION----------

***** WSPC MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 22.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	638.5	0.0	0.0							
LOW GRND	646.7	603.4	452.7	0.00	0.00	0.00				97.2
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	646.7	603.4	452.7	0.00	0.00	0.00				97.2
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	655.7	3558.4	2670.0	0.00	0.00	0.00	2670.00	642.6	0.00012	852.4
2	661.3	9321.2	4270.0	0.00	0.00	0.00	4270.00	644.0	0.00004	1342.4
3	663.0	12209.6	7190.0	0.00	0.00	0.00	7190.00	645.9	0.00008	1893.9
4	663.3	12937.2	8270.0	0.00	0.00	0.00	8270.00	646.6	0.00009	1955.6
5	664.2	14664.8	11250.0	0.00	0.00	0.00	11250.00	648.2	0.00012	2095.4

SEGMENT TABLE FOR SECTION 22.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2670.	577.	2093.	0.
2670.	VELOCITY FPS	1.19	0.29	1.32	0.00
2	DISCHARGE CFS	4270.	2075.	2191.	5.
4270.	VELOCITY FPS	0.71	0.30	0.95	0.08
3	DISCHARGE CFS	7190.	3759.	3381.	50.
7190.	VELOCITY FPS	0.97	0.40	1.33	0.15
4	DISCHARGE CFS	8270.	4430.	3765.	75.
8270.	VELOCITY FPS	1.04	0.45	1.46	0.17
5	DISCHARGE CFS	11250.	6304.	4774.	172.
11250.	VELOCITY FPS	1.23	0.56	1.77	0.23
1	ELEV 655.7 KD	240404.	49091.	191312.	1.
2	ELEV 661.3 KD	646846.	314201.	332624.	20.
3	ELEV 663.0 KD	815858.	424553.	387397.	3908.
4	ELEV 663.3 KD	872208.	465589.	400565.	6054.
5	ELEV 664.2 KD	1010664.	565640.	431045.	13978.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 22.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
638.50	0.					
639.	26.	53.	354.	1.	352.	1.
640.	82.	59.	2240.	1.	2238.	1.
641.	143.	64.	5356.	1.	5354.	1.
642.	210.	70.	9593.	1.	9591.	1.
643.	280.	76.	14929.	1.	14927.	1.
644.	362.	82.	21363.	1.	21361.	1.
645.	447.	87.	28916.	1.	28914.	1.
646.	537.	93.	37620.	1.	37618.	1.
647.	633.	100.	47768.	3.	47760.	1.
648.	739.	110.	59844.	61.	59773.	1.
649.	854.	121.	73256.	288.	72954.	1.
650.	980.	131.	88067.	756.	87291.	1.
651.	1129.	183.	103982.	1201.	102771.	1.
652.	1358.	271.	122478.	2751.	119401.	1.
653.	1707.	427.	144367.	6687.	137176.	1.
654.	2231.	627.	171841.	14620.	156094.	1.
655.	2955.	805.	208368.	31610.	176157.	1.
656.	3798.	866.	257099.	57656.	197367.	1.
657.	4683.	906.	315024.	93915.	219734.	1.
658.	5602.	939.	382218.	138705.	243258.	1.
659.	6561.	977.	456439.	187743.	267952.	1.
660.	7563.	1022.	537776.	243217.	293822.	1.
661.	8775.	1192.	622148.	299730.	322063.	4.
662.	10430.	1648.	701165.	345053.	354642.	454.
663.	12267.	1899.	823078.	427676.	388427.	4046.
664.	14208.	2061.	978102.	541849.	423579.	12089.
665.	16383.	2224.	1149101.	662819.	459749.	23885.
666.	18688.	2359.	1342101.	799042.	497171.	42930.
667.	21123.	2468.	1559008.	950166.	535796.	70587.
668.	23603.	2500.	1781807.	1098390.	574781.	97552.
669.	26103.	2500.	2017961.	1251806.	614641.	124858.
670.	28603.	2500.	2276256.	1420644.	655846.	158540.
671.	31103.	2500.	2557965.	1605893.	698394.	199811.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 22.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	641.8	0.0	0.0							
LOW GRND	650.0	603.4	883.2	0.00	6.25	6.25				97.2
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	650.0	603.4	883.2	0.00	6.25	6.25				97.2
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	656.6	1824.1	2670.0	0.00	7.40	24.40	2670.00	645.9	0.00031	483.1
2	661.6	5897.7	4270.0	0.00	8.27	48.02	4270.00	647.3	0.00010	950.8
3	663.4	7663.4	7190.0	0.00	8.59	51.83	7190.00	649.2	0.00015	1026.3
4	663.8	8116.6	8270.0	0.00	8.66	52.90	8270.00	649.9	0.00018	1047.4
5	664.9	9771.1	11250.0	0.00	8.69	74.06	11250.00	651.5	0.00025	1466.5

SEGMENT TABLE FOR SECTION 22.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	177.	2493.	0.
2670.	VELOCITY FPS	1.86	0.34	1.92	0.00
2	DISCHARGE CFS	4270.	1754.	2516.	0.
4270.	VELOCITY FPS	1.05	0.44	1.31	0.00
3	DISCHARGE CFS	7190.	3518.	3672.	0.
7190.	VELOCITY FPS	1.31	0.64	1.71	0.00
4	DISCHARGE CFS	8270.	4169.	4101.	0.
8270.	VELOCITY FPS	1.40	0.71	1.86	0.00
5	DISCHARGE CFS	11250.	5838.	5394.	18.
11250.	VELOCITY FPS	1.70	0.80	2.30	0.21
1	ELEV 656.6 KD	151428.	9309.	142118.	1.
2	ELEV 661.6 KD	422967.	172209.	250757.	1.
3	ELEV 663.4 KD	577519.	281100.	296418.	1.
4	ELEV 663.8 KD	620544.	312223.	308319.	1.
5	ELEV 664.9 KD	710128.	368581.	341465.	82.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 22.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
641.80	0.					
642.	10.	51.	78.	1.	76.	1.
643.	64.	57.	1536.	1.	1534.	1.
644.	124.	63.	4301.	1.	4299.	1.
645.	190.	68.	8208.	1.	8205.	1.
646.	261.	74.	13210.	1.	13208.	1.
647.	338.	80.	19320.	1.	19318.	1.
648.	421.	86.	26534.	1.	26532.	1.
649.	509.	91.	34879.	1.	34877.	1.
650.	603.	97.	44398.	1.	44396.	1.
651.	706.	107.	56085.	31.	56038.	1.
652.	819.	118.	69115.	215.	68872.	1.
653.	942.	128.	83560.	645.	82857.	1.
654.	1084.	166.	99218.	1202.	98001.	1.
655.	1279.	241.	116895.	2301.	114293.	1.
656.	1576.	365.	137963.	5939.	131728.	1.
657.	2013.	574.	163275.	12970.	150304.	1.
658.	2738.	752.	200351.	28459.	170016.	1.
659.	3541.	851.	247929.	54782.	190883.	1.
660.	4409.	896.	307364.	93708.	212903.	1.
661.	5323.	929.	377348.	140364.	236078.	1.
662.	6273.	966.	455397.	193860.	260423.	1.
663.	7257.	1007.	541919.	255363.	285937.	1.
664.	8279.	1055.	636615.	323989.	312625.	1.
665.	9933.	1511.	719652.	373676.	344688.	129.
666.	11693.	1850.	832118.	448489.	378183.	3219.
667.	13607.	2012.	996376.	571556.	412907.	10170.
668.	15730.	2175.	1178886.	704970.	448733.	22043.
669.	17958.	2327.	1384333.	855353.	485878.	41603.
670.	20393.	2435.	1615921.	1019037.	524050.	68773.
671.	22854.	2500.	1863280.	1191311.	563086.	102106.
672.	25354.	2500.	2116687.	1359501.	602543.	131013.
673.	27854.	2500.	2394592.	1544774.	643344.	166744.
674.	30354.	2500.	2698459.	1748234.	685489.	210611.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 22.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	645.0	0.0	0.0							
LOW GRND	650.0	466.1	281.9	0.00	13.25	13.25				141.4
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	650.0	466.1	281.9	0.00	13.25	13.25				141.4
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	656.9	4413.9	2670.0	0.00	14.05	51.76	2670.00	648.7	0.00008	751.6
2	661.8	8243.7	4270.0	0.00	14.05	57.57	4270.00	649.7	0.00004	836.0
3	663.7	9858.4	7190.0	0.00	14.05	59.86	7190.00	651.0	0.00006	869.1
4	664.2	10283.7	8270.0	0.00	14.05	60.45	8270.00	651.1	0.00007	877.7
5	665.3	11335.9	11250.0	0.00	14.05	61.88	11250.00	651.6	0.00010	898.4

SEGMENT TABLE FOR SECTION 22.9

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	1158.	1374.	138.
2670.	VELOCITY FPS	0.74	0.49	0.92	0.25
2	DISCHARGE CFS	4270.	1912.	1777.	581.
4270.	VELOCITY FPS	0.61	0.45	0.80	0.32
3	DISCHARGE CFS	7190.	3226.	2830.	1134.
7190.	VELOCITY FPS	0.85	0.64	1.13	0.48
4	DISCHARGE CFS	8270.	3711.	3215.	1344.
8270.	VELOCITY FPS	0.94	0.71	1.25	0.54
5	DISCHARGE CFS	11250.	5049.	4250.	1951.
11250.	VELOCITY FPS	1.15	0.88	1.54	0.68
1	ELEV 656.9 KD	297055.	129023.	153707.	14325.
2	ELEV 661.8 KD	711009.	318535.	296390.	96084.
3	ELEV 663.7 KD	919336.	412563.	362267.	144507.
4	ELEV 664.2 KD	977297.	438619.	380117.	158562.
5	ELEV 665.3 KD	1124307.	504642.	424805.	194860.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 22.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
645.00	0.					
646.	55.	64.	1090.	1.	1088.	1.
647.	129.	84.	3794.	1.	3792.	1.
648.	222.	103.	8191.	1.	8188.	1.
649.	335.	122.	14476.	1.	14474.	1.
650.	466.	141.	22823.	1.	22821.	1.
651.	928.	468.	39970.	4982.	34987.	1.
652.	1402.	480.	65152.	15884.	49266.	1.
653.	1899.	512.	98061.	31356.	66581.	124.
654.	2427.	545.	137575.	50868.	85920.	787.
655.	3020.	640.	183628.	74113.	107183.	2332.
656.	3716.	722.	237913.	100654.	130235.	6632.
657.	4454.	752.	301435.	130741.	155089.	14906.
658.	5216.	770.	373316.	164191.	181672.	26959.
659.	5994.	787.	452927.	200889.	209923.	41807.
660.	6790.	805.	539971.	240729.	239786.	59288.
661.	7603.	822.	634128.	283570.	271196.	79171.
662.	8437.	840.	735216.	329367.	304108.	101459.
663.	9285.	857.	843620.	378358.	338557.	126523.
664.	10148.	875.	959193.	430455.	374497.	154241.
665.	11035.	892.	1081071.	485204.	411781.	183926.
666.	11938.	910.	1210041.	543041.	450499.	216303.
667.	12851.	927.	1346365.	604096.	490669.	251600.
668.	13798.	961.	1475091.	654954.	532087.	287858.
669.	14814.	1194.	1588089.	686358.	574907.	326004.
670.	15936.	1727.	1670820.	686359.	619042.	364935.
671.	17735.	1967.	1752840.	686359.	664435.	401222.
672.	19735.	2105.	1857799.	704721.	711154.	441651.
673.	21869.	2124.	2061800.	801888.	759080.	500178.
674.	24002.	2135.	2292103.	917918.	808138.	560637.
675.	26137.	2135.	2559148.	1062271.	858156.	620495.
676.	28272.	2135.	2847003.	1223451.	909478.	684461.
677.	30407.	2135.	3156530.	1402780.	962092.	752674.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	APB	DLTAP	SIGMA	DKS	COEFH	VN2 FPS	ALPHA	ALPHAC	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.36	1.71	0.09	0.53*	0.00	1.75	2.71	1.68	1.24	1.49	4360.84	5444.08	649.62	0.00
2	0.28	2.04	0.08	0.44*	0.00*	2.07	2.75	1.40	1.11	1.39	8170.65	10168.00	650.85	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 23.0

Ditch Road

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	645.10	0.0	0.00	645.10	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	657.24	2670.0	0.26	656.98	2670.00	2670.0	986.0	0.0	0.0	0.0	0.0	0.0
2	662.06	4270.0	0.28	661.78	4270.00	4270.0	1554.6	0.0	0.0	0.0	0.0	0.0
3	664.21	7190.0	0.52	663.69	7190.00	7190.0	1755.4	0.0	0.0	0.0	0.0	0.0
4	664.72	8270.0	0.54	664.18	8270.00	8270.0	1755.4	0.0	0.0	0.0	0.0	0.0
5	666.29	11250.0	0.92	665.37	11250.00	10726.1	1755.4	0.0	0.0	523.9	206.6	432.4

MIN ROAD ELEVATION = 665.40 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 631.10 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 23.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	645.1	0.0	0.0							
LOW GRND	651.1	380.0	186.1	0.00	1.02	1.02				99.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	651.1	380.0	186.1	0.00	1.02	1.02				99.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	657.2	5452.1	2670.0	0.00	1.03	9.80	2670.00	649.8	0.00008	948.8
2	662.1	10171.3	4270.0	0.00	1.03	10.42	4270.00	651.7	0.00003	1008.6
3	664.2	12363.7	7190.0	0.00	1.03	10.69	7190.00	652.2	0.00005	1035.2
4	664.7	12901.1	8270.0	0.00	1.03	10.88	8270.00	652.4	0.00006	1053.6
5	666.3	14645.8	11250.0	0.00	1.03	12.08	11250.00	652.8	0.00008	1169.3

SEGMENT TABLE FOR SECTION 23.1

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	489.	923.	1258.
2670.	VELOCITY FPS	0.64	0.41	0.93	0.39
2	DISCHARGE CFS	4270.	830.	1112.	2327.
4270.	VELOCITY FPS	0.50	0.36	0.75	0.37
3	DISCHARGE CFS	7190.	1423.	1743.	4024.
7190.	VELOCITY FPS	0.68	0.49	1.03	0.52
4	DISCHARGE CFS	8270.	1610.	1986.	4674.
8270.	VELOCITY FPS	0.75	0.53	1.14	0.57
5	DISCHARGE CFS	11250.	1964.	2668.	6618.
11250.	VELOCITY FPS	0.91	0.56	1.40	0.72
1	ELEV 657.2 KD	290616.	53159.	101074.	136382.
2	ELEV 662.1 KD	749075.	145637.	195441.	407997.
3	ELEV 664.2 KD	1009866.	199833.	245062.	564970.
4	ELEV 664.7 KD	1072251.	208964.	257595.	605693.
5	ELEV 666.3 KD	1254577.	219327.	297632.	737618.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 23.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
645.10	0.					
646.	35.	41.	688.	1.	685.	1.
647.	79.	48.	2431.	1.	2429.	1.
648.	133.	60.	4977.	1.	4975.	1.
649.	200.	73.	8617.	1.	8615.	1.
650.	279.	85.	13502.	1.	13500.	1.
651.	370.	98.	19775.	1.	19773.	1.
652.	869.	607.	33635.	1596.	28908.	1749.
653.	1582.	801.	57811.	6986.	39921.	9995.
654.	2442.	904.	94627.	14648.	52301.	26902.
655.	3354.	920.	144238.	24387.	65975.	53444.
656.	4281.	933.	203687.	36014.	80870.	86443.
657.	5220.	946.	272913.	49631.	96985.	126125.
658.	6171.	958.	350945.	65081.	114253.	171563.
659.	7136.	971.	436878.	82216.	132604.	222004.
660.	8113.	983.	530577.	101060.	152016.	277409.
661.	9104.	995.	632040.	121649.	172473.	337796.
662.	10105.	1008.	741753.	144116.	193994.	403582.
663.	11117.	1020.	858846.	168306.	216511.	474004.
664.	12146.	1033.	982554.	194100.	239960.	548425.
665.	13195.	1072.	1102890.	210358.	264396.	627746.
666.	14278.	1140.	1217537.	215960.	289791.	711729.
667.	15492.	1236.	1342709.	227092.	316055.	799344.
668.	16766.	1317.	1483485.	248472.	343256.	891658.
669.	18103.	1382.	1642010.	282181.	371370.	988430.
670.	19541.	1457.	1809841.	320679.	400309.	1088896.
671.	21016.	1515.	1993789.	368469.	430155.	1194704.
672.	22552.	1534.	2205085.	436297.	460835.	1307454.
673.	24091.	1540.	2421311.	504021.	492125.	1420834.
674.	25631.	1540.	2646079.	574808.	524172.	1537113.
675.	27171.	1540.	2882994.	652614.	557109.	1658466.
676.	28711.	1540.	3132270.	737862.	590929.	1784930.

***** WSPI MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 23.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	648.0	0.0	0.0							
LOW GRND	654.0	380.0	288.3	0.00	7.27	7.27				99.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	654.0	380.0	288.3	0.00	7.27	7.27				99.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	658.1	3519.0	2670.0	0.00	7.35	55.05	2670.00	652.7	0.00027	922.3
2	662.3	7521.3	4270.0	0.00	7.35	58.22	4270.00	654.6	0.00007	975.5
3	664.5	9703.6	7190.0	0.00	7.35	59.86	7190.00	655.1	0.00009	1002.8
4	665.1	10256.6	8270.0	0.00	7.35	60.26	8270.00	655.3	0.00010	1009.6
5	666.7	11921.4	11250.0	0.00	7.35	61.47	11250.00	655.7	0.00012	1029.9

SEGMENT TABLE FOR SECTION 23.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	479.	1109.	1082.
2670.	VELOCITY FPS	1.02	0.62	1.41	0.55
2	DISCHARGE CFS	4270.	832.	1173.	2265.
4270.	VELOCITY FPS	0.66	0.49	0.97	0.49
3	DISCHARGE CFS	7190.	1430.	1767.	3993.
7190.	VELOCITY FPS	0.84	0.65	1.24	0.66
4	DISCHARGE CFS	8270.	1652.	1986.	4632.
8270.	VELOCITY FPS	0.91	0.70	1.34	0.72
5	DISCHARGE CFS	11250.	2275.	2552.	6424.
11250.	VELOCITY FPS	1.05	0.82	1.55	0.86
1	ELEV 658.1 KD	163220.	29238.	68564.	65419.
2	ELEV 662.3 KD	509128.	99209.	140140.	269780.
3	ELEV 664.5 KD	753641.	149833.	185343.	418466.
4	ELEV 665.1 KD	819990.	163744.	197299.	458947.
5	ELEV 666.7 KD	1033559.	208907.	234762.	589888.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 23.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
648.00	0.					
649.	39.	42.	822.	1.	820.	1.
650.	84.	49.	2647.	1.	2645.	1.
651.	139.	61.	5281.	1.	5278.	1.
652.	208.	74.	9047.	1.	9044.	1.
653.	288.	86.	14071.	1.	14069.	1.
654.	380.	99.	20481.	1.	20479.	1.
655.	930.	627.	36171.	2179.	29946.	2454.
656.	1663.	820.	63014.	8478.	41100.	12449.
657.	2533.	905.	104066.	17228.	53612.	32404.
658.	3446.	921.	158765.	28256.	67412.	62648.
659.	4375.	935.	224083.	41351.	82424.	99913.
660.	5315.	947.	300012.	56642.	98650.	144506.
661.	6268.	959.	385556.	73967.	116027.	195473.
662.	7232.	972.	480255.	93280.	134514.	252461.
663.	8211.	984.	582816.	114351.	154024.	314369.
664.	9204.	997.	693844.	137357.	174578.	381785.
665.	10206.	1009.	813900.	162448.	196192.	455183.
666.	11219.	1021.	942492.	189547.	218827.	534118.
667.	12249.	1034.	1077805.	218326.	242364.	617053.
668.	13302.	1078.	1206727.	233930.	266888.	705446.
669.	14400.	1150.	1332315.	240819.	292369.	799007.
670.	15613.	1245.	1469005.	253173.	318738.	896883.
671.	16900.	1323.	1625036.	279252.	346022.	999648.
672.	18236.	1389.	1798857.	316966.	374236.	1107655.
673.	19685.	1464.	1982907.	360261.	403254.	1219232.
674.	21170.	1517.	2187284.	415865.	433179.	1337617.
675.	22706.	1536.	2419808.	492103.	463955.	1463356.
676.	24245.	1540.	2656235.	566676.	495288.	1588919.
677.	25785.	1540.	2903290.	645965.	527425.	1718480.
678.	27325.	1540.	3163769.	733086.	560450.	1853674.
679.	28865.	1540.	3437916.	828512.	594358.	1994542.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 23.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	654.0	0.0	0.0							
LOW GRND	658.0	298.0	307.8	0.00	10.02	10.02				89.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	658.0	298.0	307.8	0.00	10.02	10.02				89.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	661.3	2585.0	2670.0	0.00	10.02	92.77	2670.00	657.7	0.00071	878.5
2	663.8	4777.7	4270.0	0.00	10.02	97.32	4270.00	658.9	0.00031	921.6
3	665.9	6792.1	7190.0	0.00	10.02	98.96	7190.00	659.5	0.00030	937.1
4	666.5	7356.6	8270.0	0.00	10.02	99.36	8270.00	659.6	0.00031	940.9
5	668.2	8913.9	11250.0	0.00	10.02	101.27	11250.00	660.1	0.00032	958.9

SEGMENT TABLE FOR SECTION 23.9

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	857.	1217.	596.
2670.	VELOCITY FPS	1.52	0.67	2.05	0.84
2	DISCHARGE CFS	4270.	1889.	1371.	1010.
4270.	VELOCITY FPS	1.13	0.70	1.69	0.80
3	DISCHARGE CFS	7190.	3561.	1923.	1707.
7190.	VELOCITY FPS	1.26	0.89	1.91	0.97
4	DISCHARGE CFS	8270.	4180.	2127.	1963.
8270.	VELOCITY FPS	1.33	0.95	2.01	1.03
5	DISCHARGE CFS	11250.	5949.	2676.	2625.
11250.	VELOCITY FPS	1.46	1.10	2.22	1.14
1	ELEV 661.3 KD	99954.	31174.	46502.	22278.
2	ELEV 663.8 KD	242796.	107348.	78027.	57421.
3	ELEV 665.9 KD	415860.	205853.	111289.	98718.
4	ELEV 666.5 KD	470227.	237278.	121319.	111630.
5	ELEV 668.2 KD	632360.	334173.	150587.	147600.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 23.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
654.00	0.					
655.	64.	67.	1359.	1.	1357.	1.
656.	135.	74.	4405.	1.	4402.	1.
657.	213.	82.	8865.	1.	8863.	1.
658.	298.	89.	14682.	1.	14679.	1.
659.	739.	564.	27022.	1008.	22677.	2541.
660.	1427.	845.	49139.	7834.	32045.	9260.
661.	2287.	870.	85681.	24155.	42632.	18575.
662.	3168.	893.	133387.	48206.	54410.	30576.
663.	4071.	910.	191349.	79061.	67309.	44851.
664.	4988.	924.	258770.	116142.	81283.	61249.
665.	5916.	931.	335657.	159644.	96289.	79640.
666.	6849.	937.	421522.	209161.	112304.	100056.
667.	7791.	944.	514704.	263217.	129274.	122147.
668.	8739.	956.	613453.	322570.	147191.	143606.
669.	9707.	980.	716126.	387058.	166030.	162922.
670.	10704.	1013.	823463.	456348.	185765.	181254.
671.	11727.	1050.	937557.	530581.	206388.	200587.
672.	12803.	1079.	1064550.	608717.	227850.	227936.
673.	13887.	1090.	1200345.	688649.	250086.	260858.
674.	14977.	1090.	1345060.	770863.	273101.	299187.
675.	16067.	1090.	1498872.	858155.	296955.	340860.
676.	17157.	1090.	1661881.	950576.	321638.	385989.

Byron Road

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 24.0 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	654.6	0.0	0.0							
1	661.6	478.0	2670.0	0.00	0.17	0.17	2670.00	658.5	0.00650	74.0
2	663.8	642.2	4270.0	0.00	0.17	0.17	4270.00	659.8	0.00664	74.1
LOW GRND	664.9	726.0	5162.2	0.00	0.17	0.17				74.1
BANK FULL	664.9	726.0	5162.2	0.00	0.17	0.17				74.1
3	665.7	916.4	7190.0	0.00	0.17	0.59	7190.00	661.7	0.00891	258.9
4	666.3	1113.9	8270.0	0.00	0.17	0.96	8270.00	662.4	0.00876	417.0
5	668.1	2019.0	11250.0	0.00	0.17	1.34	11250.00	664.0	0.00468	585.5

SEGMENT TABLE FOR SECTION 24.0

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2670.	0.	2670.	0.
2670.	VELOCITY FPS	5.59	0.00	5.59	0.00
2	DISCHARGE CFS	4270.	0.	4270.	0.
4270.	VELOCITY FPS	6.65	0.00	6.65	0.00
3	DISCHARGE CFS	7190.	133.	6808.	249.
7190.	VELOCITY FPS	8.51	2.92	8.64	3.01
4	DISCHARGE CFS	8270.	298.	7401.	571.
8270.	VELOCITY FPS	8.52	3.08	8.90	3.07
5	DISCHARGE CFS	11250.	1541.	6815.	2893.
11250.	VELOCITY FPS	6.25	3.71	7.09	4.51
1	ELEV 661.6 KD	33118.	1.	33116.	1.
2	ELEV 663.8 KD	52408.	1.	52406.	1.
3	ELEV 665.7 KD	73316.	376.	72521.	419.
4	ELEV 666.3 KD	85299.	2221.	79306.	3773.
5	ELEV 668.1 KD	162490.	21013.	101128.	40349.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 24.0

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
654.60	0.					
655.	9.	36.	77.	1.	75.	1.
656.	67.	74.	1364.	1.	1361.	1.
657.	141.	74.	4674.	1.	4672.	1.
658.	215.	74.	9259.	1.	9256.	1.
659.	289.	74.	14914.	1.	14912.	1.
660.	363.	74.	21455.	1.	21453.	1.
661.	437.	74.	28787.	1.	28785.	1.
662.	511.	74.	36784.	1.	36782.	1.
663.	585.	74.	45394.	1.	45392.	1.
664.	659.	74.	54565.	1.	54563.	1.
665.	735.	91.	64354.	4.	64339.	3.
666.	1005.	330.	81485.	843.	75530.	1138.
667.	1429.	503.	111353.	6890.	87437.	13461.
668.	1968.	579.	159516.	19703.	100032.	38160.
669.	2579.	654.	225365.	40516.	113297.	71046.
670.	3278.	728.	308544.	69664.	127208.	110035.
671.	4049.	802.	410071.	109598.	141758.	157090.
672.	4882.	877.	531727.	161887.	156937.	212087.
673.	5789.	951.	673851.	226934.	172726.	273811.
674.	6789.	1026.	836161.	304756.	189109.	341267.
675.	7842.	1074.	1030572.	404539.	206084.	418478.
676.	8936.	1098.	1263708.	532834.	223643.	506768.
677.	10035.	1100.	1484272.	647418.	241709.	588474.
678.	11135.	1100.	1724775.	774216.	260339.	676455.
679.	12235.	1100.	1991687.	918941.	279535.	773068.
680.	13335.	1100.	2286651.	1083238.	299290.	878756.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 24.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	656.8	0.0	0.0							
LOW GRND	660.0	368.0	732.4	0.00	10.97	10.97				130.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	660.0	368.0	732.4	0.00	10.97	10.97				130.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	664.6	1341.6	2670.0	0.00	10.97	24.31	2670.00	659.5	0.00068	320.9
2	666.7	2059.1	4270.0	0.00	10.97	26.37	4270.00	660.5	0.00062	348.1
3	669.2	2973.8	7190.0	0.00	10.97	28.71	7190.00	661.9	0.00067	379.0
4	669.9	3240.4	8270.0	0.00	10.97	29.36	8270.00	662.4	0.00071	387.6
5	671.5	3870.8	11250.0	0.00	10.97	30.83	11250.00	663.6	0.00082	407.0

SEGMENT TABLE FOR SECTION 24.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2670.	111.	2429.	130.
2670.	VELOCITY FPS	2.42	0.55	2.53	0.73
2	DISCHARGE CFS	4270.	404.	3529.	337.
4270.	VELOCITY FPS	2.62	0.83	2.85	1.01
3	DISCHARGE CFS	7190.	1022.	5450.	718.
7190.	VELOCITY FPS	3.10	1.16	3.48	1.37
4	DISCHARGE CFS	8270.	1262.	6150.	859.
8270.	VELOCITY FPS	3.28	1.25	3.71	1.49
5	DISCHARGE CFS	11250.	1967.	8030.	1253.
11250.	VELOCITY FPS	3.75	1.51	4.31	1.78
1	ELEV 664.6 KD	102275.	4182.	93129.	4964.
2	ELEV 666.7 KD	172072.	16209.	142331.	13533.
3	ELEV 669.2 KD	276868.	39102.	210203.	27563.
4	ELEV 669.9 KD	310447.	47289.	230943.	32214.
5	ELEV 671.5 KD	393014.	68540.	280761.	43713.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 24.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
656.80	0.					
657.	20.	102.	178.	1.	176.	1.
658.	127.	111.	3539.	1.	3537.	1.
659.	243.	121.	9890.	1.	9888.	1.
660.	368.	130.	18811.	1.	18809.	1.
661.	511.	152.	31247.	21.	31123.	68.
662.	673.	175.	46515.	147.	45845.	523.
663.	887.	245.	64897.	550.	62723.	1527.
664.	1167.	301.	87571.	2232.	81659.	3368.
665.	1486.	327.	115130.	5945.	102552.	6369.
666.	1819.	340.	147209.	11409.	125306.	10305.
667.	2165.	352.	183318.	18371.	149846.	14956.
668.	2523.	364.	223321.	26802.	176108.	20260.
669.	2893.	376.	267185.	36823.	204048.	26239.
670.	3274.	389.	314842.	48399.	233610.	32832.
671.	3670.	401.	366201.	61442.	264737.	39953.
672.	4078.	413.	421322.	76152.	297407.	47669.
673.	4498.	425.	480185.	92536.	331580.	55946.
674.	4928.	438.	542789.	110730.	367234.	64771.
675.	5372.	450.	608937.	130671.	404323.	73884.
676.	5832.	465.	677920.	152598.	442822.	82394.
677.	6304.	480.	750488.	176502.	482717.	91189.
678.	6788.	495.	826996.	202329.	523981.	100685.
679.	7295.	510.	907656.	229904.	566571.	111064.
680.	7809.	521.	994549.	261003.	610496.	122892.
681.	8333.	524.	1089487.	296785.	655723.	136882.
682.	8858.	525.	1186351.	332058.	702155.	150867.
683.	9383.	525.	1286823.	368909.	749845.	165400.
684.	9908.	525.	1391560.	408236.	798807.	180710.
685.	10433.	525.	1500575.	450106.	849023.	196808.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 24.7 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	659.9	0.0	0.0							
LOW GRND	664.0	260.9	568.4	0.00	8.45	8.45				75.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	664.0	260.9	568.4	0.00	8.45	8.45				75.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	668.7	1225.4	2670.0	0.00	8.45	34.32	2670.00	663.9	0.00082	332.2
2	670.6	2222.7	4270.0	0.00	8.45	79.15	4270.00	665.6	0.00084	766.1
3	672.7	4011.6	7190.0	0.00	8.45	90.70	7190.00	667.0	0.00069	878.0
4	673.3	4554.8	8270.0	0.00	8.45	91.33	8270.00	667.3	0.00065	884.1
5	674.7	5824.6	11250.0	0.00	8.45	92.79	11250.00	668.2	0.00063	898.2

SEGMENT TABLE FOR SECTION 24.7

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2670.	517.	2136.	17.
2670.	VELOCITY FPS	3.13	0.88	3.47	0.81
2	DISCHARGE CFS	4270.	1177.	3050.	43.
4270.	VELOCITY FPS	3.45	0.83	4.04	1.03
3	DISCHARGE CFS	7190.	3371.	3739.	80.
7190.	VELOCITY FPS	3.09	1.11	4.10	1.11
4	DISCHARGE CFS	8270.	4189.	3987.	93.
8270.	VELOCITY FPS	3.02	1.19	4.16	1.13
5	DISCHARGE CFS	11250.	6471.	4645.	134.
11250.	VELOCITY FPS	3.01	1.39	4.36	1.22
1	ELEV 668.7 KD	93158.	17918.	74641.	599.
2	ELEV 670.6 KD	146984.	40377.	105146.	1460.
3	ELEV 672.7 KD	273181.	126370.	143778.	3032.
4	ELEV 673.3 KD	323064.	163244.	156172.	3648.
5	ELEV 674.7 KD	449104.	257530.	186241.	5332.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 24.7

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
659.90	0.					
660.	6.	28.	39.	1.	39.	1.
661.	63.	59.	1996.	1.	1994.	1.
662.	124.	62.	5863.	1.	5861.	1.
663.	189.	68.	11114.	1.	11112.	1.
664.	261.	75.	17851.	1.	17849.	1.
665.	366.	129.	27528.	233.	27180.	11.
666.	520.	184.	39928.	1810.	38058.	61.
667.	735.	238.	55911.	5273.	50316.	176.
668.	1000.	293.	75877.	11425.	63924.	382.
669.	1320.	347.	100411.	20770.	78803.	695.
670.	1764.	484.	129240.	33152.	94902.	1132.
671.	2548.	861.	163954.	49182.	112173.	1708.
672.	3413.	871.	226107.	93073.	130591.	2443.
673.	4290.	881.	298958.	144878.	150094.	3340.
674.	5177.	891.	382446.	206706.	170674.	4423.
675.	6073.	901.	476075.	277579.	192302.	5705.
676.	6979.	911.	579220.	356695.	214950.	7196.
677.	7893.	921.	692333.	444809.	238607.	8916.
678.	8821.	931.	812694.	538318.	263220.	10858.
679.	9757.	941.	942399.	640282.	288801.	13052.
680.	10701.	950.	1081057.	750118.	315329.	15509.
681.	11656.	960.	1227482.	866367.	342775.	18231.
682.	12624.	970.	1381475.	988898.	371122.	21227.
683.	13597.	980.	1544609.	1119622.	400379.	24528.
684.	14583.	990.	1714734.	1255965.	430506.	28121.
685.	15584.	1011.	1883573.	1390525.	461504.	31472.
686.	16595.	1038.	2052944.	1524930.	493369.	34644.
687.	17663.	1076.	2221676.	1657392.	526061.	38177.
688.	18758.	1114.	2398688.	1796790.	559597.	42245.
689.	19891.	1152.	2584916.	1943790.	593956.	47109.
690.	21055.	1175.	2796648.	2113809.	629128.	53478.
691.	22242.	1187.	3030809.	2304274.	665111.	61316.
692.	23431.	1190.	3272851.	2500531.	701820.	68904.
693.	24621.	1190.	3525006.	2705506.	739311.	76857.
694.	25811.	1190.	3788212.	2920427.	777599.	85448.
695.	27001.	1190.	4062604.	3145460.	816677.	94710.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 24.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	662.0	0.0	0.0							
LOW GRND	664.0	135.0	238.3	0.00	5.66	5.66				75.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	664.0	135.0	238.3	0.00	5.66	5.66				75.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	670.6	1512.3	2670.0	0.00	5.66	24.29	2670.00	665.7	0.00057	341.4
2	672.5	2251.4	4270.0	0.00	5.66	29.88	4270.00	666.6	0.00058	419.8
3	674.8	3315.9	7190.0	0.00	5.66	36.43	7190.00	667.8	0.00066	511.9
4	675.5	3674.2	8270.0	0.00	5.66	38.38	8270.00	668.2	0.00069	539.3
5	677.1	4577.7	11250.0	0.00	5.66	43.04	11250.00	669.0	0.00075	604.7

SEGMENT TABLE FOR SECTION 24.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2670.	345.	1875.	451.
2670.	VELOCITY FPS	2.55	0.90	2.98	0.90
2	DISCHARGE CFS	4270.	690.	2678.	902.
4270.	VELOCITY FPS	2.82	1.08	3.45	1.08
3	DISCHARGE CFS	7190.	1387.	3990.	1813.
7190.	VELOCITY FPS	3.27	1.35	4.21	1.35
4	DISCHARGE CFS	8270.	1662.	4436.	2172.
8270.	VELOCITY FPS	3.41	1.43	4.45	1.43
5	DISCHARGE CFS	11250.	2451.	5606.	3193.
11250.	VELOCITY FPS	3.73	1.63	5.02	1.63
1	ELEV 670.6 KD	111673.	14338.	78599.	18736.
2	ELEV 672.5 KD	177088.	28561.	111207.	37321.
3	ELEV 674.8 KD	278854.	53684.	155021.	70149.
4	ELEV 675.5 KD	314855.	63150.	169185.	82519.
5	ELEV 677.1 KD	409502.	89163.	204149.	116191.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 24.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
662.00	0.					
663.	64.	67.	1859.	1.	1857.	1.
664.	135.	75.	6030.	1.	6028.	1.
665.	230.	115.	12807.	94.	12591.	122.
666.	367.	156.	22337.	586.	20943.	765.
667.	542.	196.	34965.	1753.	30922.	2290.
668.	760.	236.	51126.	3763.	42387.	4917.
669.	1018.	277.	71089.	6828.	55258.	8922.
670.	1316.	317.	95197.	11105.	69458.	14511.
671.	1654.	357.	123723.	16765.	84931.	21907.
672.	2031.	398.	156982.	23948.	101624.	31293.
673.	2449.	438.	195259.	32796.	119493.	42855.
674.	2910.	479.	238855.	43434.	138501.	56756.
675.	3408.	519.	287979.	56020.	158617.	73202.
676.	3945.	559.	342913.	70672.	179810.	92347.
677.	4520.	600.	403917.	87511.	202053.	114352.
678.	5146.	655.	467340.	106616.	225319.	135342.
679.	5876.	770.	528437.	128135.	249588.	150556.
680.	6697.	882.	599104.	150392.	274844.	173535.
681.	7613.	967.	687656.	171762.	301066.	214829.
682.	8626.	1027.	793498.	198696.	328229.	266111.
683.	9679.	1076.	912822.	232451.	356326.	323546.
684.	10772.	1118.	1045372.	272834.	385341.	386960.
685.	11915.	1160.	1187491.	316262.	415255.	455536.
686.	13099.	1202.	1339876.	363179.	446057.	530190.
687.	14309.	1244.	1503096.	413871.	477739.	611486.
688.	15585.	1280.	1679267.	470907.	510279.	697643.
689.	16880.	1312.	1869870.	534246.	543675.	791597.
690.	18203.	1335.	2076630.	605072.	577912.	893427.
691.	19540.	1340.	2290425.	672620.	612956.	1001361.
692.	20880.	1340.	2515871.	742419.	648820.	1117258.
693.	22220.	1340.	2755010.	816813.	685502.	1242099.
694.	23560.	1340.	3008196.	895940.	722996.	1376254.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.38	1.60	0.03	0.65*	0.00	1.62	3.59	1.79	1.30	2.13	1746.92	2537.44	665.02	0.00
2	0.32	1.88	0.03	0.59*	0.00	1.90	4.70	1.67	1.21	2.23	2541.45	4210.21	666.20	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

Easton Rd @ New Lothrop

ROAD SECTION 25.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	661.40	0.0	0.00	661.40	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	671.14	2670.0	0.48	670.66	2670.00	2670.0	743.7	0.0	0.0	0.0	0.0	0.0
2	673.49	4270.0	0.88	672.61	4270.00	4270.0	907.6	0.0	0.0	0.0	0.0	0.0
3	676.29	7190.0	1.38	674.91	7190.00	7190.0	955.1	0.0	0.0	0.0	0.0	0.0
4	677.41	8270.0	1.82	675.59	8270.00	8239.4	955.1	0.0	0.0	30.6	16.3	237.6
5	679.04	11250.0	1.86	677.18	11250.00	8288.9	955.1	0.0	0.0	2961.1	836.9	698.4

MIN ROAD ELEVATION = 677.20 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 673.40 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 25.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	661.9	0.0	0.0							
LOW GRND	668.0	697.4	830.5	0.00	1.03	1.03				178.6
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	668.0	697.4	830.5	0.00	1.03	1.03				178.6
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	671.2	2242.1	2670.0	0.00	1.11	3.81	2670.00	665.4	0.00048	664.2
2	673.5	3880.3	4270.0	0.00	1.17	4.15	4270.00	666.4	0.00033	723.2
3	676.3	5935.9	7190.0	0.00	1.25	4.31	7190.00	667.7	0.00029	751.8
4	677.4	6784.1	8270.0	0.00	1.28	4.38	8270.00	668.6	0.00026	763.2
5	679.1	8048.2	11250.0	0.00	1.32	4.48	11250.00	669.6	0.00029	780.0

SEGMENT TABLE FOR SECTION 25.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2670.	0.	2219.	451.
2670.	VELOCITY FPS	1.58	0.00	1.71	0.48
2	DISCHARGE CFS	4270.	0.	2938.	1332.
4270.	VELOCITY FPS	1.44	0.00	1.67	0.63
3	DISCHARGE CFS	7190.	0.	4271.	2919.
7190.	VELOCITY FPS	1.50	0.00	1.82	0.81
4	DISCHARGE CFS	8270.	0.	4712.	3558.
8270.	VELOCITY FPS	1.48	0.00	1.82	0.85
5	DISCHARGE CFS	11250.	0.	6106.	5144.
11250.	VELOCITY FPS	1.67	0.00	2.06	1.01

1	ELEV	671.2	KD	121434.	1.	101532.	19901.
2	ELEV	673.5	KD	235378.	1.	162906.	72471.
3	ELEV	676.3	KD	425028.	1.	252888.	172139.
4	ELEV	677.4	KD	515211.	1.	293956.	221254.
5	ELEV	679.1	KD	661509.	1.	359199.	302309.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 25.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
661.90	0.					
662.	5.	27.	29.	1.	28.	1.
663.	68.	73.	1430.	1.	1427.	1.
664.	152.	94.	4606.	1.	4604.	1.
665.	257.	115.	9667.	1.	9665.	1.
666.	383.	136.	16816.	1.	16814.	1.
667.	531.	158.	26286.	1.	26284.	1.
668.	697.	179.	38247.	1.	38245.	1.
669.	981.	388.	56078.	1.	55205.	872.
670.	1474.	598.	80249.	1.	74709.	5539.
671.	2099.	653.	113793.	1.	96667.	17125.
672.	2780.	707.	155066.	1.	121014.	34050.
673.	3492.	718.	205919.	1.	147706.	58213.
674.	4216.	728.	263816.	1.	176667.	86882.
675.	4950.	738.	328740.	1.	207943.	120526.
676.	5693.	748.	400423.	1.	241505.	158710.
677.	6446.	759.	478633.	1.	277335.	201165.
678.	7210.	769.	563145.	1.	315419.	247653.
679.	7984.	779.	653674.	1.	355741.	297855.
680.	8767.	789.	750492.	1.	398336.	352156.
681.	9571.	810.	858042.	38.	448443.	409448.
682.	10395.	838.	972326.	344.	501078.	470735.
683.	11245.	874.	1093239.	1147.	556126.	535792.
684.	12145.	917.	1220526.	2882.	613274.	603967.
685.	13085.	960.	1355033.	6041.	672697.	675714.
686.	14054.	1003.	1497012.	11196.	734510.	751305.
687.	15113.	1073.	1645599.	17418.	798098.	829461.
688.	16208.	1129.	1803273.	26922.	864017.	911426.
689.	17358.	1162.	1970907.	41589.	932011.	996682.
690.	18533.	1176.	2150123.	59501.	1001877.	1087135.
691.	19714.	1185.	2339289.	82819.	1074070.	1182400.
692.	20899.	1185.	2531136.	100298.	1146435.	1277077.
693.	22084.	1185.	2731668.	120709.	1221070.	1375865.
694.	23269.	1185.	2940981.	144424.	1297969.	1478804.

***** WSP2 MICROCOMPUTER TEST VERSION *****

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----------------------- LIST OF INPUT DATA WITH LIMITED EDITING-----------------------
TITLE     DISCHARHE FROM PORTER CREEK TO ONION CREEK
CHANGE    DISCHARGE
DISCHARGE -1.       1760.     2520.     5480.     6220.     8260.
END
SEGMENT   25.2      1         N         -30.
N VALUE   .110
SEGMENT   25.2      2         C         75.
N VALUE   .067
SEGMENT   25.2      3         N         210.
N VALUE   .110
SECTION   25.2
          -1000.    692.      -975.     690.      -875.     688.
          -610.     686.      -30.      668.      -25.      663.9
          0.        663.9     25.       663.9     50.       672.
          75.       674.      210.      692.
ENDTABLE
SEGMENT   25.5      1         N         -70.                            173
N VALUE   .110                                                          174
SEGMENT   25.5      2         C         75.                             175
N VALUE   .067                                                          176
SEGMENT   25.5      3         N         260.                            177
N VALUE   .110                                                          178
SECTION   25.5                                                          179
          -800      694.      -400.     692.      -375.     690.        180
          -320.     686.      -240.     676.      -155.     674.        181
          -70.      672.      -35.      666.      0.        666.        182
          35.       666.      75.       672.      85.       674.        183
          260.      694.                                                184
ENDTABLE                                                                185
COMPUTE   25.2      25.5      25.1
-----------------------------END OF DATA LISTING-----------------------------
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COMPUTE 25.2 25.5 25.1

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 25.2 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	663.9	0.0	0.0							
LOW GRND	668.0	241.2	430.5	0.00	2.72	2.72				67.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	668.0	241.2	430.5	0.00	2.72	2.72				67.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	672.8	986.0	1760.0	0.00	3.63	8.46	1760.00	667.1	0.00095	245.6
2	674.8	1553.8	2520.0	0.00	4.22	11.36	2520.00	667.9	0.00074	329.8
3	677.8	2723.1	5480.0	0.00	4.22	15.46	5480.00	670.5	0.00088	448.8
4	678.7	3169.2	6220.0	0.00	4.22	16.77	6220.00	670.9	0.00078	487.0
5	680.4	4022.1	8260.0	0.00	4.22	19.00	8260.00	671.8	0.00078	551.7

SEGMENT TABLE FOR SECTION 25.2

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1760.	309.	1451.	0.
1760.	VELOCITY FPS	2.21	0.82	2.39	0.00
2	DISCHARGE CFS	2520.	669.	1850.	1.
2520.	VELOCITY FPS	2.03	0.90	2.30	0.25
3	DISCHARGE CFS	5480.	1937.	3506.	37.
5480.	VELOCITY FPS	2.62	1.25	3.13	0.68
4	DISCHARGE CFS	6220.	2338.	3820.	62.
6220.	VELOCITY FPS	2.58	1.25	3.13	0.73
5	DISCHARGE CFS	8260.	3397.	4726.	137.
8260.	VELOCITY FPS	2.73	1.37	3.40	0.89
1	ELEV 672.8 KD	56857.	9754.	47101.	1.
2	ELEV 674.8 KD	92643.	24465.	68161.	17.
3	ELEV 677.8 KD	184197.	64863.	118163.	1172.
4	ELEV 678.7 KD	221970.	83318.	136480.	2172.
5	ELEV 680.4 KD	295926.	121349.	169824.	4753.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 25.2

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
663.90	0.					
664.	5.	25.	28.	1.	28.	1.
665.	58.	55.	1315.	1.	1313.	1.
666.	115.	59.	3905.	1.	3903.	1.
667.	176.	63.	7571.	1.	7569.	1.
668.	241.	68.	12238.	1.	12235.	1.
669.	326.	103.	18223.	148.	18074.	1.
670.	449.	138.	25865.	918.	24892.	1.
671.	606.	174.	35488.	2734.	32671.	1.
672.	799.	211.	46782.	5907.	40731.	1.
673.	1031.	254.	59381.	10761.	48464.	1.
674.	1301.	298.	74465.	17605.	56859.	1.
675.	1620.	338.	97903.	26557.	71312.	34.
676.	1982.	378.	125143.	37859.	86992.	201.
677.	2382.	417.	156518.	51823.	103937.	616.
678.	2820.	457.	192256.	68658.	122089.	1352.
679.	3296.	497.	232590.	88570.	141405.	2479.
680.	3811.	537.	277743.	111749.	161841.	4055.
681.	4368.	576.	327925.	138349.	183344.	6121.
682.	4969.	616.	383354.	168537.	205879.	8727.
683.	5603.	656.	444275.	202637.	229495.	11976.
684.	6271.	696.	510888.	240817.	254157.	15914.
685.	6994.	735.	583339.	282973.	279717.	20475.
686.	7772.	813.	650982.	318757.	306281.	25816.
687.	8587.	915.	715085.	349167.	333879.	32039.
688.	9604.	1024.	796600.	395142.	362299.	38972.
689.	10669.	1111.	892389.	453393.	391716.	46876.
690.	11804.	1163.	1010001.	531993.	422044.	55708.
691.	12983.	1190.	1145239.	625829.	453227.	65452.
692.	14177.	1206.	1294714.	732421.	485349.	76610.
693.	15387.	1209.	1457257.	847819.	518285.	90342.
694.	16596.	1210.	1624412.	966376.	551959.	104453.
695.	17806.	1210.	1789257.	1079971.	586185.	117709.
696.	19016.	1210.	1964813.	1202682.	621350.	132147.
697.	20226.	1210.	2151407.	1334919.	657448.	147829.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 25.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	666.0	0.0	0.0							
LOW GRND	672.0	645.0	1146.2	0.00	4.99	4.99				145.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	672.0	645.0	1146.2	0.00	4.99	4.99				145.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	673.8	990.4	1760.0	0.00	4.99	6.91	1760.00	668.5	0.00065	231.4
2	675.6	1480.2	2520.0	0.00	4.99	9.52	2520.00	669.1	0.00052	318.9
3	678.8	2622.0	5480.0	0.00	4.99	11.60	5480.00	670.9	0.00064	388.7
4	679.7	2978.9	6220.0	0.00	4.99	12.05	6220.00	671.3	0.00060	403.7
5	681.3	3668.9	8260.0	0.00	4.99	12.88	8260.00	672.4	0.00062	431.5

SEGMENT TABLE FOR SECTION 25.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	1760.	28.	1729.	3.
1760.	VELOCITY FPS	1.90	0.37	1.91	0.35
2	DISCHARGE CFS	2520.	140.	2363.	17.
2520.	VELOCITY FPS	1.97	0.50	2.03	0.45
3	DISCHARGE CFS	5480.	822.	4538.	120.
5480.	VELOCITY FPS	2.57	0.98	2.79	0.76
4	DISCHARGE CFS	6220.	1067.	4984.	169.
6220.	VELOCITY FPS	2.59	1.05	2.84	0.81
5	DISCHARGE CFS	8260.	1680.	6280.	301.
8260.	VELOCITY FPS	2.81	1.24	3.15	0.95
1	ELEV 673.8 KD	68944.	874.	67970.	100.
2	ELEV 675.6 KD	109922.	5870.	103347.	706.
3	ELEV 678.8 KD	217138.	32528.	179874.	4736.
4	ELEV 679.7 KD	254631.	43390.	204435.	6806.
5	ELEV 681.3 KD	332800.	67570.	253170.	12060.

***** WSP2 MICROCOMPUTER TEST VERSION *****

K.D TABLE FOR CROSS SECTION 25.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
666.00	0.					
667.	77.	82.	1606.	1.	1604.	1.
668.	165.	95.	5279.	1.	5277.	1.
669.	266.	107.	10783.	1.	10781.	1.
670.	381.	120.	18127.	1.	18125.	1.
671.	507.	132.	27358.	1.	27356.	1.
672.	645.	145.	38545.	1.	38543.	1.
673.	819.	192.	54260.	133.	53960.	18.
674.	1036.	241.	72980.	1153.	71504.	131.
675.	1302.	291.	95133.	3545.	90959.	411.
676.	1617.	334.	121403.	7925.	112236.	972.
677.	1966.	359.	152325.	14786.	135242.	1905.
678.	2334.	376.	187626.	24105.	159962.	3305.
679.	2717.	393.	226943.	35260.	186321.	5238.
680.	3117.	409.	270230.	48195.	214265.	7770.
681.	3536.	426.	317376.	62640.	243696.	10923.
682.	3973.	443.	368458.	78816.	274622.	14786.
683.	4424.	460.	423577.	96901.	307053.	19456.
684.	4889.	476.	482730.	116807.	340939.	24983.
685.	5377.	493.	545783.	138152.	376154.	31316.
686.	5880.	512.	612191.	160644.	412775.	38619.
687.	6399.	532.	681966.	184188.	450765.	46934.
688.	6945.	555.	755261.	208827.	490048.	56240.
689.	7513.	577.	832986.	235518.	530645.	66644.
690.	8095.	600.	915134.	264320.	572567.	78247.
691.	8712.	621.	1002773.	295992.	615679.	90908.
692.	9376.	699.	1081484.	316110.	660081.	104867.
693.	10112.	861.	1142171.	316111.	705712.	120096.
694.	11077.	967.	1222636.	331774.	752520.	138050.
695.	12100.	1060.	1310619.	351779.	800588.	158252.
696.	13160.	1060.	1445975.	409215.	849464.	177479.
697.	14220.	1060.	1590182.	473676.	899574.	198294.
698.	15280.	1060.	1743499.	545750.	950908.	220772.
699.	16340.	1060.	1906190.	626056.	1003456.	244988.

***** WSP2 MICROCOMPUTER TEST VERSION *****

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----------------------- LIST OF INPUT DATA WITH LIMITED EDITING-----------------------
TITLE     DISCHARGE FROM ONION CREEK TO STRUCTURE 2
CHANGE    DISCHARGE
DISCHARGE -1.       1520.     2230.     5020.     5670.     7500.
END
SEGMENT   25.9      1         N         -70.                          186
N VALUE   .110                                                        187
SEGMENT   25.9      2         C         45.                           188
N VALUE   .067                                                        189
SEGMENT   25.9      3         N         450.                          190
N VALUE   .110                                                        191
SECTION   25.9                                                        192
          -360.     696.      -260.     690.      -215.     686.      193
          -140.     682.      -70.      680.      -20.      670.7     194
          0.        670.7     20.       670.7     45.       680.      195
          375.      682.      450.      700.                          196
ENDTABLE                                                              197
BPR       26.0      A         1.                                      198
GIRDER    684.8     684.4     0.        .8        2.7                 199
          -20.      684.9     -20.      684.4     20.       684.4     200
          20.       685.4                                             201
ENDTABLE                                                              202
SECTION   26.0                                                        203
          -1300.    700.      -950.     695.      -400.     688.5     204
          -350.     686.7     -300.     685.3     -250.     684.5     205
          -200.     683.8     -150.     683.8     -100.     684.      206
          -20.0     684.9     -19.      674.8     0.        671.2     207
          19.       671.5     20.       685.4     80.       688.9     208
          350.      700.                                              209
ENDTABLE                                                              210
SEGMENT   26.9      1         N         -90.                          211
N VALUE   .110                                                        212
SEGMENT   26.9      2         C         35.                           213
N VALUE   .058                                                        214
SEGMENT   26.9      3         N         470.                          215
N VALUE   .110                                                        216
SECTION   26.9                                                        217
          -970.     708.      -600.     706.      -385.     704.      218
          -255.     702.      -170.     700.      -140.     698.      219
          -90.      696.      -35.      679.2     0.        679.2     220
          35.       679.2     320.      686.      430.      706.      221
          470.      708.                                              222
ENDTABLE                                                              223
COMPUTE   25.9      26.95     25.5                                    236
-----------------------------END OF DATA LISTING-----------------------------
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COMPUTE 25.9 26.95 25.5 236

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSPC MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 25.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	670.7	0.0	0.0							
1	678.7	575.3	1520.0	0.00	8.12	8.12	1520.00	673.9	0.00150	104.3
LOW GRND	680.0	720.7	2060.0	0.00	8.96	8.96				115.0
BANK FULL	680.0	720.7	2060.0	0.00	8.96	8.96				115.0
2	680.3	766.5	2230.0	0.00	8.96	11.75	2230.00	674.7	0.00147	176.5
3	683.5	2127.6	5020.0	0.00	8.96	36.50	5020.00	677.0	0.00134	548.3
4	684.0	2451.7	5670.0	0.00	8.96	37.40	5670.00	677.5	0.00125	561.8
5	685.3	3206.0	7500.0	0.00	8.96	39.36	7500.00	678.6	0.00118	591.3

SEGMENT TABLE FOR SECTION 25.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1520.	0.	1520.	0.
1520.	VELOCITY FPS	2.64	0.00	2.64	0.00
2	DISCHARGE CFS	2230.	0.	2228.	2.
2230.	VELOCITY FPS	2.95	0.18	2.95	0.18
3	DISCHARGE CFS	5020.	167.	4049.	804.
5020.	VELOCITY FPS	3.31	0.86	3.62	0.99
4	DISCHARGE CFS	5670.	230.	4349.	1091.
5670.	VELOCITY FPS	3.26	0.91	3.67	1.08
5	DISCHARGE CFS	7500.	440.	5138.	1922.
7500.	VELOCITY FPS	3.28	1.07	3.85	1.32
1	ELEV 678.7 KD	39310.	1.	39308.	1.
2	ELEV 680.3 KD	58072.	6.	58038.	28.
3	ELEV 683.5 KD	136116.	4245.	111305.	20566.
4	ELEV 684.0 KD	159989.	6457.	122878.	30654.
5	ELEV 685.3 KD	218058.	12644.	149868.	55546.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 25.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
670.70	0.					
671.	12.	42.	123.	1.	120.	1.
672.	59.	50.	1441.	1.	1438.	1.
673.	113.	59.	3881.	1.	3878.	1.
674.	176.	67.	7397.	1.	7395.	1.
675.	247.	75.	12010.	1.	12007.	1.
676.	326.	83.	17783.	1.	17781.	1.
677.	412.	91.	24757.	1.	24755.	1.
678.	507.	99.	33010.	1.	33007.	1.
679.	611.	107.	42613.	1.	42611.	1.
680.	721.	115.	53591.	1.	53589.	1.
681.	972.	315.	69956.	94.	68473.	442.
682.	1364.	468.	91673.	954.	84947.	4574.
683.	1879.	538.	121188.	3018.	102815.	14843.
684.	2427.	561.	158334.	6304.	122022.	30007.
685.	3001.	584.	201655.	10708.	142428.	48104.
686.	3599.	604.	251131.	16655.	164079.	69724.
687.	4212.	622.	307011.	24408.	187012.	95196.
688.	4838.	637.	369171.	34009.	211167.	123995.
689.	5487.	653.	436166.	44749.	236355.	154742.
690.	6149.	670.	508717.	56922.	262724.	188800.
691.	6826.	689.	586653.	70433.	290231.	225868.
692.	7527.	710.	669453.	85276.	318766.	265183.
693.	8249.	731.	757977.	102051.	348382.	307301.
694.	8984.	752.	852551.	120940.	379111.	352501.
695.	9752.	772.	952072.	141753.	410746.	399344.
696.	10531.	788.	1059329.	166357.	443464.	449247.
697.	11325.	797.	1175178.	196224.	477178.	501612.
698.	12126.	802.	1296929.	228671.	511816.	556032.
699.	12928.	806.	1425759.	264633.	547523.	613601.
700.	13737.	808.	1559645.	301043.	584062.	674213.
701.	14546.	810.	1699000.	339581.	621552.	737518.
702.	15356.	810.	1837266.	375419.	659544.	800334.
703.	16166.	810.	1981901.	413730.	698552.	866271.
704.	16976.	810.	2132988.	454603.	738573.	935379.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAH	SIGMA	DHS	COEFK	VNZ FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.56	0.89	0.00	0.00	0.00	0.89	5.60	1.00	1.00	1.00	581.39	631.22	675.84	0.00
2	0.51	1.11	0.00	0.00	0.00	1.11	6.66	1.38	1.19	1.03	775.37	1071.82	676.91	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

Allen Rd

***** WSPC MICROCOMPUTER TEST VERSION *****

ROAD SECTION 26.0

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	671.20	0.0	0.00	671.20	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	679.69	1520.0	0.46	679.23	1520.00	1520.0	271.2	0.0	0.0	0.0	0.0	0.0
2	681.82	2230.0	0.96	680.86	2230.00	2230.0	334.9	0.0	0.0	0.0	0.0	0.0
3	685.50	5020.0	1.54	683.96	5020.00	3769.1	475.1	0.0	0.0	1250.9	362.1	329.0
4	685.96	5670.0	1.44	684.52	5670.00	3651.9	475.1	0.0	0.0	2018.1	519.8	353.4
5	687.04	7500.0	1.24	685.80	7500.00	3364.2	475.1	0.0	0.0	4135.8	931.6	407.7

MIN ROAD ELEVATION = 683.80 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 684.40 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 26.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	671.2	0.0	0.0							
1	679.8	643.7	1520.0	0.00	1.19	1.19	1520.00	674.4	0.00110	109.4
LOW GRND	680.5	720.7	1640.2	0.00	1.25	1.25				115.0
BANK FULL	680.5	720.7	1640.2	0.00	1.25	1.25				115.0
2	681.9	1099.1	2230.0	0.00	1.25	4.32	2230.00	675.2	0.00083	395.9
3	685.6	3039.7	5020.0	0.00	1.25	6.38	5020.00	677.5	0.00063	585.3
4	686.0	3316.4	5670.0	0.00	1.25	6.49	5670.00	678.0	0.00065	594.9
5	687.1	3973.0	7500.0	0.00	1.25	6.72	7500.00	679.1	0.00073	616.2

SEGMENT TABLE FOR SECTION 26.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1520.	0.	1520.	0.
1520.	VELOCITY FPS	2.37	0.00	2.36	0.00
2	DISCHARGE CFS	2230.	13.	2158.	59.
2230.	VELOCITY FPS	2.41	0.33	2.45	0.33
3	DISCHARGE CFS	5020.	260.	3601.	1159.
5020.	VELOCITY FPS	2.39	0.69	2.76	0.85
4	DISCHARGE CFS	5670.	331.	3919.	1420.
5670.	VELOCITY FPS	2.47	0.76	2.89	0.93
5	DISCHARGE CFS	7500.	536.	4820.	2145.
7500.	VELOCITY FPS	2.69	0.90	3.25	1.13
1	ELEV 679.8 KD	45809.	1.	45807.	1.
2	ELEV 681.9 KD	76681.	294.	75003.	1385.
3	ELEV 685.6 KD	199948.	10244.	143857.	45848.
4	ELEV 686.0 KD	221239.	12647.	153795.	54797.
5	ELEV 687.1 KD	277239.	19782.	178211.	79246.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 26.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
671.20	0.					
672.	35.	46.	630.	1.	628.	1.
673.	85.	55.	2527.	1.	2525.	1.
674.	144.	63.	5504.	1.	5502.	1.
675.	211.	71.	9563.	1.	9561.	1.
676.	285.	79.	14742.	1.	14740.	1.
677.	368.	87.	21115.	1.	21113.	1.
678.	459.	95.	28726.	1.	28724.	1.
679.	558.	103.	37638.	1.	37636.	1.
680.	665.	111.	47928.	1.	47926.	1.
681.	814.	215.	61140.	18.	60870.	84.
682.	1129.	415.	79287.	389.	76598.	1836.
683.	1618.	509.	104684.	1658.	93703.	8114.
684.	2153.	549.	136881.	4062.	112195.	19646.
685.	2714.	572.	175538.	7632.	132016.	35275.
686.	3297.	594.	220164.	12475.	153105.	54182.
687.	3901.	614.	270774.	18878.	175447.	76261.
688.	4525.	630.	326700.	26702.	198903.	100641.
689.	5162.	645.	388303.	36135.	223583.	128260.
690.	5813.	661.	455356.	47039.	249443.	158807.
691.	6484.	679.	526616.	58703.	276345.	191381.
692.	7177.	700.	602821.	71731.	304335.	226478.
693.	7882.	720.	684605.	86417.	333487.	264645.
694.	8617.	741.	771121.	102803.	363590.	304506.
695.	9368.	762.	863214.	121149.	394778.	347093.
696.	10137.	783.	960815.	141534.	427015.	392209.
697.	10928.	793.	1066784.	167167.	460176.	439102.
698.	11725.	800.	1179394.	196121.	494384.	488677.
699.	12527.	804.	1297677.	227572.	529529.	540247.
700.	13332.	807.	1421867.	261088.	565656.	594876.
701.	14141.	809.	1551864.	296357.	602739.	652587.
702.	14951.	810.	1682306.	330228.	640420.	710515.
703.	15761.	810.	1816032.	364493.	678921.	770025.
704.	16571.	810.	1955750.	401087.	718437.	832443.
705.	17381.	810.	2101534.	440087.	758961.	897817.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 26.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	679.2	0.0	0.0							
LOW GRND	679.2	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	679.2	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	684.6	1039.8	1520.0	0.00	9.73	24.51	1520.00	681.2	0.00092	314.0
2	685.8	1451.5	2230.0	0.00	10.17	28.48	2230.00	681.6	0.00084	364.8
3	689.0	2679.4	5020.0	0.00	11.32	31.48	5020.00	682.9	0.00073	403.3
4	689.5	2898.6	5670.0	0.00	11.52	31.85	5670.00	683.1	0.00074	408.0
5	690.8	3442.5	7500.0	0.00	12.00	32.75	7500.00	683.7	0.00077	419.6

SEGMENT TABLE FOR SECTION 26.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1520.	0.	940.	580.
1520.	VELOCITY FPS	1.84	0.00	2.21	0.95
2	DISCHARGE CFS	2230.	0.	1272.	958.
2230.	VELOCITY FPS	1.93	0.00	2.38	1.04
3	DISCHARGE CFS	5020.	0.	2347.	2673.
5020.	VELOCITY FPS	2.19	0.00	2.79	1.45
4	DISCHARGE CFS	5670.	0.	2595.	3075.
5670.	VELOCITY FPS	2.27	0.00	2.90	1.54
5	DISCHARGE CFS	7500.	0.	3288.	4212.
7500.	VELOCITY FPS	2.48	0.00	3.18	1.75
1	ELEV 684.6 KD	50218.	1.	31116.	19101.
2	ELEV 685.8 KD	77016.	1.	44036.	32978.
3	ELEV 689.0 KD	185788.	1.	86994.	98793.
4	ELEV 689.5 KD	208792.	1.	95658.	113132.
5	ELEV 690.8 KD	269737.	1.	118356.	151379.

***** WSP2 MICROCOMPUTER TEST VERSION *****

F D TABLE FOR CROSS SECTION 26.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	F.D TOTAL	F.D BY SEGMENT 1	2	3
679.20	0.					
680.	70.	106.	1361.	1.	1243.	117.
681.	200.	151.	5864.	1.	4838.	1019.
682.	375.	197.	13510.	1.	10184.	3312.
683.	594.	242.	24574.	1.	17080.	7479.
684.	857.	287.	39371.	1.	25425.	13946.
685.	1169.	332.	58289.	1.	35166.	23101.
686.	1523.	370.	82138.	1.	46260.	35828.
687.	1903.	386.	112377.	1.	58687.	53646.
688.	2293.	395.	147652.	1.	72441.	75170.
689.	2693.	404.	187199.	1.	87512.	99659.
690.	3101.	412.	230882.	1.	103903.	126957.
691.	3517.	421.	278616.	1.	121619.	156981.
692.	3944.	430.	330297.	1.	140677.	189597.
693.	4378.	439.	385973.	1.	161070.	224885.
694.	4821.	447.	445588.	1.	182811.	262765.
695.	5272.	456.	509111.	1.	205912.	303193.
696.	5732.	465.	576524.	1.	230386.	346136.
697.	6218.	495.	651969.	66.	260340.	391415.
698.	6729.	523.	732093.	706.	291838.	439256.
699.	7262.	547.	816900.	2340.	324820.	489611.
700.	7819.	572.	906374.	4714.	359139.	542357.
701.	8419.	615.	1000563.	7984.	394788.	597512.
702.	9062.	670.	1100039.	12669.	431821.	655145.
703.	9754.	735.	1205198.	19503.	470192.	715227.
704.	10542.	821.	1317186.	28907.	509780.	777684.
705.	11390.	922.	1434738.	41869.	550743.	841642.
706.	12380.	1058.	1556612.	59196.	592877.	903598.
707.	13541.	1235.	1680227.	82752.	636265.	959410.
708.	14817.	1440.	1806250.	114425.	680951.	1010873.
709.	16257.	1440.	1996681.	168781.	726678.	1095339.
710.	17697.	1440.	2198194.	237653.	773607.	1182498.
711.	19137.	1440.	2405269.	289934.	821060.	1268311.
712.	20577.	1440.	2624526.	351546.	869818.	1357402.
713.	22017.	1440.	2856276.	423791.	919877.	1449793.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 26.95 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	679.9	0.0	0.0							
LOW GRND	679.9	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	679.9	0.0	0.0	0.00	0.00	0.00				0.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	685.1	978.6	1520.0	0.00	0.80	2.80	1520.00	681.9	0.00121	305.0
2	686.3	1357.9	2230.0	0.00	0.83	3.28	2230.00	682.3	0.00115	357.1
3	689.4	2553.0	5020.0	0.00	0.93	3.68	5020.00	683.6	0.00101	400.5
4	689.9	2769.8	5670.0	0.00	0.94	3.72	5670.00	683.8	0.00101	405.3
5	691.2	3315.5	7500.0	0.00	0.98	3.83	7500.00	684.4	0.00104	416.9

SEGMENT TABLE FOR SECTION 26.95

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	1520.	0.	1013.	507.
1520.	VELOCITY FPS	2.10	0.00	2.48	0.89
2	DISCHARGE CFS	2230.	0.	1393.	837.
2230.	VELOCITY FPS	2.24	0.00	2.73	0.99
3	DISCHARGE CFS	5020.	0.	2601.	2419.
5020.	VELOCITY FPS	2.52	0.00	3.22	1.39
4	DISCHARGE CFS	5670.	0.	2878.	2792.
5670.	VELOCITY FPS	2.59	0.00	3.33	1.46
5	DISCHARGE CFS	7500.	0.	3646.	3854.
7500.	VELOCITY FPS	2.81	0.00	3.64	1.67
1 ELEV	685.1 KD	43639.	1.	29161.	14477.
2 ELEV	686.3 KD	65862.	1.	41150.	24712.
3 ELEV	689.4 KD	158218.	1.	82117.	76100.
4 ELEV	689.9 KD	178424.	1.	90554.	87869.
5 ELEV	691.2 KD	232095.	1.	112910.	119184.

***** WSPZ MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 26.95

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
679.90	0.					
680.	7.	40.	41.	1.	40.	2.
681.	105.	120.	2352.	1.	2118.	230.
682.	247.	165.	7563.	1.	6270.	1289.
683.	435.	210.	15746.	1.	12095.	3643.
684.	668.	255.	27123.	1.	19434.	7680.
685.	948.	300.	41976.	1.	28206.	13745.
686.	1271.	346.	60538.	1.	38353.	22158.
687.	1635.	378.	83928.	1.	49846.	34060.
688.	2019.	389.	112868.	1.	62672.	50176.
689.	2412.	397.	145826.	1.	76820.	68992.
690.	2814.	406.	182528.	1.	92287.	90231.
691.	3224.	415.	222888.	1.	109075.	113805.
692.	3644.	424.	266840.	1.	127190.	139642.
693.	4072.	433.	314344.	1.	146640.	167696.
694.	4510.	441.	365343.	1.	167444.	197885.
695.	4956.	450.	419865.	1.	189601.	230252.
696.	5410.	459.	477889.	1.	213123.	264757.
697.	5878.	474.	540581.	3.	239170.	301360.
698.	6364.	505.	610011.	178.	269703.	340068.
699.	6887.	530.	683473.	884.	301573.	380751.
700.	7429.	555.	761132.	2430.	334932.	423554.
701.	7991.	581.	842987.	4759.	369726.	468445.
702.	8602.	629.	928978.	7723.	405781.	515305.
703.	9269.	689.	1019949.	12114.	443162.	564207.
704.	9974.	757.	1115845.	18499.	481971.	615230.
705.	10786.	849.	1217898.	27150.	521932.	668202.
706.	11687.	962.	1324167.	39004.	563225.	721110.
707.	12676.	1098.	1434569.	54930.	605810.	773573.
708.	13924.	1296.	1545044.	76563.	649518.	817321.
709.	15249.	1440.	1673513.	107960.	694521.	868507.
710.	16689.	1440.	1843839.	158619.	740671.	940311.
711.	18129.	1440.	2021630.	211659.	787705.	1012807.
712.	19569.	1440.	2206423.	257735.	835550.	1085582.
713.	21009.	1440.	2401652.	311950.	884699.	1161113.
714.	22449.	1440.	2607566.	375431.	935147.	1239414.

***** WSPZ MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

```
END                                                          238
ENDJOB                                                       239
```

**********NORMAL END OF JOB----------

FILENAME = FMISTY4.OUT


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WSP2 XEQ 01/04/88      11:13:22
     REV 03/14/88

*****   WSP2  MICROCOMPUTER  TEST  VERSION   *****

---------------------- LIST OF INPUT DATA WITH LIMITED EDITING----------------------
WSP2       40.                                                                  1
TITLE      MISTEGUAY CREEK - FPMS - SAGINAW,SHIAWASSEE & GENESEE CO.MI.2
TITLE      FLOOD PLAIN MANAGEMENT STUDY - PRESENT CONDITIONS 10-27-88  3
TITLE      DISCHARGE FROM STRUCTURE 02 TO JUDDVILLE ROAD
DISCHARGE -1.        2105.      4090.      6090.      6640.      8250.      4
STARTE     27.1      694.66     702.81     704.83     705.18     705.94     7
TRIB       30.5
OUTPUT     PSK
COMMENT    STARTING ELEVATIONS FROM MISTYB.OUT (TR 20 OF 10-18-88)          13
REACH      27.1      1.         0.         0.                                15
REACH2     27.9      -1.4                                                    16
REACH      27.9      1.         4025.                                       17
ROAD       28.0      2.7        100.       100.                              18
COMMENT    CS 28.0 IS HENDERSON ROAD AT STA. 1319+83.                         19
REACH      28.1      1.         100.       100.                              19A
REACH2     28.5      .9                                                      19B
REACH      28.5      1.         1385.      1200.                             20
ROAD       29.0      2.7        180.       180.                              21
COMMENT    CS 29.0 IS NEW LATHROP RD AT STA. 1336+48.                         22
REACH      29.1      1.         100.       100.                              22A
REACH2     28.5      0.                                                      22B
REACH      29.5      1.         3170.      2486.                             23
REACH      29.9      1.         2664.      2526.                             24
ROAD       30.0      2.7        170.       170.                              25
COMMENT    CS 30.0 IS RILEY RD AT STA. 1396+52.                               26
REACH      30.1      1.         100.       100.                              26A
REACH2     30.5      -3.7                                                    26B
REACH      30.5      1.         4303.      2900.                             27
REACH      30.9      1.         3930.      3316.                             28
ROAD       31.0      2.7        250.       250.                              29
COMMENT    CS 31.0 IS JUDDVILLE RD AT STA. 1481+35.                           30
REACH      31.1      1.         350.       350.                              31
SEGMENT    27.9      1          N          -60.                              35
N VALUE    .070                                                              36
SEGMENT    27.9      2          C          115.                              37
N VALUE    .068                                                              38
SEGMENT    27.9      3          N          470.                              39
N VALUE    .070                                                              40
SECTION    27.9                                                              41
           -900.     710.       -880.      708.       -865.      706.       42
           -830.     704.       -800.      700.       -675.      690.       43
           -60.      688.       -50.       681.3      0.         681.3      44
           60.       681.3      115.       700.       735.       710.       45
           470.      710.                                                    46
ENDTABLE                                                                     47
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***** WSPZ MICROCOMPUTER TEST VERSION *****

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-----------------------------80/80 LIST OF INPUT DATA-----------------------------
---------------------MESSAGE - DATA POINTS ON SECTION 27.9   REORDERED BY PROGRAM ACCORDING TO X VALUES
                    DUPLICATE X POINTS NOT CHANGED---------------------
BPR        28.0     A        1.                                          48
GIRDER     692.5    692.0    45.       .8       2.7                      49
           -23.1    695.7    -23.      692.0    23.      692.            50
           23.1     695.8                                                51
ENDTABLE                                                                 52
SECTION    28.0                                                          53
           -1150.   710.     -700.     699.4    -600.    696.9           54
           -500.    695.2    -400.     693.9    -300.    693.6           55
           -200.    694.1    -100.     695.1    -23.1    695.7           56
           -23.     684.4    0.        681.3    23.      682.4           57
           23.1     695.8    50.       696.2    125.     699.4           58
           400.     710.                                                 59
ENDTABLE                                                                 60
SEGMENT    28.5     1        N         -40.                              61
N VALUE    .070                                                          62
SEGMENT    28.5     2        C         40.                               63
N VALUE    .059                                                          64
SEGMENT    28.5     3        N         450.                              65
N VALUE    .070                                                          66
SECTION    28.5                                                          67
           -90.     708.     -75.      706.     -65.     702.            68
           -40.     688.     -26.      680.4    0.       680.4           69
           26.      680.4    40.       688.     365.     690.            70
           400.     694.     450.      708.                              71
ENDTABLE                                                                 72
BPR        29.0     A        1                                           73
GIRDER     694.9    693.8    45.       .8       2.7                      74
           -21.3    695.8    -21.3     694.6    21.3     693.8           75
           21.3     695.0                                                76
ENDTABLE                                                                 77
SECTION    29.0                                                          78
           -1350.   715.     -500.     695.4    -400.    693.6           79
           -300.    692.7    -200.     692.8    -100.    693.7           80
           -21.3    695.0    -21.2     682.0    0.       680.3           81
           21.2     682.8    21.3      695.8    85.      698.1           82
           400.     713.                                                 83
ENDTABLE                                                                 84
SEGMENT    29.5     1        N         -30.                              85
N VALUE    .120                                                          86
SEGMENT    29.5     2        C         30.                               87
N VALUE    .068                                                          88
SEGMENT    29.5     3        N         315.                              89
N VALUE    .120                                                          90
SECTION    29.5                                                          91
           -530.    710.     -480.     708.     -430.    706.            92
```

703.35 703.41

***** WSPZ MICROCOMPUTER TEST VERSION *****

----------80/80 LIST OF INPUT DATA----------

```
          -355.     704.      -290.     702.      -175.     700.      93
          -145.     694.      -30.      692.      -16.      688.6     94
          0.        688.6     16.       688.6     30.       692.      95
          275.      694.      315.      710.                          96
ENDTABLE                                                              97
SEGMENT   29.9      1         N         -38.                          98
N VALUE   .120                                                        99
SEGMENT   29.9      2         C         45.                           100
N VALUE   .068                                                        101
SEGMENT   29.9      3         N         825.                          102
N VALUE   .120                                                        103
SECTION   29.9                                                        104
          -720.     716.      -600.     714.      -570.     712.      105
          -475.     704.      -455.     702.      -440.     700.      106
          -100.     698.      -38.      698.      -25.      696.      107
          -15.      692.1     0.        692.1     15.       692.1     108
          28.       696.      45.       698.      105.      700.      109
          190.      702.      280.      704.      330.      710.      110
          465.      714.      825.      716.                          111
ENDTABLE                                                              112
BPR       30.0      A         1         7                             113
PIER      692.5     2.5                                               114
GIRDER    706.      704.3     15.       .8        2.7                 115
          -48.1     706.3     -48.      704.3     48.       705.5     116
          48.1      707.5                                             117
ENDTABLE                                                              118
SECTION   30.0                                                        119
          -700.     715.      -550.     710.1     -450.     707.6     120
          -350.     705.5     -200.     705.3     -100.     705.8     121
          -48.1     706.3     -48.      700.3     -31.      693.8     122
          0.        692.5     31.       693.2     48.       701.9     123
          48.1      707.5     100.      708.1     200.      710.      124
          750.      715.                                              125
ENDTABLE                                                              126
SEGMENT   30.5      1         N         -38                           127
N VALUE   .120                                                        128
SEGMENT   30.5      2         C         52.                           129
N VALUE   .076                                                        130
SEGMENT   30.5      3         N         285.                          131
N VALUE   .120                                                        132
SECTION   30.5                                                        133
          -355.     716.      -305.     714.      -250.     712.      134
          -190.     710.      -160.     708.      -150.     706.      135
          -135.     704.      -38.      702.      -20.      700.      136
          -15.      696.2     0.        696.2     15.       696.2     137
```

***** WSPZ MICROCOMPUTER TEST VERSION *****

```
-----------------------------80/80 LIST OF INPUT DATA-----------------------------
          20.       700.      52.       702.      150.      704.      138
          253.      706.      285.      716.                          139
ENDTABLE                                                              140
SEGMENT   30.9      1.        N         -45.                          141
N VALUE   .120                                                        142
SEGMENT   30.9      2         C         32.                           143
N VALUE   .076                                                        144
SEGMENT   30.9      3         N         370.                          145
N VALUE   .120                                                        146
SECTION   30.9                                                        147
          -107.     716.5     -45.      708.      -30.      706.      148
          -15.      699.7     0.        699.7     15.       699.7     149
          22.       706.      32.       708.      150.      708.      150
          242.      710.      300.      712.      340.      714.      151
          370.      716.5                                             152
ENDTABLE                                                              153
COMPUTE   27.1      30.5      27.1
-----------------------------END OF DATA LISTING----------------------------
```

COMPUTE 27.1 30.5 27.1

----------STARTING DATA FROM GIVEN ELEVATION----------

***** WSPE MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 27.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	------ACRES FLOODED------- FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	679.9	0.0	0.0							
LOW GRND	686.6	836.5	265.5	0.00	0.00	0.00				139.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	686.6	836.5	265.5	0.00	0.00	0.00				139.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	694.7	6631.4	2105.0	0.00	0.00	0.00	2105.00	682.1	0.00001	854.2
2	702.8	14359.5	4090.0	0.00	0.00	0.00	4090.00	683.3	0.00000	1100.6
3	704.8	16675.3	6090.0	0.00	0.00	0.00	6090.00	684.3	0.00001	1202.9
4	705.2	17107.9	6640.0	0.00	0.00	0.00	6640.00	684.6	0.00001	1217.9
5	705.9	18047.3	8250.0	0.00	0.00	0.00	8250.00	685.3	0.00001	1250.6

SEGMENT TABLE FOR SECTION 27.1

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2105.	1240.	865.	0.
2105.	VELOCITY FPS	0.34	0.27	0.42	0.00
2	DISCHARGE CFS	4090.	2854.	1210.	26.
4090.	VELOCITY FPS	0.30	0.27	0.35	0.08
3	DISCHARGE CFS	6090.	4275.	1731.	85.
6090.	VELOCITY FPS	0.38	0.35	0.45	0.12
4	DISCHARGE CFS	6640.	4685.	1870.	105.
6640.	VELOCITY FPS	0.41	0.37	0.48	0.14
5	DISCHARGE CFS	8250.	5806.	2282.	162.
8250.	VELOCITY FPS	0.48	0.44	0.57	0.17
1	ELEV 694.7 KD	580865.	341547.	239317.	1.
2	ELEV 702.8 KD	1833613.	1279852.	543161.	10601.
3	ELEV 704.8 KD	2247791.	1577798.	638828.	31165.
4	ELEV 705.2 KD	2326879.	1635175.	655960.	35743.
5	ELEV 705.9 KD	2505842.	1764113.	693902.	47827.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 27.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
679.90	0.					
680.	11.	55.	51.	1.	51.	1.
681.	124.	115.	2833.	1.	2831.	1.
682.	241.	119.	8361.	1.	8359.	1.
683.	362.	124.	16087.	1.	16085.	1.
684.	488.	128.	25783.	1.	25781.	1.
685.	619.	133.	37325.	1.	37323.	1.
686.	754.	137.	50627.	1.	50625.	1.
687.	942.	264.	66433.	77.	65834.	1.
688.	1360.	563.	88845.	4740.	83063.	1.
689.	2044.	767.	124862.	21786.	101968.	1.
690.	2818.	782.	178260.	55069.	122517.	1.
691.	3608.	798.	244425.	99217.	144683.	1.
692.	4412.	813.	322646.	154203.	168441.	1.
693.	5234.	829.	411000.	216818.	193787.	1.
694.	6072.	844.	509935.	288811.	220702.	1.
695.	6924.	859.	619093.	369579.	249177.	1.
696.	7791.	875.	738040.	458563.	279207.	1.
697.	8671.	890.	867225.	556451.	310773.	1.
698.	9572.	906.	1004494.	660361.	343919.	1.
699.	10493.	932.	1154635.	774177.	380189.	6.
700.	11438.	975.	1319860.	898492.	420786.	582.
701.	12448.	1018.	1494148.	1028320.	462819.	2111.
702.	13485.	1063.	1678912.	1165662.	506586.	5954.
703.	14565.	1109.	1872140.	1307593.	551919.	12101.
704.	15709.	1160.	2072906.	1452234.	598711.	20823.
705.	16885.	1210.	2286440.	1605510.	647122.	33319.
706.	18121.	1253.	2521376.	1774546.	696941.	48921.
707.	19402.	1298.	2767207.	1949010.	748232.	68608.
708.	20713.	1343.	3024616.	2129786.	801043.	93107.
709.	22235.	1478.	3300449.	2325824.	855184.	118389.
710.	23809.	1635.	3592104.	2533889.	910876.	147336.
711.	25444.	1635.	3914270.	2737998.	967105.	185098.
712.	27079.	1635.	4253753.	2951301.	1024861.	230865.
713.	28714.	1635.	4610897.	3173911.	1084135.	286004.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 27.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	681.3	0.0	0.0							
LOW GRND	688.0	836.5	318.6	0.00	12.91	12.91				139.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	688.0	836.5	318.6	0.00	12.91	12.91				139.7
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	694.8	5527.3	2105.0	0.00	14.74	14.74	2105.00	683.5	0.00002	834.0
2	702.8	12888.7	4090.0	0.00	16.17	16.17	4090.00	684.7	0.00001	1037.0
3	704.9	15092.2	6090.0	0.00	16.17	16.17	6090.00	685.7	0.00001	1132.7
4	705.2	15503.4	6640.0	0.00	16.17	16.17	6640.00	686.0	0.00001	1151.0
5	706.0	16402.0	8250.0	0.00	16.17	16.17	8250.00	686.7	0.00001	1191.1

SEGMENT TABLE FOR SECTION 27.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2105.	1146.	959.	0.
2105.	VELOCITY FPS	0.42	0.31	0.52	0.00
2	DISCHARGE CFS	4090.	2829.	1251.	11.
4090.	VELOCITY FPS	0.33	0.30	0.39	0.07
3	DISCHARGE CFS	6090.	4262.	1777.	52.
6090.	VELOCITY FPS	0.42	0.38	0.50	0.12
4	DISCHARGE CFS	6640.	4650.	1923.	67.
6640.	VELOCITY FPS	0.45	0.41	0.53	0.13
5	DISCHARGE CFS	8250.	5788.	2355.	107.
8250.	VELOCITY FPS	0.53	0.48	0.62	0.17
1	ELEV 694.8 KD	444734.	241633.	203100.	1.
2	ELEV 702.8 KD	1574060.	1088620.	481803.	3638.
3	ELEV 704.9 KD	1964771.	1375168.	573664.	15938.
4	ELEV 705.2 KD	2035586.	1426235.	590294.	19058.
5	ELEV 706.0 KD	2197042.	1541699.	627429.	27914.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 27.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
681.30	0.					
682.	78.	113.	1332.	1.	1330.	1.
683.	193.	118.	5868.	1.	5866.	1.
684.	313.	122.	12751.	1.	12749.	1.
685.	437.	126.	21677.	1.	21675.	1.
686.	566.	131.	32491.	1.	32489.	1.
687.	699.	135.	45095.	1.	45093.	1.
688.	837.	140.	59427.	1.	59425.	1.
689.	1156.	450.	78554.	1352.	75966.	1.
690.	1757.	713.	108564.	12854.	94206.	1.
691.	2506.	776.	155380.	39861.	114101.	1.
692.	3290.	791.	216568.	80150.	135623.	1.
693.	4091.	807.	289555.	129854.	158750.	1.
694.	4905.	822.	373929.	189799.	183463.	1.
695.	5735.	838.	469075.	258926.	209749.	1.
696.	6580.	853.	574538.	336763.	237595.	1.
697.	7439.	869.	689971.	422974.	266996.	1.
698.	8319.	884.	813980.	515725.	297968.	1.
699.	9211.	900.	948098.	617367.	330483.	1.
700.	10115.	915.	1092331.	727806.	364523.	1.
701.	11060.	958.	1252125.	847301.	404301.	99.
702.	12044.	1001.	1422849.	975038.	445769.	1270.
703.	13053.	1044.	1605092.	1111671.	488978.	4443.
704.	14133.	1091.	1793344.	1249613.	533559.	9146.
705.	15245.	1139.	1991653.	1394007.	579815.	17037.
706.	16406.	1191.	2198332.	1542221.	627595.	27961.
707.	17627.	1236.	2425739.	1705689.	676802.	42029.
708.	18878.	1279.	2668018.	1879336.	727579.	60527.
709.	20189.	1325.	2920018.	2056332.	779714.	82511.
710.	21605.	1415.	3187917.	2245599.	833364.	108242.
711.	23179.	1572.	3473654.	2449364.	888402.	135111.
712.	24790.	1635.	3783338.	2655253.	944428.	169102.
713.	26425.	1635.	4115851.	2864864.	1001575.	211513.
714.	28060.	1635.	4465886.	3083738.	1060242.	262728.
715.	29695.	1635.	4833792.	3311980.	1120422.	324219.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAH	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	ORIFICE FLOW FOR THIS PROFILE.				COEF =	0.80								
2	ORIFICE FLOW FOR THIS PROFILE.				COEF =	0.80								
3	ORIFICE FLOW FOR THIS PROFILE.				COEF =	0.80								
4	ORIFICE FLOW FOR THIS PROFILE.				COEF =	0.80								
5	ORIFICE FLOW FOR THIS PROFILE.				COEF =	0.80								

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 28.0 Henderson

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	681.30	0.0	0.00	681.30	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	694.77	2105.0	0.22	694.76	2105.00	1333.4	444.8	0.0	0.0	771.6	317.7	370.2
2	702.94	4090.0	0.10	702.84	4090.00	825.3	444.8	0.0	0.0	3264.7	6579.4	1067.0
3	704.99	6090.0	0.12	704.87	6090.00	966.9	444.8	0.0	0.0	5123.1	8912.4	1207.3
4	705.36	6640.0	0.14	705.22	6640.00	959.9	444.8	0.0	0.0	5680.1	9368.9	1232.9
5	706.16	8250.0	0.16	706.00	8250.00	1061.5	444.8	0.0	0.0	7188.5	10369.9	1287.2

MIN ROAD ELEVATION = 693.60 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 692.00 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 28.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED FLOODPLAIN CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	681.3	0.0	0.0							
LOW GRND	688.9	501.6	384.4	0.00	0.37	0.37				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	688.9	501.6	384.4	0.00	0.37	0.37				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	695.0	2746.4	2105.0	0.00	0.37	2.07	2105.00	684.8	0.00008	451.2
2	702.9	6507.0	4090.0	0.00	0.37	2.27	4090.00	686.7	0.00002	494.0
3	705.0	7532.6	6090.0	0.00	0.37	2.32	6090.00	688.2	0.00003	506.3
4	705.4	7723.8	6640.0	0.00	0.37	2.33	6640.00	688.6	0.00004	508.6
5	706.2	8130.0	8250.0	0.00	0.37	2.36	8250.00	690.6	0.00005	513.4

SEGMENT TABLE FOR SECTION 28.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2105.	12.	1158.	935.
2105.	VELOCITY FPS	0.94	0.37	1.17	0.54
2	DISCHARGE CFS	4090.	61.	1449.	2580.
4090.	VELOCITY FPS	0.69	0.35	0.89	0.55
3	DISCHARGE CFS	6090.	104.	2031.	3955.
6090.	VELOCITY FPS	0.88	0.45	1.14	0.72
4	DISCHARGE CFS	6640.	116.	2192.	4332.
6640.	VELOCITY FPS	0.93	0.48	1.20	0.77
5	DISCHARGE CFS	8250.	152.	2670.	5429.
8250.	VELOCITY FPS	1.10	0.56	1.42	0.91
1	ELEV 695.0 KD	234175.	1343.	128996.	103836.
2	ELEV 702.9 KD	833197.	12450.	295488.	525259.
3	ELEV 705.0 KD	1039996.	17731.	346947.	675318.
4	ELEV 705.4 KD	1079504.	18849.	356676.	703979.
5	ELEV 706.2 KD	1166460.	21395.	377727.	767339.

***** WSPC MICROCOMPUTER TEST VERSION *****

F.D TABLE FOR CROSS SECTION 28.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	F.D TOTAL	F.D BY SEGMENT 1	2	3
681.30	0.					
682.	37.	55.	728.	1.	726.	1.
683.	94.	58.	3212.	1.	3210.	1.
684.	154.	62.	7007.	1.	7005.	1.
685.	218.	66.	11968.	1.	11966.	1.
686.	285.	69.	18033.	1.	18031.	1.
687.	356.	73.	25172.	1.	25170.	1.
688.	431.	77.	33375.	1.	33373.	1.
689.	511.	96.	42774.	1.	42765.	4.
690.	706.	261.	56321.	14.	54506.	1019.
691.	1040.	382.	76338.	74.	67396.	7782.
692.	1448.	420.	105187.	215.	81341.	22258.
693.	1873.	431.	141835.	461.	96333.	44288.
694.	2309.	441.	185289.	834.	112326.	71762.
695.	2754.	451.	235154.	1352.	129289.	104402.
696.	3208.	457.	291705.	2028.	147179.	142370.
697.	3668.	462.	353634.	2873.	165965.	184439.
698.	4133.	467.	421541.	3924.	185668.	231700.
699.	4602.	473.	495138.	5196.	206259.	283630.
700.	5078.	478.	573396.	6677.	227679.	338891.
701.	5559.	483.	656872.	8403.	249943.	398356.
702.	6045.	489.	745610.	10382.	273041.	462082.
703.	6536.	494.	839104.	12591.	296943.	529458.
704.	7034.	500.	937276.	15029.	321633.	600471.
705.	7536.	506.	1040769.	17752.	347131.	675857.
706.	8047.	512.	1148414.	20853.	373371.	754078.
707.	8563.	520.	1260604.	23816.	400385.	836329.
708.	9086.	530.	1377072.	26488.	428158.	922405.
709.	9622.	536.	1501126.	31002.	456643.	1013299.
710.	10161.	540.	1630939.	36234.	485877.	1108695.
711.	10701.	540.	1761037.	41441.	515657.	1202553.
712.	11241.	540.	1896688.	47186.	546185.	1300850.
713.	11781.	540.	2037931.	53505.	577454.	1403641.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 28.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	680.4	0.0	0.0							
LOW GRND	688.0	501.6	331.1	0.00	2.54	2.54				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	688.0	501.6	331.1	0.00	2.54	2.54				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	695.1	3189.0	2105.0	0.00	2.54	12.57	2105.00	683.9	0.00005	456.4
2	703.0	6967.4	4090.0	0.00	2.54	13.76	4090.00	685.8	0.00002	499.4
3	705.0	8011.4	6090.0	0.00	2.54	14.10	6090.00	687.3	0.00003	512.0
4	705.4	8204.8	6640.0	0.00	2.54	14.17	6640.00	687.7	0.00003	514.3
5	706.2	8625.5	8250.0	0.00	2.54	14.37	8250.00	689.7	0.00004	521.5

SEGMENT TABLE FOR SECTION 28.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2105.	15.	1026.	1064.
2105.	VELOCITY FPS	0.77	0.34	0.96	0.51
2	DISCHARGE CFS	4090.	67.	1342.	2681.
4090.	VELOCITY FPS	0.63	0.33	0.79	0.53
3	DISCHARGE CFS	6090.	113.	1887.	4090.
6090.	VELOCITY FPS	0.80	0.43	1.01	0.70
4	DISCHARGE CFS	6640.	126.	2039.	4475.
6640.	VELOCITY FPS	0.86	0.46	1.08	0.74
5	DISCHARGE CFS	8250.	160.	2485.	5605.
8250.	VELOCITY FPS	1.01	0.52	1.27	0.88
1	ELEV 695.1 KD	299590.	2143.	146407.	151040.
2	ELEV 703.0 KD	968757.	15782.	318287.	634688.
3	ELEV 705.0 KD	1197809.	22160.	371528.	804121.
4	ELEV 705.4 KD	1242464.	23516.	381656.	837291.
5	ELEV 706.2 KD	1338754.	25917.	403645.	909192.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 28.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
680.40	0.					
681.	32.	54.	563.	1.	561.	1.
682.	88.	58.	2901.	1.	2899.	1.
683.	148.	62.	6574.	1.	6572.	1.
684.	211.	65.	11421.	1.	11418.	1.
685.	278.	69.	17379.	1.	17377.	1.
686.	349.	73.	24408.	1.	24406.	1.
687.	424.	76.	32506.	1.	32504.	1.
688.	502.	80.	41656.	1.	41653.	1.
689.	683.	244.	54931.	12.	53275.	788.
690.	1003.	372.	74585.	69.	66055.	7209.
691.	1406.	419.	103507.	211.	79898.	21956.
692.	1830.	430.	141057.	465.	94792.	45096.
693.	2264.	440.	185925.	851.	110690.	74106.
694.	2709.	451.	237554.	1393.	127559.	108602.
695.	3163.	456.	296101.	2094.	145343.	148424.
696.	3622.	461.	360713.	2985.	164043.	193296.
697.	4086.	467.	431722.	4095.	183661.	243739.
698.	4554.	472.	508779.	5439.	204169.	299170.
699.	5030.	477.	590490.	7000.	225495.	357811.
700.	5511.	483.	678067.	8830.	247680.	421387.
701.	5996.	488.	771250.	10935.	270700.	489538.
702.	6487.	494.	869210.	13274.	294514.	561280.
703.	6984.	500.	972448.	15874.	319130.	637306.
704.	7485.	506.	1081314.	18760.	344554.	718000.
705.	7996.	512.	1194350.	22052.	370710.	801463.
706.	8511.	519.	1312573.	25309.	397652.	889544.
707.	9034.	529.	1435013.	28161.	425346.	981465.
708.	9569.	535.	1565319.	32775.	453761.	1078599.
709.	10107.	540.	1702614.	38398.	482941.	1181273.
710.	10647.	540.	1839536.	43937.	512645.	1283133.
711.	11187.	540.	1982370.	50049.	543099.	1386756.
712.	11727.	540.	2131162.	56774.	574294.	1496702.
713.	12267.	540.	2285960.	64150.	606226.	1611529.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AR.B	DLTAI	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
2	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSPZ MICROCOMPUTER TEST VERSION *****

ROAD SECTION 29.0 New Lothrop

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	680.30	0.0	0.00	680.30	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	695.19	2105.0	0.12	695.07	2105.00	1175.8	545.9	0.0	0.0	929.2	777.8	476.8
2	703.07	4090.0	0.10	702.97	4090.00	981.2	545.9	0.0	0.0	3108.8	6802.1	1022.7
3	705.16	6090.0	0.12	705.04	6090.00	1168.1	545.9	0.0	0.0	4921.9	9075.6	1157.2
4	705.55	6640.0	0.14	705.41	6640.00	1163.0	545.9	0.0	0.0	5477.0	9542.6	1183.0
5	706.39	8250.0	0.16	706.23	8250.00	1291.2	545.9	0.0	0.0	6958.8	10548.3	1236.6

MIN ROAD ELEVATION = 692.70 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 693.80 FT OPENING NO.= 1

New Lothrop Rd. D.A. = 47.7 sq-miles

Q_{10} = 3940 cfs.

Q_{50} = 5640 cfs.

Q_{100} = 6060 cfs.

Q_{500} = 7400 cfs.

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***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 29.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	680.4	0.0	0.0							
LOW GRND	688.0	501.6	324.9	0.00	0.51	0.51				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	688.0	501.6	324.9	0.00	0.51	0.51				80.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	695.2	3249.7	2105.0	0.00	0.51	2.94	2105.00	683.9	0.00005	457.1
2	703.1	7020.1	4090.0	0.00	0.51	3.21	4090.00	685.8	0.00002	500.1
3	705.2	8076.5	6090.0	0.00	0.51	3.30	6090.00	687.3	0.00003	512.7
4	705.6	8280.4	6640.0	0.00	0.51	3.31	6640.00	687.7	0.00003	515.2
5	706.4	8714.7	8250.0	0.00	0.51	3.36	8250.00	689.7	0.00004	523.2

SEGMENT TABLE FOR SECTION 29.1

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2105.	15.	1054.	1036.
2105.	VELOCITY FPS	0.77	0.32	0.98	0.49
2	DISCHARGE CFS	4090.	66.	1403.	2621.
4090.	VELOCITY FPS	0.64	0.32	0.82	0.51
3	DISCHARGE CFS	6090.	111.	1976.	4003.
6090.	VELOCITY FPS	0.82	0.42	1.05	0.67
4	DISCHARGE CFS	6640.	124.	2134.	4382.
6640.	VELOCITY FPS	0.87	0.44	1.12	0.72
5	DISCHARGE CFS	8250.	157.	2602.	5491.
8250.	VELOCITY FPS	1.02	0.50	1.32	0.85
1	ELEV 695.2 KD	297293.	2101.	148872.	146320.
2	ELEV 703.1 KD	934267.	14957.	320917.	598393.
3	ELEV 705.2 KD	1154755.	21045.	374921.	758788.
4	ELEV 705.6 KD	1199710.	22399.	385651.	791660.
5	ELEV 706.4 KD	1293653.	24571.	408347.	860735.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 29.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
680.40	0.					
681.	32.	54.	563.	1.	561.	1.
682.	88.	58.	2901.	1.	2899.	1.
683.	148.	62.	6574.	1.	6572.	1.
684.	211.	65.	11420.	1.	11418.	1.
685.	278.	69.	17379.	1.	17377.	1.
686.	349.	73.	24408.	1.	24406.	1.
687.	424.	76.	32506.	1.	32504.	1.
688.	502.	80.	41655.	1.	41653.	1.
689.	683.	244.	54817.	11.	53275.	734.
690.	1003.	372.	74002.	64.	66055.	6710.
691.	1406.	419.	101895.	196.	79898.	20437.
692.	1830.	430.	137872.	432.	94792.	41976.
693.	2264.	440.	180728.	793.	110690.	68980.
694.	2709.	451.	229944.	1296.	127589.	101089.
695.	3163.	456.	285679.	1950.	145343.	138156.
696.	3622.	461.	347121.	2778.	164043.	179924.
697.	4086.	467.	414570.	3812.	183661.	226877.
698.	4554.	472.	487706.	5063.	204169.	278474.
699.	5030.	477.	565247.	6516.	225495.	333057.
700.	5511.	483.	648299.	8219.	247680.	392235.
701.	5996.	488.	736625.	10178.	270700.	455672.
702.	6487.	494.	829458.	12356.	294514.	522451.
703.	6984.	500.	927257.	14776.	319130.	593217.
704.	7485.	506.	1030344.	17462.	344554.	668328.
705.	7996.	512.	1137375.	20526.	370710.	746018.
706.	8511.	519.	1249282.	23558.	397652.	828005.
707.	9034.	529.	1365165.	26213.	425346.	913567.
708.	9569.	535.	1488428.	30508.	453761.	1003981.
709.	10107.	540.	1618236.	35742.	482941.	1099553.
710.	10647.	540.	1747783.	40897.	512645.	1192970.
711.	11187.	540.	1882874.	46587.	543099.	1290821.
712.	11727.	540.	2023557.	52846.	574294.	1393161.
713.	12267.	540.	2169875.	59712.	606226.	1500045.

***** WSPC MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 29.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	688.6	0.0	0.0							
LOW GRND	692.0	156.4	172.3	0.00	4.37	4.37				60.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	692.0	156.4	172.3	0.00	4.37	4.37				60.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	697.0	1910.5	2105.0	0.00	4.37	25.23	2105.00	693.0	0.00058	442.2
2	703.5	5255.1	4090.0	0.00	4.37	36.39	4090.00	693.9	0.00013	637.6
3	705.6	6714.7	6090.0	0.00	4.37	41.13	6090.00	694.3	0.00015	720.7
4	706.1	7025.9	6640.0	0.00	4.37	41.94	6640.00	694.4	0.00016	734.9
5	707.0	7724.5	8250.0	0.00	4.37	43.50	8250.00	694.8	0.00019	762.2

SEGMENT TABLE FOR SECTION 29.5

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2105.	382.	908.	815.
2105.	VELOCITY FPS	1.46	0.80	2.00	0.83
2	DISCHARGE CFS	4090.	873.	1228.	1989.
4090.	VELOCITY FPS	0.98	0.51	1.45	0.74
3	DISCHARGE CFS	6090.	1474.	1678.	2938.
6090.	VELOCITY FPS	1.14	0.60	1.72	0.90
4	DISCHARGE CFS	6640.	1653.	1798.	3189.
6640.	VELOCITY FPS	1.19	0.63	1.80	0.94
5	DISCHARGE CFS	8250.	2177.	2154.	3918.
8250.	VELOCITY FPS	1.33	0.72	2.04	1.08
1	ELEV 697.0 KD	87192.	15747.	37858.	33588.
2	ELEV 703.5 KD	355786.	75727.	106954.	173105.
3	ELEV 705.6 KD	491572.	118830.	135574.	237168.
4	ELEV 706.1 KD	521890.	129545.	141552.	250793.
5	ELEV 707.0 KD	593036.	156242.	155006.	281788.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 29.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
688.60	0.					
689.	13.	35.	157.	1.	154.	1.
690.	53.	44.	1312.	1.	1310.	1.
691.	101.	52.	3397.	1.	3395.	1.
692.	156.	60.	6420.	1.	6418.	1.
693.	317.	240.	11925.	208.	11010.	444.
694.	636.	420.	21615.	1608.	16582.	3426.
695.	1061.	427.	38790.	4977.	22998.	10683.
696.	1492.	435.	61267.	9825.	30232.	21049.
697.	1931.	442.	88641.	16057.	38245.	34240.
698.	2377.	450.	120423.	23515.	46993.	49848.
699.	2831.	457.	156370.	32159.	56447.	67717.
700.	3298.	479.	194334.	40003.	66578.	87688.
701.	3792.	525.	232818.	45609.	77374.	109816.
702.	4341.	585.	275840.	53097.	88810.	133933.
703.	4947.	620.	328396.	67702.	100856.	159786.
704.	5587.	656.	385971.	84823.	113511.	187552.
705.	6266.	695.	448628.	104612.	126757.	217131.
706.	6975.	733.	517032.	127736.	140591.	248609.
707.	7723.	762.	593031.	156199.	154985.	281740.
708.	8503.	790.	674851.	188185.	169932.	316534.
709.	9306.	817.	762532.	223851.	185431.	353098.
710.	10131.	845.	856024.	263173.	201470.	391381.
711.	10976.	845.	956690.	305433.	217934.	430371.
712.	11821.	845.	1064015.	352180.	234935.	471286.
713.	12666.	845.	1178126.	403668.	252469.	514132.
714.	13511.	845.	1299146.	460156.	270527.	558917.

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 29.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	692.1	0.0	0.0							
LOW GRND	698.0	297.9	456.9	0.00	5.08	5.08				83.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	698.0	297.9	456.9	0.00	5.08	5.08				83.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	700.7	1372.3	2105.0	0.00	5.08	33.56	2105.00	696.8	0.00154	578.8
2	704.6	4016.2	4090.0	0.00	5.08	44.30	4090.00	699.0	0.00042	763.9
3	706.6	5618.8	6090.0	0.00	5.08	46.84	6090.00	699.6	0.00036	807.7
4	707.0	5965.7	6640.0	0.00	5.08	47.34	6640.00	699.7	0.00037	816.4
5	708.0	6797.1	8250.0	0.00	5.08	48.52	8250.00	700.0	0.00039	836.6

SEGMENT TABLE FOR SECTION 29.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2105.	557.	1481.	68.
2105.	VELOCITY FPS	2.47	0.75	2.85	0.59
2	DISCHARGE CFS	4090.	1902.	1737.	451.
4090.	VELOCITY FPS	1.47	0.80	2.06	0.58
3	DISCHARGE CFS	6090.	2969.	2204.	917.
6090.	VELOCITY FPS	1.48	0.89	2.18	0.71
4	DISCHARGE CFS	6640.	3257.	2341.	1042.
6640.	VELOCITY FPS	1.51	0.93	2.23	0.75
5	DISCHARGE CFS	8250.	4096.	2744.	1409.
8250.	VELOCITY FPS	1.62	1.02	2.43	0.85
1	ELEV 700.7 KD	53169.	13468.	38107.	1594.
2	ELEV 704.6 KD	200192.	93029.	85420.	21742.
3	ELEV 706.6 KD	318728.	155334.	115805.	47590.
4	ELEV 707.0 KD	347411.	170392.	122704.	54315.
5	ELEV 708.0 KD	417468.	207225.	139345.	70898.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 29.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
692.10	0.					
693.	29.	35.	568.	1.	565.	1.
694.	68.	41.	2039.	1.	2037.	1.
695.	112.	47.	4294.	1.	4291.	1.
696.	162.	54.	7231.	1.	7229.	1.
697.	223.	68.	10583.	1.	10581.	1.
698.	298.	83.	15075.	1.	15073.	1.
699.	567.	345.	24410.	1070.	22631.	82.
700.	1005.	509.	39292.	6430.	31481.	702.
701.	1564.	595.	61811.	17640.	41450.	2183.
702.	2184.	646.	91788.	34000.	52481.	4965.
703.	2860.	700.	128301.	54013.	64507.	9419.
704.	3583.	746.	171967.	77853.	77533.	16277.
705.	4345.	775.	223135.	105087.	91502.	26400.
706.	5128.	795.	281219.	135629.	106384.	39206.
707.	5936.	816.	344986.	169057.	122102.	53708.
708.	6764.	836.	414783.	205708.	138676.	70200.
709.	7609.	856.	491000.	245854.	156120.	88903.
710.	8472.	876.	573375.	289322.	174400.	109653.
711.	9380.	922.	655218.	335425.	193416.	126328.
712.	10327.	969.	743325.	384433.	213242.	145590.
713.	11316.	1026.	834979.	435086.	233852.	166034.
714.	12371.	1122.	920324.	483113.	255186.	182011.
715.	13605.	1305.	998147.	525731.	277270.	195125.
716.	14958.	1545.	1070522.	564308.	300116.	206098.
717.	16503.	1545.	1212475.	633437.	323299.	248544.
718.	18048.	1545.	1366542.	707812.	347254.	297534.
719.	19593.	1545.	1533223.	787599.	371974.	353761.
720.	21138.	1545.	1713021.	872969.	397456.	417964.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE,IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.85	0.16	0.05	0.97	-0.01	0.20	3.52	1.76	1.64	2.58	1311.31	855.45	696.33	0.00
2	0.59	0.81	0.05	0.83	-0.05	0.80	4.38	1.74	1.44	2.12	3774.66	2436.08	698.06	0.00
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSPZ MICROCOMPUTER TEST VERSION *****

ROAD SECTION 30.0 Riley

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	692.50	0.0	0.00	692.50	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	700.99	2105.0	0.02	700.97	2105.00	2105.0	598.8	0.0	0.0	0.0	0.0	0.0
2	704.97	4090.0	0.32	704.65	4090.00	4090.0	934.8	0.0	0.0	0.0	0.0	0.0
3	707.16	6090.0	0.48	706.68	6090.00	4276.1	967.1	0.0	0.0	1813.9	575.9	449.3
4	707.56	6640.0	0.46	707.10	6640.00	4123.0	967.1	0.0	0.0	2517.0	770.5	502.0
5	708.53	8250.0	0.42	708.11	8250.00	3925.9	967.1	0.0	0.0	4324.1	1311.5	609.9

MIN ROAD ELEVATION = 705.30 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 704.30 FT OPENING NO.= 1

***** WSP2 MICROCOMPUTER TEST VERSION *****

x SEE 305. lowered by 37'

RATING TABLE FOR SECTION 30.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	692.5	0.0	0.0							
LOW GRND	698.3	263.0	578.2	0.00	0.56	0.56				90.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	698.3	263.0	578.2	0.00	0.56	0.56				90.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	701.3	957.5	2105.0	0.00	0.56	2.13	2105.00	697.7	0.00268	343.6
2	705.1	2478.6	4090.0	0.00	0.56	2.69	4090.00	699.7	0.00097	433.6
3	707.2	3473.7	6090.0	0.00	0.56	3.02	6090.00	700.5	0.00088	487.2
4	707.7	3676.3	6640.0	0.00	0.56	3.10	6640.00	700.7	0.00090	500.7
5	708.6	4182.0	8250.0	0.00	0.56	3.30	8250.00	701.1	0.00099	532.0

SEGMENT TABLE FOR SECTION 30.1

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2105.	197.	1715.	193.
2105.	VELOCITY FPS	2.97	1.00	3.22	0.85
2	DISCHARGE CFS	4090.	697.	2364.	1029.
4090.	VELOCITY FPS	2.18	1.09	2.71	1.06
3	DISCHARGE CFS	6090.	1097.	3151.	1842.
6090.	VELOCITY FPS	2.29	1.13	2.95	1.29
4	DISCHARGE CFS	6640.	1206.	3379.	2055.
6640.	VELOCITY FPS	2.36	1.15	3.06	1.35
5	DISCHARGE CFS	8250.	1554.	4032.	2664.
8250.	VELOCITY FPS	2.58	1.24	3.38	1.54
1	ELEV 701.3 KD	40380.	3577.	33337.	3467.
2	ELEV 705.1 KD	131598.	22411.	76101.	33086.
3	ELEV 707.2 KD	205659.	37039.	106578.	62042.
4	ELEV 707.7 KD	221428.	40181.	112821.	68426.
5	ELEV 708.6 KD	261743.	49231.	128140.	84372.

***** WSP2 MICROCOMPUTER TEST VERSION *****

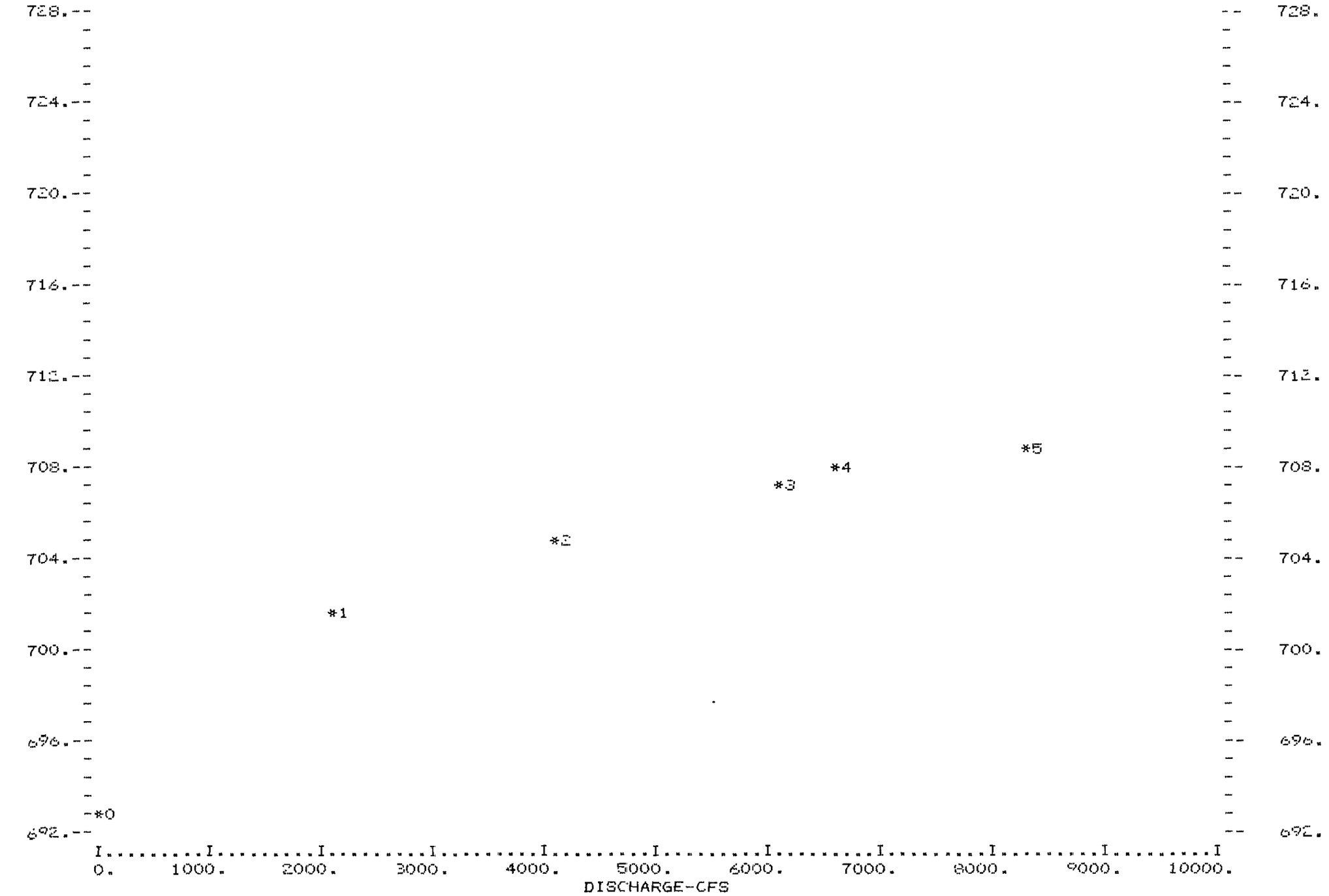
K.D TABLE FOR CROSS SECTION 30.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
692.50	0.					
693.	15.	31.	187.	1.	185.	1.
694.	48.	34.	1160.	1.	1158.	1.
695.	83.	37.	2735.	1.	2733.	1.
696.	121.	39.	4835.	1.	4833.	1.
697.	168.	58.	6533.	1.	6531.	1.
698.	238.	83.	9216.	1.	9214.	1.
699.	360.	158.	14904.	47.	14662.	48.
700.	566.	251.	23763.	743.	22070.	735.
701.	858.	326.	36209.	2746.	30627.	2632.
702.	1213.	379.	52862.	6111.	40262.	6294.
703.	1611.	409.	74183.	10552.	50907.	12513.
704.	2024.	418.	100226.	16080.	62566.	21501.
705.	2447.	432.	129277.	21927.	75127.	32164.
706.	2890.	450.	161654.	28587.	88570.	44402.
707.	3357.	479.	196647.	35349.	102903.	58315.
708.	3854.	512.	235140.	43212.	118083.	73755.
709.	4377.	544.	278071.	53055.	134132.	90858.
710.	4939.	574.	325373.	65238.	150925.	109135.
711.	5530.	603.	377254.	79750.	168514.	128869.
712.	6143.	627.	434639.	97361.	186900.	150250.
713.	6779.	639.	499056.	119549.	206035.	173416.
714.	7419.	640.	563876.	141064.	225457.	195801.
715.	8059.	640.	632932.	164665.	245628.	219497.
716.	8699.	640.	706886.	190924.	266608.	244841.
717.	9339.	640.	785851.	220011.	288394.	271871.

***** WSP2 MICROCOMPUTER TEST VERSION *****

CROSS SECTION 30.1

SCALES ARE 1 INCH = 1000. CFS, AND 4.8 FEET/ ELEVATION



***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 30.5 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	696.2	0.0	0.0							
LOW GRND	702.0	263.0	403.1	0.00	8.89	8.89				90.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	702.0	263.0	403.1	0.00	8.89	8.89				90.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	706.1	1373.5	2105.0	0.00	8.89	26.30	2105.00	701.4	0.00106	395.0
2	708.7	2431.4	4090.0	0.00	8.89	28.75	4090.00	703.4	0.00086	431.9
3	710.7	3363.9	6090.0	0.00	8.89	31.93	6090.00	704.2	0.00078	479.6
4	711.1	3568.7	6640.0	0.00	8.89	32.88	6640.00	704.4	0.00079	493.8
5	712.2	4102.5	8250.0	0.00	8.89	35.09	8250.00	704.8	0.00085	527.1

SEGMENT TABLE FOR SECTION 30.5

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2105.	315.	1441.	350.
2105.	VELOCITY FPS	1.97	0.99	2.28	0.83
2	DISCHARGE CFS	4090.	774.	2180.	1136.
4090.	VELOCITY FPS	2.03	1.24	2.53	1.20
3	DISCHARGE CFS	6090.	1208.	2879.	2003.
6090.	VELOCITY FPS	2.15	1.29	2.75	1.45
4	DISCHARGE CFS	6640.	1318.	3085.	2237.
6640.	VELOCITY FPS	2.21	1.31	2.84	1.52
5	DISCHARGE CFS	8250.	1696.	3650.	2904.
8250.	VELOCITY FPS	2.39	1.39	3.10	1.71
1	ELEV 706.1 KD	64361.	9488.	44496.	10378.
2	ELEV 708.7 KD	139655.	26411.	74630.	38613.
3	ELEV 710.7 KD	217628.	43186.	103131.	71312.
4	ELEV 711.1 KD	235848.	46833.	109607.	79408.
5	ELEV 712.2 KD	283324.	58131.	125665.	99528.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 30.5

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
696.20	0.					
697.	25.	32.	407.	1.	405.	1.
698.	58.	35.	1575.	1.	1572.	1.
699.	94.	37.	3312.	1.	3310.	1.
700.	134.	43.	5371.	1.	5368.	1.
701.	186.	65.	7111.	1.	7108.	1.
702.	263.	90.	10309.	1.	10307.	1.
703.	413.	187.	17345.	158.	16737.	159.
704.	648.	276.	27661.	1422.	24504.	1380.
705.	960.	344.	42333.	4380.	33395.	4246.
706.	1331.	391.	62117.	8902.	43343.	9585.
707.	1735.	411.	87401.	14685.	54275.	18094.
708.	2151.	422.	117618.	21557.	66203.	29688.
709.	2579.	438.	151605.	29033.	79063.	43498.
710.	3024.	456.	189567.	37536.	92821.	59210.
711.	3499.	489.	229612.	45576.	107390.	76593.
712.	4009.	521.	274752.	56028.	122797.	95818.
713.	4545.	553.	325072.	68850.	139065.	117065.
714.	5107.	584.	380681.	84358.	156157.	140167.
715.	5711.	612.	441666.	103033.	173952.	164569.
716.	6334.	630.	510239.	126267.	192545.	191211.
717.	6971.	640.	585213.	153529.	211821.	219472.
718.	7611.	640.	660795.	180128.	231423.	246958.
719.	8251.	640.	742082.	209826.	251837.	276420.
720.	8891.	640.	829229.	242825.	273059.	307903.

***** WSP2 MICROCOMPUTER TEST VERSION *****

```
----------------------- LIST OF INPUT DATA WITH LIMITED EDITING-----------------------
TITLE     DISCHARGE ABOVE JUDDVILLE ROAD
CHANGE    DISCHARGE
DISCHARGE -1.       2070.     3850.     5510.     5920.     7230.
END
BPR       31.0      A         3                                       154
GIRDER    712.9     712.4     45.       .8        2.7                 155
          -26.1     715.7     -26.      712.4     26.       712.4     156
          26.1      715.7                                             157
ENDTABLE                                                              158
SECTION   31.0                                                        159
          -550.     725.      -300.     718.1     -200.     716.7     160
          -100.     716.      -26.1     715.7     -26.      700.7     161
          0.        699.8     26.       701.7     26.1      715.7     162
          100.      715.9     200.      716.1     300.      716.7     163
          400.      718.4     750.      725.                          164
ENDTABLE                                                              165
SEGMENT   31.1      1         N         -25.                          166
N VALUE   .120                                                        167
SEGMENT   31.1      2         C         25.                           168
N VALUE   .076                                                        169
SEGMENT   31.1      3         N         375.                          170
N VALUE   .120                                                        171
SECTION   31.1                                                        172
          -450.     716.      -350.     714.      -270.     710.      173
          -25.      708.      -15.      704.      0.        700.      174
          15.       704.      25.       706.      340.      708.      175
          375.      716.      -451.     718.      376.      718.      176
ENDTABLE                                                              177
---------------------MESSAGE - DATA POINTS ON SECTION 31.1   REORDERED BY PROGRAM ACCORDING TO X VALUES
                    DUPLICATE X POINTS NOT CHANGED---------------------
COMPUT    30.9      31.1      30.5
-----------------------------END OF DATA LISTING-----------------------------
```

COMPUT 30.9 31.1 30.5

----------STARTING DATA FROM PREVIOUS COMPUTATIONS----------

***** WSP2 MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 30.9 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	ACRES FLOODED CHANNEL	ACRES FLOODED TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	699.7	0.0	0.0							
LOW GRND	708.0	387.3	690.7	0.00	6.95	6.95				77.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	708.0	387.3	690.7	0.00	6.95	6.95				77.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	710.9	1160.6	2070.0	0.00	6.95	25.33	2070.00	704.5	0.00128	332.8
2	713.3	2078.1	3850.0	0.00	6.95	31.18	3850.00	706.8	0.00114	409.6
3	714.9	2777.2	5510.0	0.00	6.95	34.01	5510.00	709.0	0.00112	446.8
4	715.4	2980.0	5920.0	0.00	6.95	34.68	5920.00	709.2	0.00107	455.6
5	716.4	3472.1	7230.0	0.00	6.95	35.79	7230.00	709.6	0.00106	470.1

SEGMENT TABLE FOR SECTION 30.9

CSM		TOTAL	SEG NO 1 N	SEG NO 2 C	SEG NO 3 N
1	DISCHARGE CFS	2070.	19.	1619.	432.
2070.	VELOCITY FPS	2.41	0.63	2.66	0.83
2	DISCHARGE CFS	3850.	91.	2406.	1354.
3850.	VELOCITY FPS	2.50	0.87	3.02	1.15
3	DISCHARGE CFS	5510.	183.	3037.	2290.
5510.	VELOCITY FPS	2.63	1.03	3.30	1.36
4	DISCHARGE CFS	5920.	210.	3168.	2541.
5920.	VELOCITY FPS	2.61	1.05	3.31	1.39
5	DISCHARGE CFS	7230.	305.	3604.	3321.
7230.	VELOCITY FPS	2.69	1.17	3.47	1.53
1	ELEV 710.9 KD	57631.	494.	45484.	11652.
2	ELEV 713.3 KD	113784.	2627.	71472.	39685.
3	ELEV 714.9 KD	164235.	5348.	91126.	67761.
4	ELEV 715.4 KD	180685.	6360.	97002.	77323.
5	ELEV 716.4 KD	221844.	9226.	111108.	101509.

***** WSP2 MICROCOMPUTER TEST VERSION *****

KD TABLE FOR CROSS SECTION 30.9

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	KD TOTAL	KD BY SEGMENT 1	2	3
699.70	0.					
700.	9.	31.	82.	1.	79.	1.
701.	42.	35.	923.	1.	921.	1.
702.	78.	38.	2421.	1.	2419.	1.
703.	118.	42.	4497.	1.	4495.	1.
704.	161.	45.	7127.	1.	7125.	1.
705.	208.	49.	10314.	1.	10312.	1.
706.	258.	53.	13937.	1.	13934.	1.
707.	317.	64.	17235.	1.	17233.	1.
708.	387.	77.	21503.	1.	21501.	1.
709.	615.	248.	30928.	21.	29031.	1345.
710.	892.	296.	43820.	177.	37496.	5647.
711.	1209.	338.	60425.	558.	46839.	12723.
712.	1563.	373.	80921.	1229.	56998.	22545.
713.	1947.	401.	105559.	2251.	67939.	35369.
714.	2365.	427.	134004.	3643.	79576.	50647.
715.	2806.	448.	166732.	5481.	91938.	69044.
716.	3262.	465.	204022.	7916.	105052.	90865.
717.	3733.	477.	245989.	11096.	118878.	116015.
718.	4210.	477.	286957.	13835.	132767.	138924.
719.	4687.	477.	332013.	17048.	147410.	164768.
720.	5164.	477.	381325.	20787.	162805.	193742.
721.	5641.	477.	435052.	25105.	178950.	226043.

TABLE OF VALUES FOR BPR EQUATION

IF AN * SYMBOL APPEARS BESIDE A VARIABLE IN THIS TABLE, IT IS
EXTRAPOLATED FROM FIGURES 6,7,10, OR 34 OF THE BPR MANUAL.

NO.	M	AKB	DLTAK	SIGMA	DKS	COEFK	VN2 FPS	ALPHA	ALPHA2	ALPHA3	AEXIT SQ FT	APPAR SQ FT	DCRIT FT	CRIT COEF
1	0.26	2.39*	0.00	0.00	-0.65*	1.74	5.28	1.75	1.20	1.84	1228.60	3042.00	704.16	0.00
2	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
3	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
4	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													
5	ORIFICE FLOW FOR THIS PROFILE. COEF = 0.80													

***** WSP2 MICROCOMPUTER TEST VERSION *****

ROAD SECTION 31.0 Juddville

NO.	HW FT	CFS	HL FT	TW FT	STARTING CSM	BRIDGE CFS	BRIDGE AREA SQ FT	CULVERT CFS	CULVERT AREA SQ FT	WEIR CFS	WEIR AREA SQ FT	WEIR TOP WIDTH FT
0	699.80	0.0	0.00	699.80	0.00	0.0	0.0	0.0	0.0	0.0	0.0	0.0
1	712.14	2070.0	0.98	711.16	2070.00	2070.0	392.3	0.0	0.0	0.0	0.0	0.0
2	714.53	3850.0	0.94	713.59	3850.00	3850.0	619.9	0.0	0.0	0.0	0.0	0.0
3	716.65	5510.0	1.44	715.21	5510.00	4751.9	619.9	0.0	0.0	758.1	289.9	483.3
4	716.97	5920.0	1.32	715.65	5920.00	4534.1	619.9	0.0	0.0	1385.9	458.3	535.7
5	717.71	7230.0	1.00	716.71	7230.00	3954.8	619.9	0.0	0.0	3275.2	885.9	631.1

MIN ROAD ELEVATION = 715.70 FT

BRIDGE TYPE = BPR GIRDER BOTTOM ELEVATION = 712.40 FT OPENING NO.= 1

Sum a Bridge Seat ~ 712

***** WSPG MICROCOMPUTER TEST VERSION *****

RATING TABLE FOR SECTION 31.1 DA= 1.0 SQ MI

NO.	ELEV FT	AREA SQ FT	Q CFS	ACRES FLOODED FLOODPLAIN DAMAGE	CHANNEL	TOTAL	STARTING CSM	CRIT ELEV FT	FRICTION SLOPE FT/FT	FLOW TOP WIDTH FT
0	700.0	0.0	0.0							
LOW GRND	706.0	135.0	93.8	0.00	0.62	0.62				45.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
BANK FULL	706.0	135.0	93.8	0.00	0.62	0.62				45.0
*****MESSAGE- ELEV BELOW FIRST PROFILE. FLOW INTERPOLATED LINEARLY FROM CHANNEL BOTTOM*****										
1	712.2	2978.5	2070.0	0.00	0.69	9.28	2070.00	707.2	0.00030	673.4
2	714.6	4661.6	3850.0	0.00	0.69	10.34	3850.00	708.0	0.00030	750.5
3	716.7	6349.5	5510.0	0.00	0.69	11.33	5510.00	708.4	0.00026	822.2
4	717.1	6621.0	5920.0	0.00	0.69	11.36	5920.00	708.5	0.00026	825.1
5	717.8	7235.8	7230.0	0.00	0.69	11.38	7230.00	708.9	0.00030	826.5

SEGMENT TABLE FOR SECTION 31.1

CSM		TOTAL	SEG NO 1 N	2 C	3 N
1	DISCHARGE CFS	2070.	372.	625.	1073.
2070.	VELOCITY FPS	0.92	0.44	1.41	0.63
2	DISCHARGE CFS	3850.	929.	924.	1998.
3850.	VELOCITY FPS	1.03	0.58	1.65	0.80
3	DISCHARGE CFS	5510.	1566.	1139.	2805.
5510.	VELOCITY FPS	1.06	0.64	1.71	0.87
4	DISCHARGE CFS	5920.	1723.	1198.	2999.
5920.	VELOCITY FPS	1.08	0.67	1.75	0.90
5	DISCHARGE CFS	7230.	2223.	1393.	3614.
7230.	VELOCITY FPS	1.19	0.77	1.93	1.00
1	ELEV 712.2 KD	119049.	21303.	36028.	61718.
2	ELEV 714.6 KD	223569.	53905.	53663.	116001.
3	ELEV 716.7 KD	344160.	97135.	71458.	175567.
4	ELEV 717.1 KD	367237.	106622.	74442.	186173.
5	ELEV 717.8 KD	420335.	128578.	81302.	210455.

***** WSP2 MICROCOMPUTER TEST VERSION *****

FD TABLE FOR CROSS SECTION 31.1

ELEVATION FT	AREA SQ FT	TOP WIDTH FT	FD TOTAL	FD BY SEGMENT 1	2	3
700.00	0.					
701.	4.	7.	47.	1.	45.	1.
702.	15.	15.	289.	1.	287.	1.
703.	34.	22.	847.	1.	845.	1.
704.	60.	30.	1822.	1.	1820.	1.
705.	94.	37.	3301.	1.	3299.	1.
706.	135.	45.	5366.	1.	5364.	1.
707.	260.	205.	9058.	1.	8443.	614.
708.	545.	365.	16023.	1.	12121.	3901.
709.	973.	492.	29644.	478.	16825.	12342.
710.	1529.	619.	49428.	3034.	22126.	24268.
711.	2160.	643.	76701.	9455.	27992.	39253.
712.	2817.	667.	109790.	18393.	34374.	56790.
713.	3499.	692.	148868.	30237.	41288.	77131.
714.	4206.	725.	192996.	44107.	48711.	100058.
715.	4951.	771.	241801.	59671.	56622.	125433.
716.	5741.	816.	296695.	78288.	65002.	153276.
717.	6566.	824.	362596.	104635.	73830.	183982.
718.	7392.	827.	434729.	134551.	83089.	216868.
719.	8219.	827.	509829.	165896.	92673.	250792.
720.	9046.	827.	584080.	195640.	102468.	284375.
721.	9873.	827.	664721.	228867.	112744.	320483.
722.	10700.	827.	751956.	265790.	123500.	359172.

***** WSP2 MICROCOMPUTER TEST VERSION *****

---------- LIST OF INPUT DATA WITH LIMITED EDITING----------

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END
ENDJOB
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**********NORMAL END OF JOB----------

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: 100YR + 500 YR SUMMARY

00BREAK00

THIS RUN EXECUTED 19AUG91 14:42:15

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*************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED JUN  1990

  ERROR CORR -  01,02,03,04
  MODIFICATION -
*************************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YEAR FLOOD

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
0.023	0.00	0.00	0.00	552.90	66100.00	579.34	0.00	579.58	1.57	3 96	16696.02	52723.91
0.023	0.00	0.00	0.00	552.90	78600.00	579.34	0.00	579.68	2.22	4.71	16696.02	52723.91
0.335	1650.00	0.00	0.00	550.80	66100.00	579.55	0 00	579.86	1.65	4.46	14834.24	51501.93
0.335	1650.00	0.00	0.00	550.80	78600 00	579.64	0.00	580.07	2.29	5.27	14925.21	51943.27
1.189	4510.00	0.00	0.00	553.30	66100.00	580.45	0.00	580 71	2.17	4.15	15931.60	44909.77
1.189	4510.00	0.00	0.00	553.30	78600.00	580.87	0.00	581.22	2.80	4.74	16572.73	47000.93
1 761	3020.00	0.00	0.00	546.30	66100.00	580 89	0.00	581.30	1.59	5.15	12842.05	52487.20
1.761	3020.00	0.00	0.00	546.30	78600.00	581.43	0 00	581.98	2.07	5.95	13218.20	54693.40
2.223	2440.00	0.00	0.00	551.00	66100.00	581 32	0.00	581.67	1.44	4.76	13897.10	55121.95
2.223	2440.00	0.00	0.00	551.00	78600.00	582.00	0 00	582.46	1.83	5.45	14436.91	58150.67
2.576	1860.00	0.00	0.00	549.40	66100.00	581.62	0.00	581.87	0.76	4.07	16293.71	75614.37
2.576	1860.00	0.00	0.00	549.40	78600.00	582.38	0.00	582.72	0.97	4.68	16784.53	79643.46
2.808	1232 00	0.00	0.00	547.90	66100.00	581.70	0.00	582.00	1.25	4.40	15025 41	59048.55
2.808	1232.00	0.00	0.00	547.90	78600.00	582.48	0.00	582.88	1.58	5.05	15561.02	62506.77
2.809	1.00	0.00	0.00	547.90	66100.00	581.65	0 00	582.01	2.09	4 87	13572.78	45712.61
2.809	1.00	0.00	0.00	547.90	78600.00	582.41	0.00	582.90	2.67	5.59	14050.38	48080.08
2.813	17.00	0.00	0.00	547 90	66100.00	581.65	0.00	582.02	2.09	4.87	13574.55	45721.33
2.813	17.00	0.00	0 00	547.90	78600.00	582 42	0.00	582.90	2.67	5.59	14052.63	48091.79
2.814	1.00	0.00	0.00	547.90	66100.00	581.72	0 00	582 02	1.25	4.39	15042.48	59157.48
2.814	1.00	0.00	0.00	547 90	78600.00	582.52	0.00	582.91	1.57	5.04	15583.67	62654.57
2.947	709.00	0.00	0.00	551.80	66100.00	581.89	0.00	582.11	1.02	3.80	17413.13	65365.53
2.947	709.00	0.00	0 00	551.80	78600.00	582.74	0.00	583.02	1.22	4.29	18332.38	71189.40

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	3.350	2130.00	0.00	0.00	551.60	66100.00	582.11	0.00	582.37	1.39	4.08	16181.77	56011.95
	3.350	2130.00	0.00	0.00	551.60	78600.00	583.00	0.00	583.33	1.61	4.57	17216.65	61878.16
	3.600	1322.00	0.00	0.00	544.00	66100.00	582.23	0.00	582.52	0.86	4.31	15349.49	71279.25
	3.600	1322.00	0.00	0.00	544.00	78600.00	583.14	0.00	583.51	1.14	4.92	15988.53	73660.65
*	3.601	1.00	0.00	0.00	544.00	66100.00	582.13	0.00	582.55	1.93	5.18	12769.87	47546.57
*	3.601	1.00	0.00	0.00	544.00	78600.00	583.00	0.00	583.55	2.53	5.91	13294.56	49387.12
	3.615	73.50	0.00	0.00	544.00	66100.00	582.14	0.00	582.56	1.93	5.17	12775.83	47593.12
	3.615	73.50	0.00	0.00	544.00	78600.00	583.02	0.00	583.57	2.53	5.91	13303.60	49428.31
*	3.616	1.00	0.00	0.00	544.00	66100.00	582.29	0.00	582.57	0.86	4.30	15384.05	71379.57
*	3.616	1.00	0.00	0.00	544.00	78600.00	583.21	0.00	583.58	1.13	4.91	16044.99	73981.46
	3.646	162.50	0.00	0.00	548.90	66100.00	582.30	0.00	582.59	0.95	4.29	15414.96	67816.82
	3.646	162.50	0.00	0.00	548.90	78600.00	583.23	0.00	583.60	1.16	4.88	16109.81	72861.13
	3.689	231.00	0.00	0.00	547.40	66100.00	582.28	0.00	582.62	1.07	4.71	14034.06	63790.46
	3.689	231.00	0.00	0.00	547.40	78600.00	583.20	0.00	583.65	1.35	5.39	14592.80	67589.87
	3.690	1.00	0.00	0.00	547.40	66100.00	582.24	0.00	582.63	1.59	5.00	13207.96	52424.08
	3.690	1.00	0.00	0.00	547.40	78600.00	583.15	0.00	583.66	2.04	5.73	13713.94	55086.24
	3.697	35.50	0.00	0.00	547.40	66100.00	582.25	0.00	582.64	1.59	5.00	13210.60	52438.88
	3.697	35.50	0.00	0.00	547.40	78600.00	583.16	0.00	583.67	2.03	5.73	13717.30	55103.76
	3.698	1.00	0.00	0.00	547.40	66100.00	582.30	0.00	582.64	1.04	4.71	14046.12	64692.35
	3.698	1.00	0.00	0.00	547.40	78600.00	583.22	0.00	583.67	1.31	5.38	14608.99	68689.74
	4.366	3550.00	0.00	0.00	548.20	66100.00	582.72	0.00	582.98	0.83	4.08	16195.50	72425.03
	4.366	3550.00	0.00	0.00	548.20	78600.00	583.76	0.00	584.09	1.01	4.63	17033.39	78050.81
	4.677	1649.00	0.00	0.00	545.50	66100.00	582.83	0.00	583.14	0.96	4.46	14834.63	67450.48
	4.677	1649.00	0.00	0.00	545.50	78600.00	583.89	0.00	584.28	1.17	5.06	15529.03	72646.81
	4.678	1.00	0.00	0.00	545.50	66100.00	582.79	0.00	583.15	1.58	4.79	13785.27	52578.14
	4.678	1.00	0.00	0.00	545.50	78600.00	583.84	0.00	584.30	1.95	5.45	14425.02	56240.93
	4.682	20.00	0.00	0.00	545.50	66100.00	582.79	0.00	583.15	1.58	4.79	13786.82	52586.95
	4.682	20.00	0.00	0.00	545.50	78600.00	583.84	0.00	584.30	1.95	5.45	14426.93	56251.97
	4.683	1.00	0.00	0.00	545.50	66100.00	582.85	0.00	583.16	0.96	4.45	14846.84	67540.60
	4.683	1.00	0.00	0.00	545.50	78600.00	583.91	0.00	584.31	1.17	5.06	15544.84	72766.76
	4.835	809.00	0.00	0.00	551.00	66100.00	583.01	0.00	583.23	0.73	3.82	17313.63	77315.69
	4.835	809.00	0.00	0.00	551.00	78600.00	584.11	0.00	584.40	0.87	4.31	18260.26	84215.07
	4.967	702.00	0.00	0.00	553.20	66100.00	583.03	0.00	583.30	1.08	4.22	15681.21	63492.70
	4.967	702.00	0.00	0.00	553.20	78600.00	584.14	0.00	584.49	1.28	4.74	16575.76	69519.34

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	4.968	1.00	0.00	0.00	553.20	66100.00	582.98	0.00	583.32	1.80	4.65	14293.44	49271.58
	4.968	1.00	0.00	0.00	553.20	78600.00	584.08	0.00	584.50	2.16	5.23	15025.31	53494.27
	4.975	34.00	0.00	0.00	553.20	66100.00	582.99	0.00	583.32	1.80	4.65	14227.03	49290.24
	4.975	34.00	0.00	0.00	553.20	78600.00	584.08	0.00	584.51	2.16	5.23	15029.59	53517.03
	4.976	1.00	0.00	0.00	553.20	66100.00	583.05	0.00	583.33	1.08	4.21	15701.40	63626.41
	4.976	1.00	0.00	0.00	553.20	78600.00	584.17	0.00	584.52	1.27	4.73	16601.24	69694.05
	5.152	932.00	0.00	0.00	555.90	65900.00	583.12	0.00	583.44	1.11	4.50	14639.35	62554.43
	5.152	932.00	0.00	0.00	555.90	78400.00	584.25	0.00	584.65	1.30	5.06	15846.48	68655.94
	5.325	920.00	0.00	0.00	552.90	65900.00	583.18	0.00	583.55	1.09	4.86	13563.57	63051.21
	5.325	920.00	0.00	0.00	552.90	78400.00	584.31	0.00	584.78	1.31	5.51	14298.20	68383.55
*	5.326	1.00	0.00	0.00	552.90	65900.00	583.05	0.00	583.58	2.32	5.86	11240.94	43295.62
*	5.326	1.00	0.00	0.00	552.90	78400.00	584.14	0.00	584.82	2.85	6.65	11835.30	46466.76
	5.339	68.00	0.00	0.00	552.90	65900.00	583.07	0.00	583.60	2.31	5.86	11246.89	43328.84
	5.339	68.00	0.00	0.00	552.90	78400.00	584.16	0.00	584.84	2.84	6.64	11843.54	46508.53
*	5.340	1.00	0.00	0.00	552.90	65900.00	583.25	0.00	583.62	1.06	4.85	13605.24	63970.87
*	5.340	1.00	0.00	0.00	552.90	78400.00	584.40	0.00	584.87	1.28	5.49	14360.58	69391.70
	5.905	2990.00	0.00	0.00	556.30	65900.00	583.73	0.00	584.02	1.74	4.32	15272.00	49924.76
	5.905	2990.00	0.00	0.00	556.30	78400.00	584.99	0.00	585.33	1.82	4.69	16817.07	58193.48
	6.222	1670.00	0.00	0.00	553.10	57650.00	583.91	0.00	584.30	1.36	5.05	11417.89	49459.45
	6.222	1670.00	0.00	0.00	553.10	67300.00	585.16	0.00	585.63	1.51	5.54	12294.93	54845.76
	6.519	1573.00	0.00	0.00	546.10	57650.00	584.12	0.00	584.48	0.92	4.82	11967.59	59959.04
	6.519	1573.00	0.00	0.00	546.10	67300.00	585.39	0.00	585.84	1.09	5.37	12534.53	64541.92
*	6.520	1.00	0.00	0.00	546.70	57650.00	583.92	0.00	584.53	2.54	6.27	9194.24	36177.21
*	6.520	1.00	0.00	0.00	546.70	67300.00	585.14	0.00	585.90	3.01	6.98	9642.53	38809.98
	6.528	42.00	0.00	0.00	546.70	57650.00	583.93	0.00	584.54	2.54	6.27	9196.90	36192.64
	6.528	42.00	0.00	0.00	546.70	67300.00	585.16	0.00	585.91	3.00	6.98	9645.66	38828.50
*	6.529	1.00	0.00	0.00	546.10	57650.00	584.21	0.00	584.57	0.91	4.80	12007.23	60275.65
*	6.529	1.00	0.00	0.00	546.10	67300.00	585.50	0.00	585.94	1.07	5.35	12583.50	64943.14
	7.016	2578.00	0.00	0.00	553.00	57650.00	584.54	0.00	584.85	1.28	4.46	12937.71	50947.28
	7.016	2578.00	0.00	0.00	553.00	67300.00	585.90	0.00	586.26	1.36	4.83	14043.13	57619.97
	7.567	2910.00	0.00	0.00	554.10	57650.00	584.89	0.00	585.13	0.72	3.95	14765.05	67989.30
	7.567	2910.00	0.00	0.00	554.10	67300.00	586.28	0.00	586.57	0.79	4.31	16350.61	75737.71
	8.099	2810.00	0.00	0.00	553.00	57650.00	585.06	0.00	585.40	1.13	4.68	12479.47	54305.56
	8.099	2810.00	0.00	0.00	553.00	67300.00	586.46	0.00	586.87	1.26	5.14	13373.62	59963.33

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	8.241	750.00	0.00	0.00	554.30	65900.00	585.24	0.00	585.49	1.03	4.04	16850.37	65031.13
	8.241	750.00	0.00	0.00	554.30	78400.00	586.67	0.00	586.97	1.12	4.40	19542.57	74166.43
	9.079	4420.00	0.00	0.00	551.10	67100.00	585.76	0.00	585.95	1.05	3.64	20465.99	65447.01
	9.079	4420.00	0.00	0.00	551.10	80000.00	587.24	0.00	587.46	1.06	3.88	23267.74	77598.31
	9.584	2670.00	0.00	0.00	554.70	67100.00	586.07	0.00	586.26	1.28	3.71	20970.04	59193.13
	9.584	2670.00	0.00	0.00	554.70	80000.00	587.55	0.00	587.75	1.22	3.85	24298.14	72406.92
	10.240	3460.00	0.00	0.00	554.60	67100.00	586.44	0.00	586.60	0.80	3.49	25027.07	75205.52
	10.240	3460.00	0.00	0.00	554.60	80000.00	587.92	0.00	588.09	0.80	3.67	28519.27	89611.59
	10.993	3980.00	0.00	0.00	554.80	68400.00	586.73	0.00	587.01	1.26	4.24	16136.80	61014.86
	10.993	3980.00	0.00	0.00	554.80	82400.00	588.18	0.00	588.52	1.37	4.69	17608.45	70288.88
	11.433	2325.00	0.00	0.00	554.85	68400.00	587.00	0.00	587.31	1.26	4.46	15341.78	61006.51
	11.433	2325.00	0.00	0.00	554.85	82400.00	588.47	0.00	588.85	1.41	4.97	16593.20	69368.62
	11.802	1945.00	0.00	0.00	554.90	68400.00	587.18	0.00	587.57	1.30	5.14	14642.72	60085.79
	11.802	1945.00	0.00	0.00	554.90	82400.00	588.67	0.00	589.15	1.45	5.68	16237.10	68528.05
	12.569	4050.00	0.00	0.00	553.40	68400.00	587.80	0.00	587.98	0.73	3.60	22463.22	79980.47
	12.569	4050.00	0.00	0.00	553.40	82400.00	589.39	0.00	589.60	0.77	3.90	25102.00	93708.86
	13.249	3590.00	0.00	0.00	554.60	68400.00	587.97	0.00	588.32	0.97	4.74	15272.45	69609.66
	13.249	3590.00	0.00	0.00	554.60	82400.00	589.55	0.00	589.97	1.11	5.29	17092.71	78361.57
	13.747	2630.00	0.00	0.00	553.10	68400.00	588.30	0.00	588.57	0.94	4.39	18120.03	70591.10
	13.747	2630.00	0.00	0.00	553.10	82400.00	589.94	0.00	590.26	1.01	4.79	20326.21	81926.71
	14.385	3370.00	0.00	0.00	553.40	68400.00	588.54	0.00	588.90	0.89	4.80	14496.05	72465.58
	14.385	3370.00	0.00	0.00	553.40	82400.00	590.18	0.00	590.63	1.05	5.43	15477.39	80288.59
	14.406	114.00	0.00	0.00	552.40	68400.00	588.51	0.00	588.92	1.07	5.10	13400.72	66067.95
	14.406	114.00	0.00	0.00	552.40	82400.00	590.14	0.00	590.66	1.27	5.77	14285.22	73033.77
*	14.407	1.00	0.00	0.00	552.40	68400.00	588.33	0.00	588.96	2.87	6.39	10708.92	40361.53
*	14.407	1.00	0.00	0.00	552.40	82400.00	589.91	0.00	590.72	3.48	7.21	11423.56	44166.08
	14.420	70.00	0.00	0.00	552.40	68400.00	588.35	0.00	588.98	2.87	6.38	10715.13	40394.94
	14.420	70.00	0.00	0.00	552.40	82400.00	589.93	0.00	590.74	3.47	7.21	11431.09	44206.58
*	14.421	1.00	0.00	0.00	552.40	68400.00	588.61	0.00	589.01	1.06	5.09	13450.81	66456.15
*	14.421	1.00	0.00	0.00	552.40	82400.00	590.26	0.00	590.77	1.26	5.74	14349.25	73546.42
	15.156	3884.00	0.00	0.00	553.60	68400.00	589.11	0.00	589.41	0.98	4.44	15418.30	69117.85
	15.156	3884.00	0.00	0.00	553.60	82400.00	590.86	0.00	591.24	1.10	4.94	16668.30	78472.73
	15.470	1657.00	0.00	0.00	552.91	68400.00	589.20	0.00	589.60	1.04	5.12	14290.62	66917.21
	15.470	1657.00	0.00	0.00	552.91	82400.00	590.96	0.00	591.45	1.18	5.69	15630.16	76012.69

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	15.612	750.00	0.00	0.00	552.60	68400.00	589.28	0.00	589.68	1.00	5.07	14110.37	68312.58
	15.612	750.00	0.00	0.00	552.60	82400.00	591.05	0.00	591.54	1.14	5.66	15368.63	77218.23
	16.169	2940.00	0.00	0.00	552.70	68400.00	589.68	0.00	590.01	1.26	4.66	14873.85	60819.00
	16.169	2940.00	0.00	0.00	552.70	82400.00	591.53	0.00	591.93	1.49	5.10	16436.46	67560.27
	16.500	1750.00	0.00	0.00	554.30	68400.00	589.91	0.00	590.19	0.77	4.22	16212.43	77915.10
	16.500	1750.00	0.00	0.00	554.30	82400.00	591.78	0.00	592.13	0.88	4.72	17445.31	87655.36
	16.758	1360.00	0.00	0.00	548.10	68000.00	589.96	0.00	590.30	0.71	4.73	14640.22	80916.24
	16.758	1360.00	0.00	0.00	548.10	82000.00	591.82	0.00	592.27	0.84	5.37	15754.71	89329.78
	16.775	95.00	0.00	0.00	547.80	68000.00	589.92	0.00	590.32	1.16	5.06	13435.44	63155.67
	16.775	95.00	0.00	0.00	547.80	82000.00	591.79	0.00	592.29	1.33	5.66	14485.60	71007.80
*	16.776	1.00	0.00	0.00	547.80	68000.00	589.85	0.00	590.34	3.17	5.61	12118.36	38198.17
*	16.776	1.00	0.00	0.00	547.80	82000.00	591.70	0.00	592.31	3.91	6.28	13057.16	41443.08
	16.781	27.00	0.00	0.00	547.80	68000.00	589.86	0.00	590.35	3.17	5.61	12121.31	38208.36
	16.781	27.00	0.00	0.00	547.80	82000.00	591.71	0.00	592.32	3.91	6.28	13060.78	41455.60
*	16.782	1.00	0.00	0.00	547.80	68000.00	589.96	0.00	590.36	1.15	5.05	13456.56	63310.68
*	16.782	1.00	0.00	0.00	547.80	82000.00	591.84	0.00	592.33	1.33	5.65	14512.42	71212.15
	17.282	2644.00	0.00	0.00	555.80	68000.00	590.29	0.00	590.64	0.93	4.73	14378.38	70509.05
	17.282	2644.00	0.00	0.00	555.80	82000.00	592.22	0.00	592.65	1.06	5.28	15520.35	79678.83
	17.758	2510.00	0.00	0.00	554.20	68000.00	590.45	0.00	590.92	1.13	5.51	12337.62	63829.87
	17.758	2510.00	0.00	0.00	554.20	82000.00	592.38	0.00	592.98	1.33	6.21	13209.01	71053.26
	17.790	173.00	0.00	0.00	551.20	68000.00	590.70	0.00	590.96	0.75	4.03	16893.54	78456.26
	17.790	173.00	0.00	0.00	551.20	82000.00	592.72	0.00	593.03	0.83	4.47	18364.15	89845.45
*	17.791	1.00	593.00	592.60	551.20	68000.00	590.67	0.00	590.96	1.54	4.33	15692.16	54735.62
*	17.791	1.00	593.00	592.60	551.20	82000.00	592.66	0.00	593.04	3.36	4.97	16493.57	44737.28
	17.797	32.00	593.00	592.60	551.20	68000.00	590.68	0.00	590.97	1.54	4.33	15694.24	54746.50
	17.797	32.00	593.00	592.60	551.20	82000.00	592.67	0.00	593.05	3.36	4.97	16493.57	44737.28
*	17.798	1.00	0.00	0.00	551.20	68000.00	590.72	0.00	590.97	0.75	4.02	16906.33	78552.30
*	17.798	1.00	0.00	0.00	551.20	82000.00	592.75	0.00	593.06	0.83	4.46	18389.10	90043.57
	18.134	1783.00	0.00	0.00	558.10	68000.00	590.77	0.00	591.16	1.06	5.03	13529.49	65962.72
	18.134	1783.00	0.00	0.00	558.10	82000.00	592.79	0.00	593.27	1.20	5.59	14660.79	74988.69
	18.160	141.00	0.00	0.00	556.80	68000.00	590.75	0.00	591.18	1.18	5.25	12957.33	62726.72
	18.160	141.00	0.00	0.00	556.80	82000.00	592.77	0.00	593.30	1.31	5.83	14200.26	71629.13
	18.161	1.00	0.00	0.00	556.80	68000.00	590.73	0.00	591.19	2.09	5.41	12564.89	47041.94
	18.161	1.00	0.00	0.00	556.80	82000.00	592.74	0.00	593.31	2.46	6.03	13605.55	52271.41

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	18.180	96.00	0.00	0.00	556.80	68000.00	590.75	0.00	591.21	2.09	5.41	12572.98	47084.62
	18.180	96.00	0.00	0.00	556.80	82000.00	592.77	0.00	593.33	2.46	6.02	13614.95	52320.12
	18.181	1.00	0.00	0.00	556.80	68000.00	590.78	0.00	591.21	1.17	5.24	12973.66	62853.21
	18.181	1.00	0.00	0.00	556.80	82000.00	592.81	0.00	593.33	1.30	5.82	14224.14	71798.47
	18.267	467.00	0.00	0.00	552.60	68000.00	590.87	0.00	591.26	1.01	5.04	13493.65	67553.15
	18.267	467.00	0.00	0.00	552.60	82000.00	592.90	0.00	593.39	1.16	5.64	14545.81	76180.86
*	18.268	1.00	589.10	593.30	552.60	68000.00	590.81	0.00	591.28	2.36	5.53	12302.95	44226.06
*	18.268	1.00	589.10	593.30	552.60	82000.00	592.81	0.00	593.42	3.69	6.25	13118.80	42676.30
	18.273	26.00	589.10	593.30	552.60	68000.00	590.81	0.00	591.29	2.36	5.53	12304.91	44233.99
	18.273	26.00	589.10	593.30	552.60	82000.00	592.82	0.00	593.43	3.70	6.25	13120.58	42632.60
*	18.274	1.00	0.00	0.00	552.60	68000.00	590.90	0.00	591.29	1.01	5.03	13512.77	67706.68
*	18.274	1.00	0.00	0.00	552.60	82000.00	592.95	0.00	593.44	1.15	5.63	14572.12	76401.28
	18.335	326.00	0.00	0.00	555.70	68000.00	590.88	0.00	591.34	1.10	5.49	12387.72	64769.33
	18.335	326.00	0.00	0.00	555.70	82000.00	592.90	0.00	593.50	1.29	6.18	13259.97	72132.30
	18.430	507.00	0.00	0.00	555.40	68000.00	590.91	0.00	591.41	1.25	5.70	11926.99	60720.00
	18.430	507.00	0.00	0.00	555.40	82000.00	592.94	0.00	593.58	1.44	6.40	12820.86	68286.84
*	18.431	1.00	0.00	0.00	555.40	68000.00	590.76	0.00	591.45	3.52	6.66	10213.85	36254.56
*	18.431	1.00	0.00	0.00	555.40	82000.00	592.77	0.00	593.62	4.06	7.40	11074.46	40703.47
	18.444	64.00	0.00	0.00	555.40	68000.00	590.78	0.00	591.47	3.51	6.65	10220.38	36287.37
	18.444	64.00	0.00	0.00	555.40	82000.00	592.80	0.00	593.65	4.05	7.40	11081.98	40742.85
*	18.445	1.00	0.00	0.00	555.40	68000.00	590.99	0.00	591.49	1.24	5.69	11962.62	61015.79
*	18.445	1.00	0.00	0.00	555.40	82000.00	593.04	0.00	593.67	1.43	6.38	12862.92	68650.89
	18.598	817.00	0.00	0.00	558.90	68000.00	591.05	0.00	591.61	1.40	5.97	11388.95	57549.40
	18.598	817.00	0.00	0.00	558.90	82000.00	593.11	0.00	593.80	1.60	6.68	12283.99	64819.73
	18.871	1440.00	0.00	0.00	557.90	68000.00	591.31	0.00	591.80	1.22	5.61	12129.15	61483.36
	18.871	1440.00	0.00	0.00	557.90	82000.00	593.42	0.00	594.03	1.40	6.26	13097.04	69392.99
	18.938	357.00	0.00	0.00	554.90	68000.00	591.44	0.00	591.85	1.14	5.15	13210.43	63635.85
	18.938	357.00	0.00	0.00	554.90	82000.00	593.58	0.00	594.08	1.26	5.70	14387.30	72945.94
*	18.939	1.00	593.60	592.50	554.90	68000.00	591.33	0.00	591.88	2.72	5.95	11422.82	41211.29
*	18.939	1.00	593.60	592.50	554.90	82000.00	593.39	0.00	594.13	6.74	6.89	11907.78	31576.32
	18.944	24.00	593.60	592.50	554.90	68000.00	591.34	0.00	591.89	2.72	5.95	11425.03	41221.91
	18.944	24.00	593.60	592.50	554.90	82000.00	593.41	0.00	594.15	6.74	6.89	11907.78	31576.32
*	18.945	1.00	0.00	0.00	554.90	68000.00	591.49	0.00	591.90	1.15	5.14	13238.18	63431.58
*	18.945	1.00	0.00	0.00	554.90	82000.00	594.02	0.00	594.51	1.21	5.61	14629.53	74489.02

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	19.432	2577.00	0 00	0.00	559.90	68000.00	591.74	0.00	592.26	1.50	5 77	11787.19	55507.85
	19.432	2577.00	0.00	0.00	559.90	82000 00	594.28	0.00	594.89	1.57	6.27	13079.79	65515.11
	19.462	165.00	0.00	0.00	560.90	68000.00	591.88	0.00	592.29	1.25	5.16	13178.77	60723.74
	19.462	165.00	0.00	0.00	560.90	82000.00	594.44	0 00	594.92	1.33	5 59	14667.86	71020.46
	19.463	1 00	601.10	600.40	560.90	68000.00	591.85	0.00	592.30	2.15	5.37	12671.48	46375 20
	19.463	1.00	601.10	600.40	560.90	82000.00	594.41	0.00	594.93	2.33	5.81	14106.51	53700 20
	19.476	68.00	601 10	600.40	560.90	68000 00	591.87	0.00	592.31	2.15	5.36	12677.91	46407 50
	19.476	68.00	601.10	600.40	560.90	82000.00	594.42	0.00	594.95	2.33	5.81	14113 58	53736.87
	19.477	1.00	0.00	0.00	560.90	68000.00	591.90	0.00	592.32	1.23	5.15	13193.78	61411 00
	19.477	1.00	0.00	0 00	560.90	82000.00	594.47	0.00	594.95	1.29	5.58	14685.05	72202.01
	20.115	3379.00	0.00	0.00	557.00	68000.00	592.28	0.00	592.74	1.25	5.48	12418.60	60916 50
	20.115	3379.00	0.00	0.00	557.00	82000.00	594 86	0.00	595.41	1 35	5.96	13766.24	70688.48
*	20.116	1 00	0.00	0.00	557.00	68000.00	592.16	0.00	592.77	2.98	6.28	10831.76	39364.81
*	20 116	1 00	0.00	0.00	557.00	82000.00	594.72	0.00	595.44	3.36	6.83	12007.41	44760.47
	20.128	60.00	0.00	0.00	557.00	68000.00	592 18	0.00	592.79	2.98	6.27	10837 45	39385.28
	20.128	60 00	0.00	0.00	557.00	82000.00	594.74	0.00	595.46	3.35	6.83	12013.90	44793 00
*	20.129	1.00	0.00	0 00	557.00	68000.00	592.34	0.00	592.81	1.30	5.46	12451.95	59700.72
*	20.129	1.00	0.00	0.00	557.00	82000.00	594 93	0 00	595.48	1.38	5.94	13806 12	69868.22
	20.287	839.00	0.00	0.00	565.90	68000.00	592.60	0.00	592.92	1.00	4.53	15021.42	67913.29
	20 287	839.00	0.00	0.00	565.90	82000 00	595.23	0.00	595.60	1.01	4.87	16836.74	81656 98
	20.513	1199.00	0.00	0.00	564.60	68000.00	592.68	0.00	593 06	1.15	4.94	13754.80	63394.88
	20.513	1199 00	0.00	0.00	564.60	82000.00	595.30	0.00	595.74	1.17	5 33	15391.55	75694 39
*	20.514	1.00	0.00	0 00	564.60	68000.00	592.65	0.00	593.06	2.40	5.16	13183.81	43852.66
*	20 514	1.00	0.00	0.00	564.60	82000.00	595.27	0.00	595 75	2.57	5.56	14755.10	51133.99
	20.527	70.00	0.00	0.00	564.60	68000.00	592.67	0.00	593 08	2.40	5.15	13191.22	43885.95
	20.527	70.00	0.00	0.00	564 60	82000.00	595.29	0.00	595 77	2.57	5.55	14762.98	51171 73
*	20.528	1.00	0.00	0.00	564.60	68000.00	592.71	0.00	593.09	1.15	4.94	13772.32	63519.96
*	20.528	1.00	0.00	0.00	564.60	82000.00	595.33	0.00	595.77	1.17	5 32	15411.05	75849.35
	21.059	2804.00	0.00	0.00	564.90	68000.00	593.02	0.00	593.41	1.16	5.05	13460.90	63187.68
	21 059	2804.00	0.00	0.00	564.90	82000.00	595.65	0.00	596.11	1.19	5.45	15049 97	75045.38
	21.092	179.00	0.00	0.00	563.70	68000.00	593.14	0.00	593.44	1.08	4.41	15415.01	65444.07
	21.092	179.00	0.00	0.00	563.70	82000.00	595.80	0.00	596.14	1.06	4.68	17506.24	79827 27
	21.093	1.00	0.00	0.00	563.70	68000.00	593.13	0.00	593.44	1.59	4.51	15072.84	53923.99
	21.093	1.00	0.00	0.00	563.70	82000.00	595 79	0.00	596.14	1.60	4.79	17115.55	64797.74

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	21.108	80.00	0.00	0 00	563.70	68000.00	593.14	0.00	593.46	1.59	4 51	15076.71	53944.11
	21 108	80 00	0.00	0.00	563.70	82000.00	595.80	0.00	596.16	1.60	4.79	17118 84	64815.64
	21.109	1 00	0.00	0.00	563.70	68000.00	593.16	0.00	593.46	1.07	4.41	15422.55	65780.48
	21.109	1.00	0.00	0.00	563.70	82000.00	595.82	0.00	596.16	1.04	4.68	17513.52	80526 32
	21.722	3239.00	0.00	0.00	565.30	68000.00	593.58	0.00	593.73	0.59	3.53	24818.80	88501.78
*	21.722	3239.00	0.00	0 00	565.30	82000 00	596.27	0.00	596.41	0.51	3.52	29560.42	115140.63
*	22.186	2450.00	0.00	0.00	563.30	68000.00	593.77	0.00	593.83	0.28	2.55	38660.04	127756.39
*	22.186	2450.00	0.00	0.00	563 30	82000.00	596 43	0.00	596.49	0.23	2.46	47201.38	171841.71

100-YEAR FLOOD

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	0 023	66100.00	579.34	0.00	0 00	0.00	1297.10	0.00
	0.023	78600 00	579 34	0.00	0.00	0.00	1297 10	0.00
	0.335	66100.00	579.55	0.00	0.21	0.00	1015.82	1650.00
	0.335	78600.00	579.64	0.09	0.30	0.00	1017.62	1650.00
	1.189	66100.00	580.45	0.00	0.89	0.00	1520.24	4510.00
	1.189	78600 00	580.87	0 42	1.23	0.00	1553.86	4510.00
	1.761	66100.00	580.89	0.00	0.44	0.00	687.59	3020.00
	1 761	78600.00	581.43	0.55	0.56	0.00	692.75	3020.00
	2.223	66100.00	581.32	0.00	0.43	0.00	773.98	2440.00
	2.223	78600 00	582.00	0 68	0 57	0.00	781.02	2440.00
	2.576	66100.00	581.62	0.00	0.29	0 00	733.28	1860.00
	2.576	78600.00	582.38	0.76	0.37	0.00	738.92	1860.00
	2.808	66100.00	581.70	0.00	0.08	0.00	683.00	1232.00
	2.808	78600 00	582.48	0 78	0.11	0.00	683.00	1232.00
	2.809	66100.00	581.65	0.00	-0.05	0.00	623.00	1.00
	2.809	78600.00	582.41	0.77	-0.07	0.00	623.00	1.00
	2.813	66100.00	581.65	0.00	0.00	0.00	623.00	17.00
	2.813	78600.00	582.42	0.77	0.00	0.00	623.00	17.00
	2.814	66100.00	581.72	0.00	0.08	0.00	683.00	1.00
	2.814	78600 00	582.52	0.79	0.10	0.00	683.00	1.00
	2.947	66100.00	581.89	0.00	0.16	0.00	1081 15	709.00
	2.947	78600.00	582.74	0.85	0.22	0.00	1089.56	709.00
	3.350	66100.00	582.11	0.00	0.22	0.00	1138.56	2130.00
	3.350	78600.00	583.00	0.89	0.27	0.00	1187.30	2130 00
	3.600	66100.00	582.23	0.00	0.12	0.00	672.35	1322.00
	3 600	78600 00	583.14	0.91	0.14	0.00	807.53	1322.00
*	3.601	66100.00	582 13	0.00	-0.10	0.00	581 10	1.00
*	3.601	78600.00	583.00	0.87	-0.13	0.00	667.78	1.00
	3.615	66100.00	582.14	0.00	0.01	0.00	581.26	73.50
	3.615	78600.00	583.02	0.88	0.02	0.00	673.13	73 50
*	3.616	66100.00	582.29	0.00	0.14	0.00	674.30	1.00
*	3.616	78600.00	583.21	0.92	0.19	0.00	825.95	1.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
3.646	66100.00	582.30	0.00	0.02	0.00	744.44	162.50
3.646	78600.00	583.23	0.93	0.02	0.00	769.12	162.50
3.689	66100.00	582.28	0.00	-0.02	0.00	606.19	231.00
3.689	78600.00	583.20	0.92	-0.04	0.00	610.54	231.00
3.690	66100.00	582.24	0.00	-0.04	0.00	557.00	1.00
3.690	78600.00	583.15	0.91	-0.05	0.00	560.33	1.00
3.697	66100.00	582.25	0.00	0.01	0.00	557.00	35.50
3.697	78600.00	583.16	0.91	0.01	0.00	560.36	35.50
3.698	66100.00	582.30	0.00	0.05	0.00	606.32	1.00
3.698	78600.00	583.22	0.92	0.07	0.00	610.66	1.00
4.366	66100.00	582.72	0.00	0.42	0.00	763.17	3550.00
4.366	78600.00	583.76	1.04	0.54	0.00	944.60	3550.00
4.677	66100.00	582.83	0.00	0.11	0.00	657.00	1649.00
4.677	78600.00	583.89	1.06	0.13	0.00	657.00	1649.00
4.678	66100.00	582.79	0.00	-0.04	0.00	612.00	1.00
4.678	78600.00	583.84	1.05	-0.05	0.00	612.00	1.00
4.682	66100.00	582.79	0.00	0.00	0.00	612.00	20.00
4.682	78600.00	583.84	1.05	0.00	0.00	612.00	20.00
4.683	66100.00	582.85	0.00	0.05	0.00	657.00	1.00
4.683	78600.00	583.91	1.06	0.07	0.00	657.00	1.00
4.835	66100.00	583.01	0.00	0.16	0.00	836.39	809.00
4.835	78600.00	584.11	1.11	0.20	0.00	873.14	809.00
4.967	66100.00	583.03	0.00	0.02	0.00	807.00	702.00
4.967	78600.00	584.14	1.11	0.03	0.00	807.00	702.00
4.968	66100.00	582.98	0.00	-0.05	0.00	732.00	1.00
4.968	78600.00	584.08	1.10	-0.06	0.00	732.00	1.00
4.975	66100.00	582.99	0.00	0.01	0.00	732.00	34.00
4.975	78600.00	584.08	1.10	0.01	0.00	732.00	34.00
4.976	66100.00	583.05	0.00	0.07	0.00	807.00	1.00
4.976	78600.00	584.17	1.12	0.08	0.00	807.00	1.00
5.152	65900.00	583.12	0.00	0.07	0.00	750.27	932.00
5.152	78400.00	584.25	1.13	0.08	0.00	1393.46	932.00
5.325	65900.00	583.18	0.00	0.06	0.00	619.65	920.00
5.325	78400.00	584.31	1.13	0.06	0.00	717.21	920.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	5.326	65900.00	583.05	0.00	-0.13	0.00	514.54	1.00
*	5.326	78400.00	584.14	1.09	-0.17	0.00	581.94	1 00
	5 339	65900.00	583.07	0.00	0.02	0.00	515.50	68.00
	5.339	78400.00	584.16	1.09	0.02	0.00	585.50	68.00
*	5.340	65900.00	583.25	0.00	0.19	0.00	625.36	1.00
*	5 340	78400.00	584.40	1.15	0 24	0.00	721.49	1.00
	5.905	65900.00	583.73	0.00	0.48	0 00	1202 48	2990 00
	5.905	78400.00	584.99	1 25	0.59	0.00	1258.17	2990.00
	6.222	57650.00	583.91	0.00	0.17	0.00	598.64	1670.00
	6.222	67300.00	585.16	1.25	0.17	0.00	699.01	1670.00
	6.519	57650.00	584.12	0.00	0.21	0.00	447.00	1573.00
	6.519	67300.00	585.39	1.27	0.23	0.00	447.00	1573 00
*	6 520	57650.00	583 92	0.00	-0.20	0.00	367.00	1.00
*	6 520	67300.00	585.14	1.22	-0.25	0.00	367.00	1.00
	6.528	57650.00	583.93	0.00	0.01	0.00	367.00	42.00
	6.528	67300.00	585.16	1 22	0 01	0.00	367.00	42.00
*	6.529	57650.00	584.21	0.00	0 28	0 00	447.00	1.00
*	6.529	67300.00	585.50	1.29	0.34	0.00	447.00	1.00
	7.016	57650.00	584 54	0.00	0.33	0.00	730.00	2578.00
	7.016	67300.00	585.90	1 36	0.40	0.00	815.00	2578.00
	7 567	57650.00	584.89	0.00	0.35	0.00	934.45	2910.00
	7.567	67300.00	586.28	1.39	0.38	0.00	1300.00	2910.00
	8.099	57650.00	585.06	0.00	0.17	0.00	635.23	2810.00
	8.099	67300.00	586.46	1 40	0.18	0.00	640 00	2810.00
	8 241	65900.00	585.24	0.00	0 18	0.00	1516.13	750.00
	8.241	78400.00	586 67	1 44	0.21	0.00	1911.79	750.00
	9.079	67100.00	585.76	0.00	0.52	0.00	1887.24	4420.00
	9.079	80000.00	587.24	1 48	0.56	0.00	1895.50	4420.00
	9.584	67100.00	586.07	0 00	0.31	0.00	2237.98	2670.00
	9.584	80000.00	587.55	1.49	0.31	0.00	2250.00	2670.00
	10.240	67100.00	586.44	0.00	0 38	0.00	2361.27	3460.00
	10.240	80000.00	587.92	1 48	0.37	0.00	2367.67	3460.00
	10.993	68400.00	586.73	0 00	0 29	0.00	1005.93	3980.00
	10.993	82400.00	588.18	1.45	0.26	0.00	1023.17	3980.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	11.433	68400.00	587.00	0.00	0.27	0.00	850.00	2325.00
	11.433	82400.00	588.47	1.47	0.29	0.00	850.00	2325.00
	11.802	68400.00	587.18	0.00	0.18	0.00	1061.99	1945.00
	11.802	82400.00	588.67	1.50	0.20	0.00	1068.37	1945.00
	12.569	68400.00	587.80	0.00	0.63	0.00	1656.18	4050.00
	12.569	82400.00	589.39	1.59	0.72	0.00	1668.77	4050.00
	13.249	68400.00	587.97	0.00	0.17	0.00	1091.76	3590.00
	13.249	82400.00	589.55	1.58	0.16	0.00	1176.00	3590.00
	13.747	68400.00	588.30	0.00	0.33	0.00	1320.40	2630.00
	13.747	82400.00	589.94	1.64	0.39	0.00	1355.00	2630.00
	14.385	68400.00	588.54	0.00	0.24	0.00	600.00	3370.00
	14.385	82400.00	590.18	1.64	0.24	0.00	600.00	3370.00
	14.406	68400.00	588.51	0.00	-0.03	0.00	541.53	114.00
	14.406	82400.00	590.14	1.63	-0.04	0.00	545.66	114.00
*	14.407	68400.00	588.33	0.00	-0.18	0.00	451.07	1.00
*	14.407	82400.00	589.91	1.58	-0.23	0.00	455.07	1.00
	14.420	68400.00	588.35	0.00	0.02	0.00	451.10	70.00
	14.420	82400.00	589.93	1.58	0.03	0.00	455.11	70.00
*	14.421	68400.00	588.61	0.00	0.25	0.00	541.77	1.00
*	14.421	82400.00	590.26	1.65	0.32	0.00	545.96	1.00
	15.156	68400.00	589.11	0.00	0.50	0.00	713.00	3884.00
	15.156	82400.00	590.86	1.75	0.60	0.00	713.00	3884.00
	15.470	68400.00	589.20	0.00	0.09	0.00	796.05	1657.00
	15.470	82400.00	590.96	1.76	0.10	0.00	800.00	1657.00
	15.612	68400.00	589.28	0.00	0.08	0.00	710.00	750.00
	15.612	82400.00	591.05	1.77	0.09	0.00	710.00	750.00
	16.169	68400.00	589.68	0.00	0.39	0.00	822.54	2940.00
	16.169	82400.00	591.53	1.85	0.47	0.00	867.01	2940.00
	16.500	68400.00	589.91	0.00	0.24	0.00	659.00	1750.00
	16.500	82400.00	591.78	1.87	0.26	0.00	659.00	1750.00
	16.758	68000.00	589.96	0.00	0.04	0.00	576.91	1360.00
	16.758	82000.00	591.82	1.87	0.04	0.00	600.00	1360.00
	16.775	68000.00	589.92	0.00	-0.03	0.00	561.18	95.00
	16.775	82000.00	591.79	1.87	-0.03	0.00	564.70	95.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	16 776	68000.00	589.85	0.00	-0.07	0.00	506.31	1.00
*	16 776	82000.00	591.70	1 85	-0.09	0.00	510.47	1.00
	16.781	68000.00	589.86	0.00	0.01	0.00	506.33	27.00
	16.781	82000.00	591.71	1.85	0.01	0 00	510.48	27.00
*	16.782	68000.00	589.96	0.00	0.10	0.00	561.25	1.00
*	16.782	82000.00	591.84	1.88	0.13	0.00	564.79	1.00
	17.282	68000.00	590.29	0.00	0.33	0.00	592.00	2644.00
	17.282	82000.00	592.22	1.93	0.38	0.00	592.00	2644.00
	17.758	68000.00	590.45	0.00	0 16	0.00	450.00	2510.00
	17.758	82000.00	592.38	1.94	0.17	0.00	450.00	2510.00
	17.790	68000.00	590.70	0.00	0.26	0.00	729 76	173 00
	17.790	82000.00	592.72	2.01	0.34	0.00	730.49	173.00
*	17.791	68000.00	590.67	0.00	-0.03	0.00	697.00	1.00
*	17.791	82000.00	592.66	1.99	-0.06	0.00	732.00	1.00
	17.797	68000.00	590.68	0.00	0.01	0.00	697.00	32.00
	17.797	82000.00	592.67	1.99	0.01	0.00	.732.00	32.00
*	17.798	68000.00	590.72	0.00	0.04	0.00	729.76	1.00
*	17.798	82000.00	592.75	2 03	0.08	0.00	730.50	1.00
	18.134	68000.00	590.77	0.00	0.05	0.00	560 00	1783.00
	18.134	82000.00	592.79	2 02	0.03	0.00	560.00	1783 00
	18.160	68000.00	590.75	0 00	-0.01	0.00	550.26	141.00
	18.160	82000 00	592.77	2.02	-0.02	0.00	650.00	141.00
	18.161	68000 00	590 73	0.00	-0.02	0.00	516.00	1.00
	18.161	82000.00	592.74	2 01	-0.03	0.00	519.00	1.00
	18.180	68000.00	590.75	0.00	0.02	0.00	516.00	96.00
	18.180	82000.00	592.77	2.01	0.02	0.00	519.00	96.00
	18.181	68000.00	590.78	0.00	0 03	0.00	552.23	1.00
	18.181	82000.00	592 81	2.02	0.04	0.00	650.00	1.00
	18.267	68000 00	590.87	0.00	0.09	0.00	518.00	467.00
	18.267	82000.00	592.90	2.03	0.09	0.00	518.00	467.00
*	18.268	68000.00	590.81	0.00	-0.06	0.00	500.00	1.00
*	18.268	82000.00	592.81	2.00	-0 09	0.00	506.00	1.00
	18.273	68000.00	590 81	0.00	0.01	0.00	500.00	26.00
	18.273	82000.00	592.82	2.01	0.01	0.00	506.00	26.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.274	68000.00	590.90	0.00	0.09	0.00	518.00	1.00
*	18 274	82000.00	592.95	2.05	0 13	0.00	518.00	1.00
	18.335	68000.00	590.88	0.00	-0.03	0.00	430.00	326.00
	18.335	82000.00	592.90	2.03	-0.04	0.00	430.00	326.00
	18.430	68000.00	590.91	0 00	0.03	0.00	439.18	507 00
	18.430	82000.00	592.94	2.03	0.04	0.00	439.61	507.00
*	18.431	68000.00	590.76	0.00	-0.15	0.00	428.50	1 00
*	18.431	82000.00	592.77	2.01	-0.17	0.00	428 50	1.00
	18.444	68000.00	590.78	0.00	0.02	0.00	428.50	64.00
	18.444	82000.00	592.80	2.01	0.03	0.00	428 50	64.00
*	18.445	68000.00	590.99	0 00	0 20	0.00	439.20	1 00
*	18.445	82000 00	593.04	2.05	0.24	0.00	439 63	1.00
	18.598	68000 00	591.05	0.00	0.07	0.00	435 00	817.00
	18.598	82000.00	593.11	2.06	0 08	0.00	435.00	817.00
	18.871	68000.00	591.31	0.00	0.26	0.00	460.00	1440.00
	18.871	82000.00	593 42	2.10	0.31	0 00	460.00	1440.00
	18.938	68000.00	591.44	0.00	0.13	0 00	550 00	357.00
	18.938	82000.00	593.58	2.14	0.16	0.00	550 00	357.00
*	18.939	68000 00	591.33	0.00	-0.11	0.00	479.00	1.00
*	18 939	82000 00	593.39	2.07	-0.19	0.00	550.00	1.00
	18.944	68000.00	591.34	0.00	0.01	0.00	479.00	24.00
	18.944	82000.00	593.41	2.07	0.02	0.00	550.00	24.00
*	18.945	68000 00	591.49	0.00	0.15	0.00	550 00	1 00
*	18.945	82000.00	594 02	2 53	0.61	0.00	550.00	1.00
	19.432	68000.00	591.74	0 00	0.25	0.00	510.00	2577.00
	19.432	82000.00	594.28	2.53	0.26	0.00	510.00	2577.00
	19.462	68000.00	591.88	0.00	0.14	0.00	575.79	165.00
	19.462	82000.00	594.44	2.56	0.16	0.00	587.95	165.00
	19.463	68000.00	591.85	0.00	-0 03	0.00	555.67	1.00
	19.463	82000.00	594.41	2.55	-0.03	0.00	567.80	1.00
	19.476	68000.00	591 87	0.00	0.02	0.00	555.72	68.00
	19.476	82000.00	594.42	2 56	0.02	0.00	567.86	68.00
	19.477	68000.00	591.90	0.00	0.04	0.00	575.92	1.00
	19.477	82000.00	594.47	2 56	0.04	0.00	588.09	1.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	20.115	68000.00	592.28	0.00	0.38	0.00	513.06	3379.00
	20.115	82000.00	594.86	2.58	0.39	0.00	524.00	3379.00
*	20.116	68000.00	592.16	0.00	-0.12	0.00	449.09	1.00
*	20.116	82000.00	594.72	2.56	-0.14	0.00	461.50	1.00
	20.128	68000.00	592.18	0.00	0.02	0.00	449.30	60.00
	20.128	82000.00	594.74	2.56	0.02	0.00	461.50	60.00
*	20.129	68000.00	592.34	0.00	0.16	0.00	514.15	1.00
*	20.129	82000.00	594.93	2.59	0.19	0.00	524.00	1.00
	20.287	68000.00	592.60	0.00	0.25	0.00	690.00	839.00
	20.287	82000.00	595.23	2.63	0.30	0.00	690.00	839.00
	20.513	68000.00	592.68	0.00	0.08	0.00	619.45	1199.00
	20.513	82000.00	595.30	2.62	0.07	0.00	625.00	1199.00
*	20.514	68000.00	592.65	0.00	-0.03	0.00	595.31	1.00
*	20.514	82000.00	595.27	2.62	-0.03	0.00	601.00	1.00
	20.527	68000.00	592.67	0.00	0.02	0.00	595.36	70.00
	20.527	82000.00	595.29	2.62	0.02	0.00	601.00	70.00
*	20.528	68000.00	592.71	0.00	0.04	0.00	619.58	1.00
*	20.528	82000.00	595.33	2.63	0.04	0.00	625.00	1.00
	21.059	68000.00	593.02	0.00	0.31	0.00	598.89	2804.00
	21.059	82000.00	595.65	2.63	0.31	0.00	605.00	2804.00
	21.092	68000.00	593.14	0.00	0.12	0.00	781.72	179.00
	21.092	82000.00	595.80	2.66	0.15	0.00	790.21	179.00
	21.093	68000.00	593.13	0.00	-0.01	0.00	763.70	1.00
	21.093	82000.00	595.79	2.66	-0.01	0.00	772.19	1.00
	21.108	68000.00	593.14	0.00	0.01	0.00	763.72	80.00
	21.108	82000.00	595.80	2.66	0.01	0.00	772.21	80.00
	21.109	68000.00	593.16	0.00	0.02	0.00	781.75	1.00
	21.109	82000.00	595.82	2.66	0.02	0.00	790.24	1.00
	21.722	68000.00	593.58	0.00	0.43	0.00	1770.00	3239.00
*	21.722	82000.00	596.27	2.68	0.45	0.00	1770.00	3239.00
*	22.186	68000.00	593.77	0.00	0.18	0.00	3200.00	2450.00
*	22.186	82000.00	596.43	2.67	0.17	0.00	3200.00	2450.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=      3.601  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.601  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.616  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.616  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      5.326  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      5.326  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      5.340  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      5.340  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.520  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      6.520  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.529  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      6.529  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     14.407  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     14.407  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     14.421  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     14.421  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     16.776  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     16.776  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     16.782  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     16.782  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     17.791  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     17.791  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     17.798  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     17.798  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.268  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.268  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.274  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.274  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.431  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.431  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.445  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.445  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.939  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.939  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=     18.945  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
NOTE    SECNO=     18.945  PROFILE=  2  WSEL BASED ON X5 CARD
WARNING SECNO=     18.945  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.116  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.116  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20 129  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.129  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.514  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.514  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.528  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.528  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     21.722  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     22.186  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     22 186  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
```

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: 100YR. ENCROACHED

00BREAK00

THIS RUN EXECUTED 19AUG91 15:06.28

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**************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED JUN  1990

  ERROR CORR -  01,02,03,04
  MODIFICATION -
**************************************************

T1       SAGINAW RIVER BASIN FIS RESTUDY
T2       SAGINAW RIVER
T3       100-YEAR FLOOD

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0        2        0        0        0        0        0        0     579.34     0

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE

      1        0       -1                         .9

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110       150       200

J6  IHLEQ     ICOPY    SUBDIV   STRTDS   RMILE

                       100

QT        2     66100     66100
NC     .035      .035      .028       .1        .2         0         0         0         0         0
NH      3.0      .035       655     .023      1396      .035      1445         0         0         0
ET        0         0       4 1       99      1396
        120' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  A
X1     .023        73        44      1396       120       120       120
GR    584.3         0     584.5        17     582.1        44     581.8        45     581.2        50
GR    580.9        55     580.3        85     579.6        95     578 9       105     578.4       115
GR    578.4       125     577.9       135     577.9       215     577.4       225     577.4       245
GR    576.9       255     576.9       435     576.4       445     576.9       455     576.9       485
GR    576.4       495     576.4       505     575.9       515     575.9       565     575.4       575
GR    575.4       585     574.9       595     575.4       605     574.9       615     574.9       655
GR    572.9       695     570.9       715     568.9       725     565.9       735     563.9       745
GR    562.9       755     562.9       765     560.9       785     559.4       795     558.9       805
GR    558.9       815     555.9       875     555.9       885     554.9       905     554.9       915
GR    553.9       935     553.9       945     552.9       965     552.9       985     553.9       995
GR    554.9      1015     554.9      1035     555.9      1045     555.9      1075     556.9      1085
GR    556.9      1165     558.4      1175     558.9      1185     558.9      1225     557.9      1245
GR    557.9      1255     558.4      1265     557 4      1275     556.9      1285     556.9      1305
GR    557.9      1315     557.9      1335     557.4      1345     556.9      1365     555.9      1385
GR    555.9      1395     584.7      1396     584.3      1445
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NH      3.0       .035        610        026        1401        .035        1500
ET        0          0        4 1        385        1401
          1770' U/S FROM THE MOUTH OF SAGINAW RIVER          SEC.  B
X1     .335         74        349       1401        1650        1650        1650
GR    583.6          0      583.6        100       586.2         225       583.8         335       582.0         349
GR    581.7        350      580 8        360       580.8         370       579 8         380       578.8         400
GR    578.8        450      577.8        470       577.8         480       576.8         500       576.8         510
GR    576.3        520      576.3        530       575.8         540       575.8         560       575.3         570
GR    575.3        610      574.8        620       574.8         640       574.3         650       574.3         680
GR    573 8        690      573.8        710       572.8         730       572.8         740       571.8         760
GR    571.8        770      570.8        780       570 8         790       567.8         820       565.8         830
GR    563.8        850      561.8        860       559.8         870       558.3         880       557 8         890
GR    556.8        900      556.8        910       555.8         920       554.8         940       554.8         950
GR    552.8        970      551 8        990       551.8        1000       550.8        1020       550.8        1040
GR    551.3       1050      551.3       1060       551.8        1070       551.8        1090       552.8        1100
GR    552.8       1110      553.8       1120       553.8        1130       555.8        1140       557 8        1160
GR    558.8       1170      558.8       1200       559.8        1210       559.8        1320       561.8        1340
GR    561.8       1350      562.8       1360       562.8        1370       562 3        1380       562.3        1390
GR    561.8       1395      562.8       1400       585.1        1401       584 9        1500

NH      3.0       .035        630       .022        1490        .035        2000
ET        0          0        4.1        317        1837
          6280' U/S FROM THE MOUTH OF SAGINAW RIVER          SEC.  C
X1    1 189         95        299       1911        4510        4510        4510
GR    583.4          0      582.5        100       583.3         200       583.3         290       582.5         299
GR    582.2        300      581.3        305       580.8         310       580 3         320       579.3         330
GR    578.8        340      577.8        350       577.3         360       576.3         370       575.8         380
GR    575.8        400      576.3        410       575.8         420       575.8         430       575.3         440
GR    574.8        630      573.3        660       571 8         670       570.3         680       569.3         690
GR    567.3        700      566.3        710       564.3         720       557.3         790       555.8         800
GR    555.8        810      555.3        820       555.3         830       554.3         840       554.3         870
GR    553.8        880      553.3        890       553.3         970       553.8         980       558.3         990
GR    560 3       1000      563.3       1010       563.3        1040       564.3        1050       564.3        1090
GR    565.3       1100      565.3       1120       566.3        1130       567.3        1190       567 8        1200
GR    567.8       1210      568.8       1230       568.8        1240       569.8        1260       569.8        1270
GR    570.3       1280      569 3       1300       569 3        1330       569.8        1340       569 8        1350
GR    571.3       1380      571.3       1390       573.3        1430       573.3        1440       574.3        1450
GR    574.3       1460      574.8       1470       574.8        1480       575.3        1490       575.3        1500
GR    575.8       1510      575.8       1530       576.3        1540       576.3        1570       576.8        1580
GR    576.8       1600      577.3       1610       577.3        1640       577.8        1650       577.8        1660
GR    578.3       1670      578.3       1740       579.3        1760       579.3        1810       580.3        1830
GR    580.5       1840      580.8       1850       580.8        1860       581.0        1870       581.3        1880
GR    581.3       1890      581.8       1900       582.2        1910       582.3        1911       582.5        2000

NH      3.0       .035        490       .025         980        .035        1200
ET        0          0        4.1        308         995
          9300' U/S FROM THE MOUTH OF SAGINAW RIVER          SEC   D
X1    1.761         62        297       1002        3020        3020        3020
GR    586.6          0      584 6        100       584.2         200       584.8         297       582.2         300
GR    580.5        310      579.8        320       577.8         360       577.8         370       577.3         380
GR    577.3        410      576 8        420       576.8         450       576.3         460       576.3         470
GR    575.8        480      575.8        490       573.8         530       572.8         540       570.8         550
GR    569.8        560      569.3        570       567.3         580       566.3         590       564 3         600
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GR    562.3      620     560.3      630     558.3      640     557.3      650     555.3      660
GR    553.3      670     551.3      680     549.3      700     549.3      710     550.3      720
GR    548.3      730     548.3      740     547.8      750     546.3      760     546.3      770
GR    546.8      780     547.3      790     547.3      830     548.3      840     547 8      850
GR    548.8      860     548.8      870     549.3      880     549.3      890     550.3      910
GR    550.3      930     551.3      940     551.3      950     554.8      960     557.3      970
GR    577.3      980     578.8      990     580.8      995     582.2     1000     585.6     1002
GR    587.1     1100     589.7     1200

NH      3.0     .035       570     .027      1220     .035      1400
ET        0        0       4.1      507      1281
          3090' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE        SEC  E
X1    2.223       73       499     1281      2440     2440      2440
GR    586.1        0     586 5      100     586.1      200     585.7      300     586.1      400
GR    585 3      485     583.3      499     581.9      500     581.5      505     581.0      510
GR    578.5      520     577.0      530     576.0      550     576.0      570     574.5      600
GR    574.5      610     574.0      620     573.0      630     572.5      640     569.5      670
GR    569.0      680     565.0      720     563.0      730     563.5      740     563.0      750
GR    562.0      760     562.0      770     561.0      780     561.0      790     559.0      810
GR    558.5      820     558.0      830     556.0      850     554.5      860     553.0      870
GR    553.0      880     552.0      890     551.0      900     551.0      910     552.0      930
GR    552.0      940     551.5      950     551.0      960     551.0      970     551.5      980
GR    551.5     1000     551 0     1010     551.0     1020     552.0     1040     554.0     1060
GR    554.0     1070     555.0     1080     555.0     1090     556 0     1100     556.5     1110
GR    557.5     1120     558.0     1130     559.0     1140     562.0     1150     564.0     1160
GR    565.0     1170     571.0     1180     572.0     1190     575.0     1210     576.0     1220
GR    576.0     1240     577 5     1270     578.5     1280     582.2     1281     583.4     1290
GR    585.0     1300     586.9     1330     587.0     1400

NH      3.0     .035       130     .027       800     .035      1000
ET        0        0       4.1       67       800
          1230' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE        SEC. F
X1    2.576       55        64      801      1860     1860      1860
GR    584.6        0     584.8       60     582.6       64     581 8       65     579.9       80
GR    578.4       90     577 9      100     577.4      110     577.4      130     575.9      160
GR    573 9      170     572.9      180     569 9      190     568.9      200     566.9      210
GR    563 9      220     557.9      250     555 9      270     555.4      280     554.4      290
GR    553.4      310     554.9      320     554.9      340     555.4      350     554.9      360
GR    554.9      380     552.9      420     552.9      450     550.9      470     551.4      480
GR    550.9      490     549.9      500     549.4      510     549.9      520     549.4      530
GR    550.4      540     550.4      550     549.9      560     549.9      610     550.9      620
GR    550.9      630     552.9      650     552.9      660     554.9      670     562.9      750
GR    564.9      760     567.9      770     570.9      780     574.9      790     580.9      799
GR    581.8      800     582.2      801     582.9      810     585.4      900     585.7     1000

NC      035     .035      .032       .1        .2
ET        0        0       1.4
          D/S FACE OF D&M RAILROAD BRIDGE        SEC.  G
X1    2.808       88       400     1083      1232     1232      1232
GR    589.4        0     590.1      100     591.0      200     591 9      300     592.6      400
GR    580.9      400     580.4      405     579.4      410     578.4      420     576.4      430
GR    575.4      440     573.9      450     571.9      460     570.4      470     567.9      480
GR    568.9      490     569.9      500     570.9      505     567.7      513     564.9      520
GR    560.9      530     560.4      540     561.4      550     563.4      560     563.9      570
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GR	561.4	580	560.9	590	559.9	600	566.4	610	570.7	616
GR	572.9	619	568.5	627	566.9	630	558.9	640	555.9	650
GR	557.9	660	556.4	670	557.9	680	556.9	690	556.9	700
GR	558.4	710	561.9	720	565.9	729	563.6	732	557.4	740
GR	555.9	742	554.4	750	552.4	760	550.9	770	548.9	790
GR	549.9	800	549.9	810	550.4	820	554.4	830	551.6	838
GR	551.0	842	551.9	870	551.6	874	550.9	880	549.4	890
GR	550.4	900	549.4	910	549.4	920	548.4	930	547.9	940
GR	548.4	950	550.4	960	553.1	969	553.9	972	555.7	980
GR	556.8	985	557.9	990	554.4	1000	554.4	1010	555.4	1020
GR	556.9	1030	557.9	1040	564.4	1050	567.9	1060	575.9	1070
GR	577.4	1080	578.6	1083	592.5	1083	592.5	1100	591.5	1200
GR	590.1	1300	589.0	1400	588.0	1500				
NC	.035	.035	.031	.1	.2					
X1	2.809	95	400	1083	1	1	1			
GR	589.4	0	590.1	100	591.0	200	591.9	300	592.6	400
GR	580.9	400	580.4	405	579.4	410	578.4	420	576.4	430
GR	575.4	440	573.9	450	571.9	460	570.4	470	567.9	480
GR	568.9	490	569.9	500	570.9	505	592.5	505	592.5	513
GR	567.7	513	564.9	520	560.9	530	560.4	540	561.4	550
GR	563.4	560	563.9	570	561.4	580	560.9	590	559.9	600
GR	566.4	610	570.7	616	572.9	619	592.4	619	592.4	627
GR	568.5	627	566.9	630	558.9	640	555.9	650	557.9	660
GR	556.4	670	557.9	680	556.9	690	556.9	700	558.4	710
GR	561.9	720	565.9	729	563.6	732	592.3	732	592.3	740
GR	557.4	740	555.9	742	554.4	750	552.4	760	550.9	770
GR	548.9	790	549.9	800	549.9	810	550.4	820	554.4	830
GR	551.6	838	551.0	842	592.4	842	592.4	870	551.9	870
GR	551.6	874	550.9	880	549.4	890	550.4	900	549.4	910
GR	549.4	920	548.4	930	547.9	940	548.4	950	550.4	960
GR	553.1	969	553.9	972	592.5	972	592.5	980	555.7	980
GR	556.8	985	557.9	990	554.4	1000	554.4	1010	555.4	1020
GR	556.9	1030	557.9	1040	564.4	1050	567.9	1060	575.9	1070
GR	577.4	1080	578.6	1083	592.5	1083	592.5	1100	591.5	1200
X1	2.813	0	0	0	17	17	17			
NC	.035	.035	.032	.1	.2					
X1	2.814	88	400	1083	1	1	1			
GR	589.4	0	590.1	100	591.0	200	591.9	300	592.6	400
GR	580.9	400	580.4	405	579.4	410	578.4	420	576.4	430
GR	575.4	440	573.9	450	571.9	460	570.4	470	567.9	480
GR	568.9	490	569.9	500	570.9	505	567.7	513	564.9	520
GR	560.9	530	560.4	540	561.4	550	563.4	560	563.9	570
GR	561.4	580	560.9	590	559.9	600	566.4	610	570.7	616
GR	572.9	619	568.5	627	566.9	630	558.9	640	555.9	650
GR	557.9	660	556.4	670	557.9	680	556.9	690	556.9	700
GR	558.4	710	561.9	720	565.9	729	563.6	732	557.4	740
GR	555.9	742	554.4	750	552.4	760	550.9	770	548.9	790
GR	549.9	800	549.9	810	550.4	820	554.4	830	551.6	838
GR	551.0	842	551.9	870	551.6	874	550.9	880	549.4	890
GR	550.4	900	549.4	910	549.4	920	548.4	930	547.9	940
GR	548.4	950	550.4	960	553.1	969	553.9	972	555.7	980

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GR    556.8      985     557.9      990     554.4     1000     554.4     1010     555.4     1020
GR    556.9     1030     557.9     1040     564.4     1050     567.9     1060     575.9     1070
GR    577.4     1080     578 6     1083     592.5     1083     592.5     1100     591.5     1200
GR    590.1     1300     589.0     1400     588.0     1500

NH      3.0     .035       115      027      1065     .035      1625
          710' U/S FROM U/S FACE OF D&M RAILROAD BRIDGE        SEC. H
X1    2.947       85        35     1115       709      709       709
GR    589.2        0     584.0       10     583.2       25     581.8       35     580.3       84
GR    579 3       95     578.3      115     577.3      125     575.3      165     575.3      175
GR    573.8      205     572.8      215     572.3      225     571.3      235     569.8      265
GR    569.8      295     569.3      305     569.3      315     568.8      325     568.8      345
GR    567.8      365     567.8      375     566.8      385     565.8      405     564.8      415
GR    564.3      425     564.3      435     563.8      445     562.8      455     562.3      465
GR    562.3      475     561.8      485     561.8      505     556.8      555     555.3      565
GR    554.3      575     553.8      585     553.8      595     553.3      605     552.3      615
GR    551.8      625     551.8      655     552.8      665     552.8      675     553.8      685
GR    554.3      695     554.3      715     553.8      725     553.8      745     554.3      755
GR    553.8      765     553.8      785     554.3      795     554.3      815     554.8      825
GR    555.8      835     557.8      845     558.8      855     560.8      865     562.8      875
GR    564.8      895     566.8      905     566.8      915     567.8      925     568.8      945
GR    568.8      955     569.8      975     569.6      985     570.3      995     570.8     1005
GR    572.8     1025     574.3     1035     574.8     1045     576.8     1065     578.3     1075
GR    578.8     1085     579.6     1095     580.1     1105     581.7     1115     585.3     1125
GR    584.3     1225     585.1     1325     587.2     1425     589.5     1525     590.0     1625

NH      3.0     .035       210     .023       900     .035      1560
         1323' D/S FROM D/S FACE OF BELINDA STREET BRIDGE        SEC. I
X1    3.350       73        59     1193      2130     2130      2130
GR    586.5        0     582.4       15     582.1       59     581.5       60     581.1       65
GR    580.6       70     580.1       80     578.1      100     577.1      120     577.1      160
GR    576.6      170     576.6      210     574.6      250     568.6      310     566.6      320
GR    564.6      330     560.6      350     559.6      360     555.6      380     552.6      390
GR    553.1      400     553.6      410     553.6      430     553.1      440     553.1      450
GR    553.6      460     553.1      470     553 1      490     552.6      500     552.6      540
GR    551.6      560     551.6      570     552.6      590     552.1      600     552.6      610
GR    552.6      630     553.6      650     559.6      710     561.1      720     562.6      750
GR    562 6      760     565.6      770     566.6      780     568.6      790     571.6      820
GR    573.1      830     574.1      840     574 6      850     575.6      860     575.6      870
GR    576.1      880     576.1      890     576.6      900     576.6      910     576 1      920
GR    576.6      930     576.6     1000     577.1     1010     577.1     1020     577.6     1030
GR    577 6     1090     578.1     1100     578 1     1140     578.6     1150     578.6     1170
GR    579.8     1180     581 5     1192     581.9     1193     585.0     1213     586 0     1260
GR    586.8     1360     586.6     1460     585.5     1560

NH      3.0     .035       530     .028      1188     .035      1302
ET        0        0       4.1      519      1191
X1    3.600       80       500     1200      1322     1322      1322
GR    608.9        0     604.7      105     586.9      140     586.7      147     586.6      150
GR    585.2      200     584.5      243     584.4      246     583.5      300     583.3      347
GR    583.3      350     583.1      400     582.9      478     582.9      481     582.9      500
GR    582.2      520     581.0      530     571.0      535     567.9      540     567.0      550
GR    565.0      560     561.5      570     561.0      580     560.6      584     560.2      588
GR    560.0      590     557.0      610     555.0      620     552.0      630     551.0      640
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GR     551.0      680     551.2      683     546.4      722     546 0      730     544.0      750
GR     544.5      780     547.0      790     549.0      810     548.5      830     547.5      840
GR     546.0      850     545.0      860     547.0      870     548.0      880     553.0      890
GR     553.2      892     557.7      931     559.0      940     560.5      950     564.5      970
GR     565.0      980     565.0      990     566.0     1000     565.5     1010     567.0     1020
GR     567.3     1026     567.5     1030     567.5     1040     568.0     1050     569.0     1060
GR     572.0     1070     573.3     1080     574.5     1090     574.0     1100     574.0     1110
GR     574.4     1114     574.7     1117     575.0     1120     575.5     1130     575.5     1140
GR     574.5     1160     575 0     1170     575.0     1180     580.0     1188     581.9     1189
GR     583.4     1200     584.5     1229     584.6     1232     586.2     1263     605.5     1302

NC      .035      .035      .028       .1       .2
ET         0         0       4.1      521     1190
        D/S FACE OF BELINDA STREET BRIDGE      SEC  J
X1     3.601        95       500     1200        1        1        1
GR     608.9         0     604.7      105     586.9      140     586.7      147     612.1      147
GR     612.1       150     586.6      150     585.2      200     584.5      243     613.1      243
GR     613.1       246     584.4      246     583.5      300     583.3      347     613 6      347
GR     613.7       350     583.3      350     583.1      400     582.9      478     614.1      478
GR     614.1       481     582.9      481     582.9      500     582.2      520     581.0      530
GR     571.0       535     567.9      540     567.0      550     565.0      560     561.5      570
GR     561.0       580     560.6      584     614.4      584     614.4      588     560.2      588
GR     560.0       590     557.0      610     555.0      620     552.0      630     551.0      640
GR     551.0       680     551.2      683     614.7      683     614.9      722     546.4      722
GR     546.0       730     544.0      750     544.5      780     547.0      790     549.0      810
GR     548.5       830     547.5      840     546.0      850     545.0      860     547.0      870
GR     548.0       880     553.0      890     553.2      892     615.1      892     614.9      931
GR     557 7       931     559.0      940     560.5      950     564.5      970     565.0      980
GR     565.0       990     566.0     1000     565.5     1010     567.0     1020     567.3     1026
GR     614.5      1026     614.5     1030     567.5     1030     567.5     1040     568.0     1050
GR     569.0      1060     572.0     1070     573.5     1080     574.5     1090     574 0     1100
GR     574 0      1110     574.4     1114     614.0     1114     614.0     1117     574 7     1117
GR     575.0      1120     575.5     1130     575.5     1140     574.5     1160     575 0     1170
GR     575.0      1180     580.0     1188     581.9     1189     583 4     1200     584.5     1229

ET         0         0       4.1      521     1190
X1     3.615         0         0        0      73.5     73.5     73.5

NH       3.0      .035       530      .028     1188      035     1302
ET         0         0       4.1      518     1192
X1     3.616        80       500     1200        1        1        1
GR     608.9         0     604.7      105     586.9      140     586.7      147     586.6      150
GR     585.2       200     584.5      243     584.4      246     583.5      300     583.3      347
GR     583.3       350     583.1      400     582.9      478     582.9      481     582.9      500
GR     582.2       520     581.0      530     571.0      535     567.9      540     567.0      550
GR     565.0       560     561.5      570     561.0      580     560.6      584     560.2      588
GR     560.0       590     557.0      610     555.0      620     552.0      630     551.0      640
GR     551 0       680     551.2      683     546.4      722     546.0      730     544.0      750
GR     544.5       780     547.0      790     549.0      810     548.5      830     547.5      840
GR     546.0       850     545.0      860     547.0      870     548.0      880     553.0      890
GR     553.2       892     557.7      931     559.0      940     560.5      950     564.5      970
GR     565.0       980     565.0      990     566.0     1000     565.5     1010     567.0     1020
GR     567.3      1026     567.5     1030     567.5     1040     568.0     1050     569.0     1060
GR     572.0      1070     573.5     1080     574.5     1090     574.0     1100     574.0     1110
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GR    574.4     1114     574.7     1117     575.0     1120     575 5     1130     575.5     1140
GR    574.5     1160     575.0     1170     575.0     1180     580.0     1188     581.9     1189
GR    583.4     1200     584.5     1229     584 6     1232     586.2     1263     605.5     1302

NH      3.0     .035       400     .028      1142     .035      1400
ET        0        0       4.1      398      1143
        163' U/S FROM U/S FACE OF BELINDA STREET BRIDGE        SEC. K
X1    3.646       73       400     1143     162.5    162.5     162.5
GR    585.8        0     585.2      100     586.0      140     583.5      200     583.2      300
GR    583.7      392     581.8      400     571.9      405     570.9      410     567.9      420
GR    566.9      430     562.9      450     555.9      520     554.4      530     553.9      540
GR    552.4      550     551 9      560     550.9      570     550.9      580     549.9      590
GR    550 4      600     551.4      610     551.9      620     551.9      630     552 4      640
GR    553.4      650     553.9      660     553.9      680     553.4      690     551.4      700
GR    549.9      710     549.9      720     548.9      730     548.9      740     549.9      760
GR    549 4      770     549 4      780     549.9      790     550.9      800     555.9      810
GR    558.9      820     558.9      830     560.9      840     561.9      850     561.9      860
GR    562.9      870     563.4      880     562.4      890     563.9      900     563 9      920
GR    565.9      940     569.9      960     572 4      970     573 9      980     573.9      990
GR    574.9     1000     574.9     1010     575.4     1020     576.4     1030     576.4     1050
GR    576.9     1060     576.9     1070     576.4     1080     572.4     1090     571.9     1100
GR    572 9     1110     576 9     1120     579.4     1130     581.8     1142     583 5     1143
GR    586.0     1200     585.8     1300     585.8     1400

NH      3.0     .035       450     .028      1025     .035      1600
ET        0        0       4.1      419      1025
X1    3.689       75       400     1025       231      231       231
GR    586.5        0     586.0      100     586.1      200     588.7      300     593.2      400
GR    586.7      400     584 2      410     582.4      418     581.8      422     580.8      430
GR    579.8      440     580.1      450     578.0      460     575 6      463     572.4      467
GR    570.0      470     566.7      480     564.9      490     560.9      510     559.4      520
GR    559.4      530     557.4      550     556.4      570     556.6      580     556.9      590
GR    557.1      594     556 6      602     554.2      608     549 6      618     547 4      620
GR    547.9      630     547.4      640     548.4      650     549.4      660     549.9      670
GR    550.4      680     550.4      700     551.4      710     556.4      714     570.2      725
GR    560 7      751     555.2      756     550.9      760     549.9      770     551 9      780
GR    551 9      790     550.4      800     550.4      810     550.9      820     551.9      830
GR    551 9      840     550.9      850     551.2      856     556.4      865     561.3      871
GR    560.4      880     554.9      890     556.9      910     556.9      920     561.9      930
GR    561.4      940     561.4      950     563.4      990     569.4     1000     573.4     1008
GR    574.6     1012     575.4     1020     576 4     1025     593.9     1025     592.6     1100
GR    592.0     1200     591 5     1300     590.8     1400     590.2     1500     589.7     1600

NC     .035      .035      .028       .1        2
ET        0        0       4.1      422      1025
        D/S FACE OF OLD BELINDA STREET BRIDGE        SEC. L
X1    3.690       87       400     1025        1        1         1
GR    586.5        0     586 0      100     586.1      200     588.7      300     593.2      400
GR    586.7      400     584.2      410     582.4      418     593.3      418     593 4      422
GR    581.8      422     580.8      430     579.8      440     580.1      450     578.0      460
GR    575.6      463     593.7      463     593.7      467     572.4      467     570.0      470
GR    566 7      480     564.9      490     560.9      510     559.4      520     559.4      530
GR    557.4      550     556 4      570     556.6      580     556.9      590     557.1      594
GR    556.6      602     593 8      602     593.8      608     554.2      608     548.6      618
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GR     547.4      620     547.9      630     547 4      640     548.4      650     549.4      660
GR     549.9      670     550.4      680     550.4      700     551.4      710     556 4      714
GR     570.2      725     593 7      725     593.7      751     560.7      751     555.2      756
GR     550.9      760     549.9      770     551.9      780     551.9      790     550.4      800
GR     550.4      810     550.9      820     551.9      830     551.9      840     550.9      850
GR     551.2      856     556 4      865     593.7      865     593.7      871     561.3      871
GR     560.4      880     554.9      890     556.9      910     556.9      920     561.9      930
GR     561.4      940     561.4      950     563.4      990     569.4     1000     573.4     1008
GR     593 9     1008     593.9     1012     574.6     1012     575.4     1020     576.4     1025
GR     593 9     1025     592.6     1100     592.0     1200     591.5     1300     590.8     1400
GR     590.2     1500     589.7     1600

ET         0        0       4.1      422      1025
X1     3.697        0         0        0      35.5     35.5      35.5

ET         0        0       4.1      419      1025
X1     3.698       75       400     1025         1        1         1
GR     586.5        0     586.0      100     586.1      200     588.7      300     593.2      400
GR     586 7      400     584.2      410     582.4      418     581.8      422     580.8      430
GR     579.8      440     580.1      450     578.0      460     575 6      463     572.4      467
GR     570 0      470     566.7      480     564.9      490     560.9      510     559.4      520
GR     559.4      530     557.4      550     556 4      570     556.6      580     556.9      590
GR     557.1      594     556.6      602     554.2      608     548.6      618     547.4      620
GR     547.9      630     547.4      640     548.4      650     549 4      660     549.9      670
GR     550.4      680     550.4      700     551.4      710     556.4      714     570.2      725
GR     560.7      751     555.2      756     550.9      760     549.9      770     551.9      780
GR     551.9      790     550.4      800     550.4      810     550.9      820     551.9      830
GR     551.9      840     550 9      850     551.2      856     556.4      865     561.3      871
GR     560.4      880     554.9      890     556.9      910     556.9      920     561.9      930
GR     561.4      940     561.4      950     563.4      990     569.4     1000     573.4     1008
GR     574.6     1012     575.4     1020     576.4     1025     593.9     1025     592.6     1100
GR     592.0     1200     591.5     1300     590.8     1400     590.2     1500     589.7     1600

NH       3.0     .035       310     .028      1060     .035      1100
ET         0        0       4.1      299      1062
          1650' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD        SEC.  M
X1     4.366       71       298     1065      3550     3550      3550
GR     584.2        0     583.9      100     583.3      200     583.7      298     582.1      300
GR     580.7      305     580.0      310     578.7      320     577.2      330     575.2      340
GR     574.7      350     575.2      360     575.2      370     574.2      390     572.7      400
GR     572.2      410     570.7      420     568.2      430     568.2      440     565.7      450
GR     564.7      460     563.2      470     560.7      480     559.2      490     557.2      510
GR     556.2      530     557 2      540     556.2      560     554.2      570     554.2      580
GR     555.2      590     555.2      600     553.2      610     552.2      630     549 2      660
GR     551.2      670     551.2      680     550.2      690     550.2      700     548.2      710
GR     550 2      730     551.2      740     551.2      760     552.2      770     552 2      790
GR     554.2      810     554.2      820     556.2      840     556.2      850     558.2      870
GR     558.2      880     560.2      890     562.2      910     561.7      920     561.7      930
GR     562.2      940     562 2      960     562.7      970     566.2      980     568.2      990
GR     572.2     1000     574.2     1010     575 2     1020     576.2     1030     577.9     1040
GR     579.2     1050     582.1     1060     583.4     1065     584.6     1075     586.6     1090
GR     588.0     1100
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NC     .035      .035      .028       .1        .2
ET        0         0       1.4
X1    4.677        67       300       957      1649      1649      1649
GR    591.4         0     591.4       100     591.7       200     592.2       300     573.5       300
GR    571 5       310     570.0       320     569.5       330     568.0       360     568.0       370
GR    567.0       390     562.0       440     560.6       447     560 0       450     560.0       460
GR    559.0       470     557.0       480     557.0       510     558.0       520     558.0       530
GR    560.0       550     560.0       560     558.0       580     557.2       588     556.5       595
GR    556.0       600     554.5       630     555.0       640     555.0       660     553.0       680
GR    553.0       690     545.5       700     552.5       704     563.0       710     563.5       720
GR    557.5       728     555.7       731     553.0       740     553 0       750     554.0       760
GR    553.0       770     554.0       780     554.0       790     555 0       800     555.5       810
GR    555.5       820     557.0       830     558.2       836     559.0       840     559.2       843
GR    561.0       850     560.0       860     561.0       870     562.0       890     564.0       900
GR    566.0       920     568.0       930     571.0       940     575.0       950     576.0       957
GR    592.5       957     592.2      1000     591.2      1100     589.9      1200     588.9      1300
GR    588.2      1400     588.0      1500

          D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1          SEC.  N
X1    4.678        72       300       957         1         1         1
GR    591.4         0     591.4       100     591.7       200     592.2       300     573.5       300
GR    571 5       310     570 0       320     569.5       330     568.0       360     568.0       370
GR    567.0       390     562 0       440     592.5       440     592.5       447     560 6       447
GR    560.0       450     560 0       460     559.0       470     557.0       480     557.0       510
GR    558.0       520     558.0       530     560.0       550     560 0       560     558.0       580
GR    557.2       588     593.8       588     593.9       595     556.5       595     556.0       600
GR    554.5       630     555.0       640     555.0       660     553.0       680     553.0       690
GR    545.5       700     552.5       704     593.2       704     593.2       728     557.5       728
GR    555.7       731     553.0       740     553.0       750     554.0       760     553.0       770
GR    554.0       780     554.0       790     555.0       800     555.5       810     555.5       820
GR    557.0       830     558 2       836     593.9       836     593.8       843     559.2       843
GR    561.0       850     560.0       860     561.0       870     562.0       890     564.0       900
GR    566.0       920     568.0       930     571.0       940     575.0       950     576.0       957
GR    592.5       957     592.2      1000     591.2      1100     589.9      1200     588.9      1300
GR    588.2      1400     588 0      1500

X1    4.682         0         0         0        20        20        20

X1    4 683        67       300       957         1         1         1
GR    591.4         0     591 4       100     591.7       200     592.2       300     573.5       300
GR    571.5       310     570.0       320     569.5       330     568.0       360     568.0       370
GR    567.0       390     562.0       440     560.6       447     560.0       450     560.0       460
GR    559.0       470     557.0       480     557.0       510     558.0       520     558.0       530
GR    560.0       550     560.0       560     558.0       580     557.2       588     556.5       595
GR    556.0       600     554.5       630     555.0       640     555.0       660     553.0       680
GR    553.0       690     545.5       700     552.5       704     563.0       710     563 5       720
GR    557.5       728     555.7       731     553.0       740     553.0       750     554 0       760
GR    553.0       770     554.0       780     554.0       790     555.0       800     555.5       810
GR    555.5       820     557 0       830     558.2       836     559.0       840     559.2       843
GR    561.0       850     560.0       860     561.0       870     562.0       890     564.0       900
GR    566 0       920     568.0       930     571.0       940     575 0       950     576.0       957
GR    592.5       957     592.2      1000     591.2      1100     589.9      1200     588.9      1300
GR    588.2      1400     588.0      1500
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810' U/S FROM U/S FACE OF PENN CENTRAL RAILRAD BRIDGE #1 SEC. O

X1	4.835	64	124	946	809	809	809		
GR	586.7	0	586.2	25	585.3	70	582.7	83	584.0	111
GR	582.2	124	581.9	125	580.9	130	580 7	135	579.5	145
GR	579.0	155	576.0	185	575.0	205	574.0	215	572.0	225
GR	571 5	235	571.5	255	571.0	265	572.0	285	572.0	295
GR	570.0	335	569.0	345	565.0	365	559.0	385	557 0	395
GR	556.5	405	557 0	415	556.0	425	553.0	445	552.0	455
GR	552.0	465	551.0	475	552.0	485	552.0	495	553.0	505
GR	553.0	515	554.0	525	554.0	535	553.5	545	554.0	555
GR	554.0	585	554.5	595	554.0	605	554 0	625	555.0	645
GR	555.0	725	555.5	735	555.5	755	555.0	765	555.5	775
GR	555.5	785	557.0	815	558.0	825	560.0	835	565.0	885
GR	566.0	905	567.0	915	571.0	925	575.5	935	579.5	945
GR	582.8	946	584.5	950	584.7	1025	586.3	1125		
NC	.035	.035	.029	.1	.2					
X1	4.967	89	100	907	702	702	702			
GR	590.9	0	595.2	100	577.7	100	576.7	105	574.2	110
GR	572.7	120	571.2	130	570.7	140	569.2	150	568 2	160
GR	568.2	170	566.2	180	565.2	190	566.2	200	565.2	210
GR	565.2	220	565.7	230	565.1	236	564.7	240	564.6	243
GR	564.2	250	564.2	260	562.2	270	562.2	280	560.2	300
GR	560.2	310	559.2	320	560.2	330	559.7	340	560.7	350
GR	561.2	360	560.2	370	559.8	379	559.7	380	558.2	386
GR	557.2	390	556.2	400	554.2	410	553.2	420	553.2	440
GR	555.2	460	560.2	470	564.7	479	565.2	480	567.2	490
GR	566 2	500	564.2	510	560.2	520	557.8	526	556.2	530
GR	554.2	540	554.2	570	553.2	580	555.2	600	557.2	610
GR	560.2	620	560.5	621	562.6	628	563.2	630	563.2	650
GR	565.2	660	566.2	670	568.2	680	567.7	690	568.2	700
GR	567.2	710	565.2	720	567.2	730	568.2	740	569.2	760
GR	569 2	765	569.2	770	569.0	772	568.2	780	567.2	790
GR	565 2	800	565.2	810	564 7	820	566.2	830	567.2	840
GR	566.7	850	568.7	860	570.2	870	572.2	880	576.2	890
GR	577.7	900	580.2	907	596.6	907	594.0	1000		

D/S FACE OF THIRD STREET BRIDGE SEC. P

X1	4.968	91	100	907	1	1	1		
GR	590.9	0	595.2	100	577.7	100	576.7	105	574.2	110
GR	572.7	120	571 2	130	570 7	140	569.2	150	568.2	160
GR	568.2	170	566 2	180	565.2	190	566.2	200	565.2	210
GR	565.2	220	565.7	230	565.1	236	598.9	236	598.8	243
GR	564 6	243	564.2	250	564.2	260	562.2	270	562.2	280
GR	560.2	300	560.2	310	559.2	320	560.2	330	559.7	340
GR	560.7	350	561 2	360	560.2	370	559.8	379	601.4	379
GR	601.4	386	558.2	386	557.2	390	556.2	400	554.2	410
GR	553.2	420	553.2	440	555.2	460	560.2	470	564.7	479
GR	601.5	479	601 5	526	557.8	526	556.2	530	554.2	540
GR	554.2	570	553 2	580	555 2	600	557.2	610	560.2	620
GR	560.5	621	601 4	621	601.3	628	562.6	628	563.2	630
GR	563.2	650	565.2	660	566.2	670	568.2	680	567.7	690
GR	568.2	700	567.2	710	565.2	720	567.2	730	568.2	740

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GR    569.2     760     569.2     765     599.1     765     599 0     772     569.0     772
GR    568.2     780     567.2     790     565.2     800     565.2     810     564.7     820
GR    566.2     830     567 2     840     566.7     850     568.7     860     570.2     870
GR    572 2     880     576.2     890     577.7     900     580.2     907     596.6     907
GR    594.0    1000

X1    4.975       0         0         0        34        34        34

X1    4.976      89       100       907         1         1         1
GR    590.9       0     595.2       100     577.7       100     576.7       105     574.2       110
GR    572.7     120     571 2       130     570.7       140     569 2       150     568.2       160
GR    568.2     170     566.2       180     565.2       190     566.2       200     565.2       210
GR    565.2     220     565.7       230     565.1       236     564.7       240     564.6       243
GR    564.2     250     564.2       260     562.2       270     562.2       280     560.2       300
GR    560.2     310     559.2       320     560.2       330     559.7       340     560.7       350
GR    561.2     360     560.2       370     559.8       379     559.7       380     558.2       386
GR    557.2     390     556.2       400     554 2       410     553 2       420     553.2       440
GR    555.2     460     560.2       470     564.7       479     565.2       480     567.2       490
GR    566.2     500     564.2       510     560 2       520     557 8       526     556.2       530
GR    554.2     540     554.2       570     553.2       580     555.2       600     557.2       610
GR    560.2     620     560.5       621     562.6       628     563.2       630     563.2       650
GR    565 2     660     566.2       670     568.2       680     567.7       690     568.2       700
GR    567.2     710     565.2       720     567 2       730     568.2       740     569.2       760
GR    569.2     765     569.2       770     569.0       772     568.2       780     567.2       790
GR    565.2     800     565.2       810     564.7       820     566.2       830     567.2       840
GR    566.7     850     568.7       860     570.2       870     572.2       880     576.2       890
GR    577.7     900     580.2       907     596.6       907     594.0      1000

NC      035    .035     .028        .1        .2
QT        2   65900    65900
        933' U/S FROM U/S FACE OF THIRD STREET BRIDGE        SEC. Q
X1    5.152      70       599      1331       932       932       932
GR    583.8       0     583.1       100     583.5       200     583.9       300     583 7       400
GR    584.6     500     583.3       587     582.5       599     582.3       600     581.3       610
GR    579.9     620     579.4       630     577 4       650     576.9       660     580.4       670
GR    575.9     680     574.9       690     573.4       700     571.4       730     570.0       740
GR    569.9     750     569.4       760     568.4       780     567 4       780     565.9       800
GR    565 4     810     562.4       830     561.9       840     561 4       850     561.4       870
GR    560.8     880     560.4       890     559.4       910     557.4       930     556.9       940
GR    556.9     950     557 4       960     557.9       970     557.4       980     556 4      1000
GR    556.4    1010     555.9      1020     556.4      1030     556 4      1040     555.9      1050
GR    556.4    1060     556.4      1070     556.9      1080     556.9      1120     556.4      1130
GR    556.4    1160     557.4      1170     557.4      1180     559.9      1230     559.9      1240
GR    560.4    1250     560.4      1270     560.9      1280     560.9      1290     561.4      1300
GR    561.4    1310     563.4      1320     565.4      1325     566 3      1327     578.4      1331
GR    583.4    1331     583.7      1340     583.8      1400     584.6      1500     587.0      1600

X1    5.325      84       280       877       920       920       920
GR    610.0       0     610.2       100     595.6       100     595.3       105     586.8       125
GR    585.3     150     584.9       168     584.9       172     584.3       200     584.1       250
GR    583 7     277     582.4       278     582.3       280     580.9       285     581.5       287
GR    582.3     290     578 9       291     575.4       292     570 4       300     567.4       310
GR    562.9     320     560.9       330     559.9       340     559.9       350     559.4       360
GR    559 4     380     559 9       390     559.4       400     559 8     407.5     559.9       410
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GR	559.8	411.5	559 4	420	558.9	430	558.9	450	559.4	460
GR	560.4	470	560.9	480	561.9	490	562.4	500	562.4	510
GR	561.5	519	561.4	520	559.9	530	556.4	540	555.4	560
GR	555.4	580	554.9	590	553.9	600	554.4	610	553.4	620
GR	552.9	630	552.9	640	553.9	650	553.9	660	553.4	670
GR	553 4	680	554.4	690	554.4	700	554.9	710	555.4	720
GR	556.3	729	556.4	730	556.4	740	555.4	750	555.9	760
GR	557.4	770	559.9	780	562.9	790	564.9	800	565 9	810
GR	567.9	820	569 9	840	572.9	850	578 9	860	579.4	867
GR	581.9	868	582.3	877	582.9	881	583.0	882	583.4	915
GR	599.0	945	599 1	949	606.5	949	604.4	1000		

D/S FACE OF VETERANS MEMORIAL BRIDGE SEC. R

X1	5.326	87	280	877	1	1	1			
GR	610.0	0	610.2	100	595.6	100	595.3	105	586.8	125
GR	585.3	150	584.9	168	609.9	168	609.9	172	584.9	172
GR	584.3	200	584.1	250	583.7	277	582.4	278	582.3	280
GR	580.9	285	581.5	287	609.4	287	609.3	291	578.9	291
GR	575.4	292	570.4	300	567.4	310	562.9	320	560.9	330
GR	559.9	340	559.9	350	559.4	360	559 4	380	559.9	390
GR	559.4	400	559.8	407.5	608.9	407.5	608.9	411.5	559.8	411.5
GR	559.4	420	558.9	430	558.9	450	559.4	460	560.4	470
GR	560.9	480	561.9	490	562.4	500	562.4	510	561.5	519
GR	608.7	519	608.6	560	555.4	560	555.4	580	554.9	590
GR	553.9	600	554.4	610	553 4	620	552.9	630	552.9	640
GR	553.9	650	553 9	660	553.4	670	553.4	680	554.4	690
GR	554.4	700	554.9	710	555.4	720	556.3	729	608.6	729
GR	608.6	770	557.4	770	559.9	780	562.9	790	564 9	800
GR	565 9	810	567.9	820	569.9	840	572.9	850	578.9	860
GR	579 4	867	581.9	868	582.3	877	607.8	877	607 7	881
GR	582.9	881	583.0	882	583.4	915	599.0	945	599.1	949
GR	606.5	949	604.4	1000						
X1	5.339	0	0	0	68	68	68			
NH	3.0	.035	290	.028	877	035	1000			
X1	5.340	84	280	877	1	1	1			
GR	610.0	0	610.2	100	595.6	100	595.3	105	586 8	125
GR	585 3	150	584.9	168	584.9	172	584.3	200	584.1	250
GR	583.7	277	582.4	278	582.3	280	580.9	285	581 5	287
GR	582.3	290	578.9	291	575.4	292	570.4	300	567.4	310
GR	562.9	320	560.9	330	559.9	340	559.9	350	559.4	360
GR	559.4	380	559.9	390	559.4	400	559.8	407.5	559.9	410
GR	559.8	411.5	559.4	420	558.9	430	558.9	450	559.4	460
GR	560.4	470	560.9	480	561.9	490	562.4	500	562.4	510
GR	561.5	519	561.4	520	559.9	530	556.4	540	555.4	560
GR	555.4	580	554.9	590	553.9	600	554.4	610	553.4	620
GR	552.9	630	552 9	640	553 9	650	553.9	660	553.4	670
GR	553.4	680	554.4	690	554.4	700	554.9	710	555.4	720
GR	556.3	729	556.4	730	556.4	740	555.5	750	555.9	760
GR	557.4	770	559.9	780	562.9	790	564.9	800	565.9	810
GR	567.9	820	569.9	840	572.9	850	578.9	860	579.4	867
GR	581.9	868	582.3	877	582.9	881	583.0	882	583.4	915
GR	599.0	945	599.1	949	606.5	949	604.4	1000		

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NH      3.0       .035       485       .025       1325       .035       1685
ET        0          0       4.1       182       1346
        2990' U/S FROM U/S FACE OF VETERANS MEMORIAL BRIDGE        SEC.  S
X1    5.905         86       182      1346       2990      2990       2990
GR    589.8          0     585.6        85      584.2       135      582.9        182      582.2        185
GR    581.3        195     579.8       205      578 8       225      577.8        235      576.8        255
GR    577.3        265     577.3       305      577.8       315      578.3        325      577.8        335
GR    578.3        345     578.3       355      578.8       365      578.3        375      578.3        425
GR    577.3        435     577.3       445      576.8       455      575.3        485      575.3        515
GR    574.8        525     575 3       535      575.3       565      574.3        575      574 3        595
GR    573.8        605     574.3       615      574.3       645      575.3        655      575.3        665
GR    575.8        675     576.3       685      576.3       695      576.8        705      576.3        715
GR    576.3        725     576.8       735      576.3       745      576.3        785      575.3        795
GR    575.3        825     574.3       835      574.3       845      573.3        865      572.3        875
GR    571.8        885     570.3       895      569.8       905      568.3        915      567.3        925
GR    565.3        935     564.3       945      562.3       955      561.3        965      561.3        975
GR    558 3       1005     558.3      1015      557.3      1025      557.3       1085      556.8       1095
GR    556.8       1145     556.3      1155      556.8      1165      556.8       1175      560.3       1245
GR    561.3       1255     565.3      1275      566.8      1285      566.3       1295      568.3       1305
GR    572.3       1315     575.3      1325      577.8      1335      580.6       1340      582 2       1345
GR    582.9       1346     584.8      1365      584.1      1385      582.6       1485      583 2       1585
GR    584.0       1685

QT        2      57650      57650
NH      5.0       .035       473       .035        763       .035       1023       .027       1563       .035
NH     1833
ET        0        4.1        1.4       933       1833
        NORTH END OF MIDDLE GROUND ISLAND        SEC.  T
X1    6.222         95       989      1568       1670      1670       1670
GR    591.8          0     588.0        33      584.5        83      583.6        132      580.7        133
GR    580.3        138     580.1       153      579 6       173      579.1        183      578.6        203
GR    578.1        233     578.1       253      577.6       263      578.1        293      578.6        303
GR    578.6        313     579.1       323      579.1       343      580.1        363      580.1        383
GR    579.1        393     579 1       463      580.1       473      579.1        493      578.1        503
GR    577.6        513     576.1       523      574.1       563      573.6        583      574.1        603
GR    573.1        623     573.1       643      572.6       663      572.6        673      572.1        703
GR    571.1        713     573.1       723      574.1       733      577.1        743      580.6        763
GR    580.6        793     581.1       803      581.1       813      581.6        823      582.0        833
GR    582.3        834     584.6       863      585.5       933      584.7        978      582.4        988
GR    582.0        989     581.1       993      579.1      1003      578.6       1023      577 1       1033
GR    576.1       1053     576.1      1063      575.1      1083      574.1       1103      573.1       1113
GR    571.1       1123     570.1      1133      569.6      1143      567.1       1163      565.1       1183
GR    563.1       1193     558.1      1213      557.1      1223      555.1       1243      554.6       1253
GR    553.1       1343     554.1      1353      554.1      1363      555 6       1393      555 1       1403
GR    555.1       1413     556.1      1423      555.6      1433      556.6       1443      557.1       1453
GR    562.1       1463     562.6      1473      563.6      1483      565.6       1493      566.1       1503
GR    569.1       1523     570.1      1533      572.1      1543      575.6       1553      579.1       1563
GR    582.0       1568     583.8      1573      584.7      1633      587.2       1733      589.5       1833
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NH      5.0      .035      306      .030      802      .035      1390      .028      1837      035
NH     2126
ET        0      4.1        0      1106     2126
X1    6.519       95     1390      1837     1573      1573      1573
GR    592.1        0    591.3       106    591.9       206     595.1       306     579 6       306
GR    579.1      311    578.1       316    576.1       326     575.1       346     573.1       366
GR    571 1      406    572.1       426    572.1       436     571.1       456     570.1       466
GR    569.6      476    569.4       480    569.1       486     573.1       506     573.1       526
GR    573.6      536    572.1       546    571.5       552     571.1       556     571.1       566
GR    574.0      596    579.1       616    579.6       626     579.7       628     579.9       632
GR    580.1      636    580.3       646    580.6       656     581.6       676     581.8       686
GR    581.8      726    582.0       730    582.3       736     582.9       756     584.9       802
GR    595.1      802    595.0       806    590.5       906     589.7      1006     590.3      1106
GR    591.2     1206    593.5      1306    597.8      1390     578.1      1390     575.6      1400
GR    570.1     1410    569.1      1420    568.6      1430     567.1      1440     566.1      1450
GR    564.6     1460    558.1      1470    559.1      1480     558.2      1483     556.1      1490
GR    552.1     1510    548.1      1520    548.4      1523     550.1      1540     553 1      1550
GR    553.6     1560    552.1      1570    552.1      1600     551.1      1610     552.1      1620
GR    552 1     1640    553.1      1650    552.1      1660     552.6      1670     551.1      1680
GR    547.1     1690    546.7      1694    546.1      1700     546.1      1710     547.1      1720
GR    549.9     1734    551.1      1740    560.6      1750     562.1      1760     563.1      1770
GR    564.1     1780    565.1      1790    567.1      1800     570 1      1810     561.1      1826
GR    577.6     1837    597.5      1837    594.5      1906     592.8      2006     592.8      2126

NC     .035      .035     .028       .1        .2
ET        0      4.1        0      1106      1906
          D/S FACE OF LAFAYETTE BRIDGE          SEC.  U
X1    6.520       95     1390      1837         1         1         1
GR    592.1        0    591.3       106    595.1       306     579.6       306     579.1       311
GR    578.1      316    576.1       326    575 1       346     573.1       366     570.1       376
GR    570.0      378    597.3       378    597.4       382     569.8       382     569.6       386
GR    569.6      476    600.3       476    600.3       480     569.4       480     569.1       486
GR    573.1      506    573.1       526    573.6       536     572.1       546     571.5       552
GR    601.4      552    601.4       556    571.1       556     571.1       566     574.1       596
GR    579.1      616    579.6       626    579.7       628     600.3       628     600.2       632
GR    579.9      632    580.1       636    580.6       656     581.6       676     581.8       686
GR    581.8      726    597.4       726    597.3       730     582.0       730     582.3       736
GR    582.9      756    584.9       802    595.1       802     595.0       806     590.5       906
GR    589.7     1006    590.3      1106    591.2      1206     593.5      1306     597.8      1390
GR    578.1     1390    575.6      1400    570 1      1410     569.1      1420     567.1      1440
GR    564.6     1460    558.1      1470    559.1      1480     558.2      1483     600.6      1483
GR    601.7     1523    548.4      1523    550.1      1540     553.1      1550     553.6      1560
GR    552.1     1570    552.1      1600    551 1      1610     552 1      1640     553.1      1650
GR    552.1     1660    552.6      1670    551 1      1680     547.1      1690     546.7      1694
GR    601.7     1694    600 8      1734    549.9      1734     551.1      1740     560.6      1750
GR    562.1     1760    563.1      1770    564.1      1780     565 1      1790     567.1      1800
GR    570.1     1810    561.1      1826    577.6      1837     597 5      1837     594.5      1906
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ET        0        4.1        0       1106       1906
X1    6.528          0        0          0         42         42         42

ET        0        4.1        0       1106       2126
X1    6.529         95     1390       1837          1          1          1
GR    592 1          0    591.3        106      591.9        206      595.1        306      579.6        306
GR    579.1        311    578.1        316      576.1        326      575.1        346      573.1        366
GR    570.1        376    570.0        378      569.8        382      569.6        386      570 6        396
GR    571.1        406    572.1        426      572.1        436      571.1        456      570.1        466
GR    569.6        476    569.4        480      569.1        486      573.1        506      573.1        526
GR    573.6        536    572 1        546      571.5        552      571.1        556      571.1        566
GR    574.1        596    579.1        616      579.6        626      579.7        628      579.9        632
GR    581.8        726    582.0        730      582.3        736      582.9        756      584.9        802
GR    595.1        802    595.0        806      590.5        906      589.7       1006      590.3       1106
GR    591.2       1206    593.5       1306      597.8       1390      578.1       1390      575.6       1400
GR    570.1       1410    569.1       1420      568.6       1430      567 1       1440      566.1       1450
GR    564.6       1460    558.1       1470      559.1       1480      558.2       1483      556.1       1490
GR    552.1       1510    548.1       1520      548.4       1523      550.1       1540      553.1       1550
GR    553.6       1560    552.1       1570      552.1       1600      551.1       1610      552.1       1620
GR    552.1       1640    553.1       1650      552.1       1660      552.6       1670      551.1       1680
GR    547.1       1690    546.7       1694      546.1       1700      546.1       1710      547.1       1720
GR    549 9       1734    551.1       1740      560.6       1750      562.1       1760      563.1       1770
GR    564.1       1780    565.1       1790      567.1       1800      570.1       1810      561.1       1826
GR    577.6       1837    597.5       1837      594.5       1906      592.8       2006      592.8       2126

NH      5.0       .035      720       .030       1120       .035       2120       .027       2760       .035
NH     2845
ET        0        4.1       1.4       2030       2845
          2578' U/S FROM U/S FACE OF LAFAYETTE BRIDGE          SEC  V
X1    7 016         95     2030       2760       2578       2578       2578
GR    594.2          0    591.5         10      590.4         15      591.0         35      592.1         90
GR    592.6        290    590.6        490      588.5        590      587.1        662      585.4        670
GR    583.5        687    582.4        689      581 9        690      581.0        695      579.5        710
GR    579.0        720    578.0        730      577.0        740      577.0        750      574 0        760
GR    574 0        880    573.5        910      574.0        920      574.0        930      574.0        950
GR    574.0        980    574.5        990      574.5       1010      575.0       1020      575.0       1040
GR    576.0       1050    577.0       1070      577.0       1080      578.0       1100      578.0       1110
GR    579.0       1120    579.0       1160      580.0       1180      580.0       1190      580.6       1200
GR    581.0       1205    581 9       1206      585.2       1210      585.1       1290      584.6       1390
GR    583.2       1490    584.1       1590      583.1       1690      582.6       1890      583.6       2030
GR    581.9       2031    578.0       2040      577.0       2050      577.0       2120      576.0       2140
GR    576.0       2170    575.0       2190      576.0       2210      575.0       2250      575.0       2260
GR    574 0       2280    571.5       2300      569.0       2320      566.5       2340      563 0       2350
GR    561.0       2360    556.0       2370      554.0       2390      554.0       2410      554 0       2420
GR    553.5       2440    553.0       2450      555.0       2470      555.0       2510      555.5       2520
GR    554.0       2550    555.0       2560      555.0       2590      556.5       2600      557.0       2610
GR    563.0       2630    568.0       2640      570.0       2650      571.0       2660      571.0       2670
GR    572 0       2680    573 0       2700      574.5       2710      572.5       2720      572.5       2730
GR    573.0       2740    575.0       2760      584.6       2760      583 9       2790      585.6       2845
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NH      5.0       .035       460       .030       840       .035      1840       .026      2380       035
NH     2490
ET        0        4.1         0       1190      2490
          5488' U/S FROM U/S FACE OF LAFAYETTE BRIDGE          SEC. W
X1    7.567         95      1742       2400      2910      2910      2910
GR    589.0          0     587.6          5     584.5        15     583.1        30     584.7        35
GR    584.9        190     584.6        290     583.0       385     582.2       389     581.6       390
GR    580.6        400     580.8        420     582.0       423     582.5       425     582.7       433
GR    582.0        435     581.1        440     580.1       450     578 1       460     575.6       480
GR    575.6        490     575.1        510     576 1       520     575.1       530     575.1       550
GR    574.1        570     574.1        590     573.1       610     573.1       630     572.6       640
GR    573.6        770     575 6        810     577.1       830     578.1       840     579.6       870
GR    580.8        880     582.0        890     582.8       892     582.3      1090     585.3      1190
GR    584.7       1290     583.5       1390     585.1      1490     586.0      1590     586.0      1690
GR    584.7       1742     582.1       1753     580.6      1760     576.1      1780     574.6      1790
GR    574.1       1800     575.1       1810     575.1      1840     574.6      1850     573 6      1860
GR    570.1       1870     567.1       1890     564.1      1920     564.6      1930     563.1      1940
GR    562.1       1950     558.1       1970     555.1      1990     556.1      2000     556.1      2010
GR    555.1       2020     555.1       2070     554.6      2080     554.6      2090     555.1      2100
GR    555.1       2110     554.1       2120     555.1      2130     555.1      2150     555.6      2160
GR    555 1       2170     555 1       2200     556.1      2210     556.1      2220     558.1      2260
GR    558.1       2270     558.6       2280     559 1      2300     558.1      2310     557.6      2330
GR    558.1       2340     561.1       2350     567.1      2360     573.1      2370     577.6      2380
GR    580.8       2390     582.0       2400     583.3      2407     584.8      2440     585.2      2490

NH      5.0       .035       957       .030      1332       .035      1432       .030      1912       .035
NH     2452
ET        0        4.1         0       1342      1982
          SOUTH END OF MIDDLE GROUND ISLAND & NORTH END OF SKULL ISLAND  SEC. X
X1    8.099         86      1432       1952      2810      2810      2810
GR    589.3          0     587 8          7     583.0        19     582.5        27     583.0        32
GR    583.6         52     584.0        152     583.8       252     583 4       352     583.1       452
GR    584.3        552     583.1        652     583.1       752     583.3       852     583.0       951
GR    581.9        952     579.5        957     577.0       962     576.0       972     576.0      1062
GR    575.5       1072     575.5       1092     575.0      1102     575.0      1112     574.5      1122
GR    574.5       1132     574.0       1142     574.0      1152     573.5      1162     573.5      1172
GR    573.0       1182     573.0       1272     574.0      1292     574.0      1302     574.5      1312
GR    576.0       1322     579.0       1332     581 9      1337     583.7      1342     583.3      1425
GR    583.3       1432     576.0       1432     575.0      1437     574.0      1442     570.0      1452
GR    568.0       1462     567.0       1472     566.0      1482     564.0      1492     562.0      1502
GR    562.0       1512     559 0       1532     557.0      1542     556.0      1552     556.0      1562
GR    554.0       1572     553.0       1582     553.5      1592     553.5      1602     553.0      1612
GR    553.0       1622     553.5       1632     553.5      1642     554.0      1652     554.0      1752
GR    556.0       1792     558.0       1802     558.0      1812     564.0      1842     565.0      1852
GR    567.0       1862     576.0       1892     579.0      1912     579.5      1922     580.5      1932
GR    581.0       1942     581.9       1952     582 2      1952     585.6      1982     583.2      2002
GR    590.4       2052     587 3       2072     588.0      2152     588.1      2252     589.8      2352
GR    591.3       2452
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QT        2      65900      65900
NH      3.0       .035       1117       .030       1882       .035       3312
ET        0        4.1        6.1          0       1927       1010       1923
          750' U/S FROM MIDDLE GROUND ISLAND          SEC  Y
X1    8 241         94       1111       1927        750        750        750
GR    588.8          0      587.8          9      585 4         19      585.2        112      584.8        212
GR    584.8        312      585.4        412      585.3        512      585.4        612      584.6        712
GR    585.7        812      583.7        912      582.7       1012      583 0       1111      582.2       1112
GR    580.3       1117      577.8       1122      576.3       1132      575 3       1142      574.8       1152
GR    574.8       1162      574.3       1172      574.3       1182      573 3       1192      572.8       1202
GR    573 3       1212      573 3       1232      572.8       1242      572.3       1252      572.3       1262
GR    571.8       1272      571.8       1282      571.3       1292      571.3       1302      570.3       1312
GR    569.8       1322      569.8       1332      569.3       1342      569.3       1352      568.8       1362
GR    568.8       1372      568.3       1382      565.3       1412      565.3       1422      563.3       1432
GR    563.3       1442      564.3       1462      563.8       1472      562.3       1482      561.3       1492
GR    559.3       1502      556.3       1512      554.3       1532      554.8       1542      554.8       1552
GR    555.3       1562      554.8       1572      554.8       1582      555.3       1592      555 3       1672
GR    554.8       1682      554.3       1692      554.3       1712      554.8       1722      555.3       1732
GR    555.3       1762      557.3       1782      560.3       1792      564.3       1812      565.3       1829
GR    571.3       1842      574.3       1852      576.3       1862      578.3       1882      578.8       1892
GR    579 8       1902      580.5       1912      582.2       1920      582.7       1922      588.4       1927
GR    586.9       2012      587.0       2112      587.2       2212      587.8       2312      589.1       2412
GR    589.9       2512      588.7       2612      587.7       2712      587.4       2812      586.0       2912
GR    585.6       3012      584.8       3112      585.0       3212      585.4       3312

NH      3 0       .035        166       .029       1076       .035       3936
QT        2      67100      67100
ET        0        4.1        1.4          0       1900
          5170' U/S FROM MIDDLE GROUND ISLAND          SEC.  Z
X1    9.079         95         21       1086       4420       4420       4420
GR    587.8          0      586.8          8      584.3         11      582 0         20      582.0         21
GR    581.1         26      580.9         36      580.6         46      580.1         56      580.1        116
GR    578.1        156      578.1        166      577.1        186      576.6        206      575.1        236
GR    572 1        256      571.1        266      570.6        276      570.6        296      570.1        306
GR    568.1        326      565.1        336      559.1        346      556.1        356      554.1        376
GR    551.6        396      551.1        406      551.1        466      552.6        486      555.1        536
GR    556.1        546      556.1        556      558.1        566      558.1        576      559.1        586
GR    561.1        596      562.1        606      564.1        616      568.1        626      569.6        636
GR    570.1        646      570.1        656      570.6        666      570 6        676      571 1        686
GR    571.1        726      571.6        736      571.6        746      572 1        756      572.1        776
GR    572.6        786      572.6        806      573.1        816      573.1        846      573.6        856
GR    573.6        876      574.1        886      574.1        906      574.6        916      574.6        936
GR    575.1        946      575.1       1006      575.6       1016      575.6       1026      577.1       1056
GR    578.1       1066      578.6       1076      581.1       1081      582.0       1086      583 9       1087
GR    586.0       1091      582.8       1131      581.7       1186      582.2       1286      582.1       1686
GR    581.8       1786      581.0       1886      580.4       2086      580.7       2286      580.9       2386
GR    581.5       3086      582.0       3286      582.3       3386      582 0       3486      583.0       3586
GR    583.3       3673      585.2       3682      585.2       3778      583.4       3786      581.9       3840
GR    579.6       3844      579.9       3881      582.7       3886      587.8       3906      588.8       3936
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NH      5.0       .035       940       .028       1710       .035       2040       .028       3430       .035
NH     3670
ET        0        4.1       6.1          0       2250        560       2140
          4260' D/S FROM CHEBOYGANING CREEK          SEC.  AA
X1    9.584         94       660       1743       2800       1700       2670
GR    587.5          0     587.4         10      580.8         20      580.8         40      580.3        140
GR    580.5        240     580 9        340      581.6        440      582.1        510      582.9        540
GR    582.9        640     583.1        660      581.9        681      581.5        690      581.0        740
GR    579.9        790     579.9        840      580.1        880      579.9        900      579.7        910
GR    578.7        930     578.7        940      578.2        950      578.2        960      577.7        970
GR    577.7        980     576.7       1000      576.7       1020      575 7       1040      575.7       1050
GR    574.7       1070     574.7       1080      573.7       1100      571.7       1110      570.7       1120
GR    560.7       1170     558.7       1190      556 7       1200      555 7       1210      555.7       1220
GR    554.7       1230     554.7       1290      555.7       1310      555.7       1330      554.7       1350
GR    554.7       1410     557.7       1420      564.7       1430      571.2       1440      571.7       1450
GR    571.7       1480     572.7       1490      573.7       1510      573.7       1520      574.7       1540
GR    574.7       1620     575.2       1630      575.2       1660      577.7       1710      579.2       1720
GR    579 9       1730     580.7       1735      581.6       1740      581.7       1741      583.0       1743
GR    584.5       1840     585.0       1940      583.8       1955      579.3       1965      579 4       2015
GR    581 2       2025     581.3       2040      580.2       2140      580.2       2340      580.3       2440
GR    580.7       2540     580.8       2640      581.4       2740      581.4       2840      581.1       2940
GR    580.7       3040     581.0       3140      580.7       3240      581.3       3340      585.3       3430
GR    581.8       3448     581.9       3470      581.4       3505      581.2       3545      575.2       3570
GR    581.2       3600     583.0       3605      587.6       3630      588.8       3670

NH      3.0       .035      1617        030       2352       .035       2407
ET        0          0       1.4
          800' D/S FROM CHEBOYGANING CREEK          SEC   AB
X1   10.240         64      1575       2358       3050       3600       3460
GR    587.7          0     581.6         17      579.6         20      579.6        235      580.1        432
GR    580.0        742     580.0        957      579.9       1107      580.6       1337      581.6       1557
GR    583.2       1567     582.0       1575      581.5       1577      581.1       1587      579.6       1617
GR    577.6       1637     576.6       1657      576.6       1667      574.6       1677      573.6       1697
GR    569.6       1737     559.6       1787      558.6       1797      558.6       1807      557 6       1817
GR    557.6       1837     556.6       1847      555.1       1857      554.6       1867      554.6       1907
GR    555.1       1917     554.6       1927      554.6       1967      555.6       1977      555.6       1987
GR    557.6       2007     560.6       2017      563.6       2027      566.6       2037      569.1       2047
GR    569.6       2057     570.1       2067      569.1       2077      569.6       2087      568.6       2097
GR    568.6       2127     568.1       2137      568.1       2177      568.6       2187      568.6       2197
GR    569.6       2217     569.6       2237      570.6       2247      570.6       2257      574.6       2297
GR    575.1       2307     576.1       2317      576.6       2327      578.6       2347      579.6       2352
GR    581.5       2357     582.1       2358      587.9       2367      589.6       2407

NC      .035       .035       028         .1         .2
NH      3.0        .035       310       .025       1050       .035       1370
QT        2      68400     68400
ET        0        4.1       6.1         80       1370         80       1071
          350' NORTH FROM BAY COUNTY-SAGINAW COUNTY LINE          SEC.  AC
X1   10.993         66        70       1071       3100       4100       3980
GR    588.6          0     582.7         20      582.9         70      582.0         83      581.7         84
GR    581.3         90     580.8        100      580.8        110      580.3        120      580.3        140
GR    579.8        150     579.8        160      578.8        180      578.8        200      578.3        210
GR    578.3        230     577.8        240      577.8        310      577.3        320      577.3        340
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GR    576.8      350      576.8      420      576.3      430      576.3      450      575.3      470
GR    573.8      480      572.8      490      566.8      520      556.8      540      555.3      570
GR    555.8      580      555.8      600      554.8      620      554.8      630      555.3      640
GR    554.8      650      554 8      760      555.8      770      555.8      780      560.8      790
GR    561.8      800      571.8      810      572.8      830      572.8      860      573.3      870
GR    572.8      880      572 8      900      573.8      920      573.8      940      574 8      960
GR    574.8      970      575.3      980      575.3      990      575.8     1000      575 8     1020
GR    576.8     1040      577.8     1050      578.3     1060      579.3     1065      581.7     1070
GR    582.8     1071      586.4     1082      591.7     1145      591.9     1170      590.4     1270
GR    590.0     1370

NC     .035      035       .028       .1        .2
ET        0      4 1       6.1      210      1060      210      1060
X1   11.433        0         0        0      2325     2325      2325        0       .05         0

NH      3.0     .035       845      027      1395     .035      1495
ET        0      4.1       1.4      380      1495
        3920' SOUTH FROM BAY COUNTY-SAGINAW COUNTY LINE      SEC.  AD
X1   11.802       56       824     1426      1900     2000      1945
GR    586.5        0     583 8       16     581.8       25     581.3      125     582.0      225
GR    582.2      325     584.6      375     582.6      425     585.1      525     582.6      625
GR    582.0      675     582.1      785     584.1      810     582.2      824     581.8      825
GR    579.9      835     578.9      845     576.9      855     570.9      865     570.9      875
GR    567.9      885     560.9      895     559.9      905     557.9      915     556.9      925
GR    555 9      945     555.9      995     555.4     1005     555.4     1015     554.9     1025
GR    554.9     1075     555.9     1085     555.9     1145     558.9     1175     570.9     1185
GR    570 9     1215     571.4     1225     571.4     1235     571.9     1245     571.9     1255
GR    573.9     1295     574 9     1305     575.9     1325     575.9     1335     576.9     1355
GR    576.9     1365     577.9     1385     578.9     1395     580.4     1405     580.9     1415
GR    581.4     1420     581.8     1425     582.1     1426     584 6     1431     591.4     1460
GR    592.5     1495

NH      3.0     .035       835      027      1545     .035      1670
ET        0        0       4.1      200      1616
        4050' U/S FROM SECTION AD      SEC.  AE
X1   12.569       95       784     1616      4050     4050      4050
GR    588.6        0     588.4        5     582.4       18     581.8       20     580.4       45
GR    579 9       65     579.9      125     579.4      145     579.4      185     578.9      205
GR    579.4      225     578.9      245     578.9      265     579.4      285     579.4      345
GR    579.9      365     579.9      385     579.4      405     579.9      425     579.9      545
GR    579.4      565     579.9      585     579.4      605     579.4      685     578.9      705
GR    578.9      725     581.8      744     583.0      745     585.0      753     585.6      775
GR    583.0      784     581.8      785     580.9      790     580.4      795     578.9      805
GR    578 9      815     578.4      825     578.4      835     577.9      845     577.4      855
GR    577.4      865     576 9      875     576.4      885     576.4      895     575.9      905
GR    572.9      935     566.9      965     563.9      975     562.9      985     556.9     1015
GR    556.4     1025     556.4     1035     555.9     1045     555.9     1055     554.9     1075
GR    554.9     1085     553.9     1095     553 9     1115     553.4     1125     553.9     1135
GR    553.9     1175     554.4     1185     554.4     1205     553.9     1215     554.4     1225
GR    554.4     1235     554.9     1245     556.9     1255     556 9     1265     558.9     1275
GR    564.9     1295     568.9     1315     569.9     1325     571.9     1335     575.9     1375
GR    575.9     1395     576.4     1405     576.4     1415     576.9     1425     576.9     1455
GR    577.4     1465     577.4     1485     577.9     1495     577.9     1525     578.4     1535
GR    578.9     1545     578.9     1565     579.4     1575     580.4     1585     580.4     1595
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GR    580 9       1605       581.8       1615       582.4       1616       583.4       1645       589.7       1670

NH      3 0       .035        610       .028        1166       .035        1406
ET        0        4.1        6.1        230        1406        230        1315
          6115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE (I-75 BRIDGE)    SEC.  AF
X1   13.249         58        610       1187        3590       3590        3590
GR    588.6          0       581.7         20       581.9         66       584.5         71       585.9         86
GR    586.2         96       585.8        186       586.3        286       586.1        386       585.8        486
GR    585.4        586       585.3        610       564.5        611       561.6        626       560.6        636
GR    559.1        646       558.6        656       558.6        666       557.6        676       557.1        686
GR    556.1        696       555.6        706       555.6        716       555.1        726       554.6        736
GR    555 1        746       555 6        756       555.6        856       555.1        866       555.1        886
GR    554.6        896       554.6        926       556.6        936       562.6        946       563.6        956
GR    565.1        966       566.1        976       566.6        986       566.6        996       567.6       1006
GR    568.6       1026       569.6       1036       571 6       1046       575.6       1086       576.6       1106
GR    576.6       1116       577.6       1126       577.6       1146       579.6       1166       580.1       1176
GR    580.6       1181       581.5       1186       582.1       1187       585.5       1211       587.2       1286
GR    588.6       1351       588.0       1386       589.1       1406

NH      3.0       .035        395       .027         975       .035        1630
ET        0        4.1        6.1        275        1630        305        1500
          3485' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC.  AG
X1   13.747         63        365       1013        2630       2630        2630
GR    589.1          0       586.4         75       585.9        175       589.3        275       585.9        365
GR    581.5        374       582.0        375       581.1        380       580.3        385       578.1        395
GR    577.1        405       576.6        415       575.1        425       574.6        435       574.6        455
GR    575.1        465       575.1        495       574.1        515       572.1        535       567.1        545
GR    565.1        565       561.1        575       559.1        585       559.1        595       555 1        605
GR    554.6        615       554 6        645       554.1        655       554 1        665       553.1        685
GR    554 1        705       554.1        735       553.6        745       554.6        765       554.6        775
GR    554.1        785       554.1        805       556.1        825       556.1        835       567 1        845
GR    567.1        855       571.1        865       573.1        875       574.1        885       574.6        895
GR    576.1        905       576.1        935       576.6        945       579.6        975       580.1        985
GR    581.1        995       581.3       1005       582.0       1013       583.3       1075       583.6       1150
GR    583.3       1175       582.1       1205       580 6       1275       580.0       1375       579.6       1475
GR    580.6       1575       587.3       1595       588.6       1630

NH      3.0       .035        810       .028        1310       .035        1600
ET        0        4.1        1.4        780        1380
          115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC.  AH
X1   14 385         66        799       1335        3370       3370        3370
GR    587.0          0       585 8        100       585.3        200       584.1        300       584 2        400
GR    583.3        415       581.8        420       581.9        440       588.3        455       589.2        465
GR    587.5        500       589.8        570       595.0        583       594 9        600       594.6        615
GR    589.0        630       587.7        700       584 6        789       583.3        790       581.5        799
GR    581.3        800       580.4        805       579.4        810       577.4        820       572.4        830
GR    560.4        860       558.4        870       557.4        880       557.4        890       556.4        900
GR    557.9        910       559.4        920       557.4        930       557.4        940       558.9        950
GR    560.4        960       556.4        970       554.4        990       554.4       1000       554.9       1010
GR    554.4       1020       554.9       1030       554.4       1040       554.4       1060       553.4       1070
GR    553 4       1080       554.4       1090       555.4       1100       555.4       1130       556.9       1140
GR    557.4       1150       557.4       1170       559.4       1190       559.4       1210       562.4       1220
GR    566.4       1230       567.4       1240       575.4       1280       576.9       1290       578 9       1310
GR    580.4       1320       581 3       1330       581.8       1335       585 6       1400       588.5       1500
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GR    590.8       1600

NC     .035       .035       .028        .1         .2
ET        0          0        4.1        27        567
X1   14.406         52          4       590        114       114       114
GR    606.9          0      604.4         0      604.4         4     582.0        35     581.3        45
GR    580 9         50      576.9        60      571.4        70     563.4        90     563.4        95
GR    563.4        110      562.9       120      561.9       130     559.4       140     560.4       150
GR    559.4        160      557.4       170      556.9       175     556.4       180     557.4       190
GR    556.4        200      555.7       215      554.4       240     554.4       290     552.4       310
GR    554.4        330      555.9       340      558.4       350     560.4       370     558.4       380
GR    559.4        385      560.4       390      561.4       400     560.4       410     558 4       420
GR    559.4        425      560.4       430      563.4       440     567.4       460     568.4       470
GR    570.4        480      574.4       500      574.4       505     574.4       510     576.4       520
GR    577.9        530      579.9       540      580.9       550     581.3       553     582.0       560
GR    595.0        575      600.1       590

ET        0          0        4.1        27        567
          D/S FACE OF ZILWAUKEE BRIDGE          SEC.  AI
X1   14.407         53          4       590          1         1         1
GR    606.9          0      604.4         0      604.4         4     582.0        35     581 3        45
GR    580.9         50      576.9        60      571.4        70     563.4        90     604.6        90
GR    604.5         95      563.4        95      563.4       110     562.9       120     561.9       130
GR    559.4        140      560.4       150      559.4       160     557 4       170     556.9       175
GR    602.5        175      601.5       215      555.7       215     554.4       240     554.4       290
GR    552.4        310      554.4       330      555.9       340     558.4       350     560.4       370
GR    558.4        380      559.4       385      601.5       385     601.2       425     559.4       425
GR    560.4        430      563.4       440      567.4       460     568.4       470     570.4       480
GR    574.4        500      574 4       505      600.7       505     600.6       510     574.4       510
GR    576.4        520      577.9       530      579.9       540     580.9       550     581.3       553
GR    582.0        560      595.0       575      600.1       590

ET        0          0        4.1        27        567
X1   14.420          0          0         0         70        70        70

ET        0          0        4.1        27        567
X1   14.421         52          4       590          1         1         1
GR    606.9          0      604 4         0      604.4         4     582.0        35     581.3        45
GR    580.9         50      576.9        60      571.4        70     563.4        90     563.4        95
GR    563.4        110      562.9       120      561.9       130     559.4       140     560.4       150
GR    559.4        160      557.4       170      556.9       175     556.4       180     557.4       190
GR    556.4        200      555.7       215      554.4       240     554.4       290     552.4       310
GR    554.4        330      555.9       340      558.4       350     560.4       370     558.4       380
GR    559.4        385      560.4       390      561.4       400     560.4       410     558.4       420
GR    559.4        425      560.4       430      563.4       440     567.4       460     568.4       470
GR    570.4        480      574.4       500      574.4       505     574.4       510     576.4       520
GR    577.9        530      579.9       540      580.9       550     581.3       553     582.0       560
GR    595.0        575      600.1       590
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NC      .035       .035       .028        .1         .2
NH      3.0        .035       1725       .026       2285        035       2605
ET        0        4.1        6.1       1567       2280       1567       2280
          3885' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE          SEC.  AJ
X1    15.156        82       1567       2370       3884       3884       3884
GR     586 6         0       589.5         39      587.6        105      587.5        135      581.6        150
GR     579.9       155       579.6        205      581.6        218      585.2        220      588.2        325
GR     583.2       345       582.2        705      583.1        992      584 6       1077      587.6       1100
GR     583.5      1162       582.8       1465      585.9       1490      586.0       1505      585.2       1555
GR     588.6      1567       586.6       1590      581.9       1604      581.5       1605      580.1       1610
GR     577.1      1615       575.6       1625      575.6       1635      579 6       1645      579.1       1655
GR     579.1      1665       578.6       1675      578.6       1705      578.1       1715      578.1       1725
GR     577.6      1735       577.6       1745      575 6       1785      574.6       1795      574.6       1805
GR     573 6      1815       572.6       1825      570 6       1835      562.6       1915      562.6       1925
GR     560.6      1945       560.6       1955      559.6       1965      559.1       1975      557.6       1985
GR     557 6      1995       555.6       2015      555.6       2035      555.1       2045      555.1       2055
GR     554.6      2065       554.6       2085      553.6       2095      553.6       2105      554.1       2115
GR     555.1      2125       556.6       2135      556.6       2145      557.6       2155      557.6       2175
GR     558.1      2185       559.6       2195      560.6       2205      564.6       2225      576.6       2265
GR     577.6      2275       578.1       2285      578.1       2295      579.6       2325      579.6       2335
GR     580.3      2345       580.6       2355      581.5       2365      581.6       2370      582.6       2425
GR     584.9      2525       590.1       2605

NH      3.0        .035       2145       .026       2585       .035       2810
ET        0        4.1        6.1       2010       2810       2010       2645
X1    15.470        72       2114       2645       1657       1657       1657          0       .310          0
GR     585.7         0       587 9         28      589.2         38      587.2         50      581.9         60
GR     582.7        95       587.8        120      586.6        125      580.3        140      577 5        170
GR     579.5       185       586.4        195      586.7        219      585.5        245      584.8        265
GR     581.4       282       580.9        345      581.0        645      581.2        945      581.6       1090
GR     582.6      1145       583.2       1245      582.9       1345      582.9       1445      584.0       1545
GR     586.8      1645       583 8       1745      583.6       1845      585.0       1945      584.3       2045
GR     585.3      2105       581.8       2114      581.5       2115      579.8       2125      578.6       2135
GR     577.6      2145       561.6       2225      560.6       2235      560.6       2245      559.6       2255
GR     559.6      2265       558.6       2285      558.6       2305      557.6       2315      556.6       2335
GR     556.6      2345       556.1       2355      555.1       2365      554.1       2385      553.1       2395
GR     552.6      2405       552.6       2415      554.6       2425      554.6       2455      555.6       2465
GR     556.6      2485       558.6       2495      561.6       2505      564.6       2525      568.6       2535
GR     570.6      2545       571.6       2555      573.6       2565      573.6       2575      575.6       2585
GR     580.6      2635       581.1       2640      581.5       2645      581 9       2646      582.9       2695
GR     584.1      2745       589.2       2810

ET        0        4.1        6.1       2100       2810       2100       2645
          6295' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE          SEC.  AK
X1    15.612         0          0          0        750        750        750          0      -.310          0

NH      5.0        .035       1113       .025       1273       .035       1703       .025       2073       .035
NH     2293
ET        0        4.1        1.4       1000       2084
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          9235' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC. AL
X1    16.169        83      1075      2084      2940      2940      2940
GR     589.5         0     587.5        28     582.2        43     582 3        53     588.2        63
GR     589.7        77     582.2       101     581.0       109     582.0       118     587.1       128
GR     587.7       163     587.1       183     586.7       283     586.4       383     585.6       483
GR     585 1       583     585.0       583     585.0       683     585.8       883     585.9       983
GR     585.9      1071     587.6      1075     581.8      1083     578.7      1103     578.7      1113
GR     576.7      1123     575.7      1133     574.2      1143     573.7      1153     573.2      1163
GR     573.2      1173     572.7      1183     572.7      1223     573.7      1243     574.7      1253
GR     578.7      1273     579.7      1278     581.6      1282     581 5      1283     585.9      1288
GR     588.3      1383     592.7      1483     597.1      1583     603.2      1658     582.6      1685
GR     581.8      1692     581.6      1693     578.2      1703     577.2      1713     575.7      1723
GR     573.7      1743     570.7      1753     568.7      1763     565.2      1773     563.2      1783
GR     562.2      1793     559.7      1803     558.7      1813     558.7      1823     558.2      1833
GR     556.7      1843     556.7      1853     555.7      1873     555.7      1893     555.2      1903
GR     554.2      1913     553 7      1923     553.7      1933     552.7      1953     552.7      1983
GR     553.7      2003     553.7      2023     554 2      2033     555 7      2043     559.7      2053
GR     563.2      2063     577.7      2073     579.7      2078     581.6      2083     582.4      2084
GR     586 9      2093     590.6      2148     590.5      2293

NH       3.0      .035       845      .028      1485      .035      1790
ET         0       4.1         0       832      1491
          1455' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AM
X1    16.500        76       832      1491      1750      1750      1750
GR     589.7         0     587.9        90     587.8       190     588.7       290     588.7       297
GR     588.0       390     589.3       490     589.0       590     589 2       690     588.9       790
GR     588.5       820     582 5       832     581.9       833     579.0       845     576.5       850
GR     575 0       880     575.0       900     574.5       910     574.7       920     574.5       930
GR     574.5       940     574.0       950     574.0       960     573.5       970     573.2       980
GR     572.0       990     571.5      1000     571.5      1020     572 4      1030     574.5      1040
GR     575.0      1050     575.0      1060     575.2      1070     573.0      1080     570.0      1090
GR     569 5      1100     568.2      1110     565.5      1120     565 5      1130     566.0      1140
GR     566 0      1150     565.0      1160     563.7      1170     561.0      1180     559.0      1190
GR     558.0      1200     557.5      1210     556.0      1220     556.0      1240     555.0      1250
GR     554.3      1260     554.5      1270     555.5      1290     555.5      1300     556.0      1310
GR     556.0      1320     555.5      1330     554.9      1340     555.0      1350     555.0      1360
GR     555 5      1370     555.5      1390     556.0      1400     556.0      1410     556.3      1420
GR     557 0      1430     557.0      1440     563.0      1470     574.8      1480     579.0      1485
GR     581.5      1490     582.0      1491     588.2      1500     589.2      1590     589.3      1670
GR     590.9      1790

QT         2     68000     68000
NH       3.0      .035        55      .027       480      .035       600
           95' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AN
X1    16.758        45        54       501      1360      1360      1360
GR     589 8         0     590.4        25     587.6        54     557.3        55     556.3        70
GR     556.3        80     556.3       110     554.3       130     553.8       140     553.8       150
GR     553.3       160     551.3       170     551.3       190     551.3       200     552.3       210
GR     559.8       220     561.8       230     555.0       240     551 8       270     548.8       280
GR     548.8       288     548.1       300     549.3       310     549.3       330     549.8       340
GR     549.8       350     554.3       360     556 8       370     562.8       380     563.8       390
GR     563.8       410     565.3       420     565.3       430     565.8       440     567.8       450
GR     573.8       460     576 4       470     578.8       480     580.2       490     580 8       495
GR     581.7       500     581 9       501     583 4       510     586.1       520     589.3       600
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NH      3.0      .035      770      .028      1320      .035      3670
ET        0       4.1      6.1      770      1340       770      1330
X1   16.775        87      770     1340        95        95        95
GR    590.4         0    589.0      170     590.4       470     590.8       670     593.4       770
GR    583.5       770    580.7      780     578.6       790     577 1       800     575.6       810
GR    575.0       820    573.3      830     572 8       840     572.3       850     570 5       860
GR    564.9       870    556.2      880     553.6       890     552.2       900     552.5       910
GR    550.6       920    550.7      930     550.1       940     552.1       950     556.3       960
GR    560 5       970    555.7      980     552.8       990     550 1      1000     548.4      1010
GR    548.1      1020    547.8     1030     548.9      1040     549.3      1050     566.8      1060
GR    567.0      1070    565.7     1080     564.1      1090     562.3      1100     561.2      1110
GR    561.7      1120    563.1     1130     564.0      1140     564.4      1150     566.3      1160
GR    567.1      1170    566.3     1180     567.2      1190     568.6      1200     571.4      1210
GR    575.2      1220    576.5     1230     577.1      1240     578.3      1250     579.4      1260
GR    580.8      1270    581.9     1280     582.4      1290     583.0      1300     582.8      1310
GR    584 5      1320    589.3     1330     594.6      1340     593.2      1370     591.2      1470
GR    589.7      1570    589.3     1670     589.3      1770     589.0      1870     589.1      1970
GR    589.7      2070    590.1     2170     589.8      2270     589.5      2370     589.2      2470
GR    589 5      2570    589.9     2670     590.3      2770     590.4      2870     589 9      2970
GR    589.5      3070    589.4     3170     589.3      3270     589.1      3370     589.3      3470
GR    589.6      3570    589.8     3670

NH      3.0      .035      770      028      1320      .035      1342
ET        0       4.1      6 1      770      1342       770      1331
          D/S FACE OF SIXTH AVENUE BRIDGE          SEC. AD
X1   16.776        95      770     1342         1         1         1
GR    590.4         0    589.0      170     590.4       470     590.8       670     593.4       770
GR    583.5       770    580.7      780     580.0     783.5     593.9     783.5     594.0     784.5
GR    579.8     784.5    576.9    801.5     594.7     801.5     594.8     802.5     576.7     802.5
GR    575.6       810    575.0    819.5     595.4     819.5     595.4     820.5     574.9     820.5
GR    573.3       830    572 9    837.5     596.1     837.5     596.1     838.5     572.9     838.5
GR    572.3       850    571.3    855.5     596.3     855.5     596 3     856.5     571.1     856.5
GR    570.5       860    564.9      870     596.2       870     596.2       878     557.9       878
GR    556.2       880    553.6      890     552.2       900     552.5       910     550 7       930
GR    550.1       940    552 1      950     555.9       959     596.3       959     596.3       979
GR    556.2       979    555.7      980     552.8       990     548.4      1010     547.8      1030
GR    549.3      1050    566.8     1062     596.1      1062     596.1      1070     567.0      1070
GR    564.1      1090    562.3     1100     561.2      1110     561.7      1120     564.0      1140
GR    564.4      1150    566.3     1160     567.1      1170     566.3      1180     568.6      1200
GR    573.7      1216    596.2     1216     596 2      1224     575.7      1224     577.0    1237.5
GR    596.4    1237.5    596.5   1238.5     577.0    1238.5     578.9    1255.5     596.5    1255 5
GR    596.5    1256 5    579.0   1256.5     581.2    1273.5     596.3    1273.5     596.3    1274.5
GR    581.3    1274.5    582.5   1291.5     595.8    1291.5     595.8    1292 5     582.6    1292 5
GR    582.8    1309.5    595.4   1309.5     595.4    1310.5     582.9    1310.5     584.5      1320
GR    588.1    1327.5    594.8   1327.5     594.8    1328 5     588.6    1328.5     594.6      1342

ET        0       4.1      6.1      770      1342       770      1331
X1   16.781         0        0        0        27        27        27
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NH      3.0      .035      770      .028      1320      035      3670
ET        0       4.1      6 1      770      1340      770      1331
X1   16.782        87      770     1340         1        1         1
GR    590.4         0    589.0      170     590.4      470     590.8      670     593.4      770
GR    583.5       770    580.7      780     578.6      790     577.1      800     575.6      810
GR    575.0       820    573 3      830     572.8      840     572.3      850     570.5      860
GR    564.9       870    556.2      880     553.6      890     552.2      900     552.5      910
GR    550.6       920    550 7      930     550.1      940     552.1      950     556.3      960
GR    560.5       970    555.7      980     552.8      990     550.1     1000     548.4     1010
GR    548.1      1020    547.8     1030     548.9     1040     549.3     1050     566.8     1060
GR    567.0      1070    565.7     1080     564.1     1090     562.3     1100     561.2     1110
GR    561.7      1120    563.1     1130     564 0     1140     564.4     1150     566 3     1160
GR    567.1      1170    566 3     1180     567.2     1190     568.6     1200     571.4     1210
GR    575.2      1220    576.5     1230     577.1     1240     578.3     1250     579.4     1260
GR    580.8      1270    581.9     1280     582.4     1290     583.0     1300     582.8     1310
GR    584.5      1320    589.3     1330     594.6     1340     593.2     1370     591.2     1470
GR    589.7      1570    589.3     1670     589.3     1770     589 0     1870     589.1     1970
GR    589.7      2070    590.1     2170     589.8     2270     589.5     2370     589.2     2470
GR    589.5      2570    589.9     2670     590.3     2770     590.4     2870     589.9     2970
GR    589.5      3070    589.4     3170     589.3     3270     589 1     3370     589.3     3470
GR    589.6      3570    589.8     3670

NH      3.0      .035      402      .026       907     .035      1512
ET        0       4.1      1.4      320       912
          2645' U/S FROM U/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AP
X1   17.282        55      320      912      2644     2644      2644
GR    591.4         0    591.6       12     589.5      112     588.4      212     585.2      297
GR    581.8       320    580.9      332     578.4      382     578.4      402     577.9      412
GR    577.7       422    576.9      432     576.4      442     575.4      452     570.9      482
GR    570.6       492    570.4      502     570.4      522     568.9      532     568.4      542
GR    566.4       562    562.9      572     561.4      582     560.9      592     560.9      612
GR    559.9       632    559.9      642     559.4      652     558.4      662     558 4      672
GR    557.9       682    556.7      692     556.9      702     556.4      712     557.4      722
GR    556.9       732    556.9      772     556.4      782     556.4      792     555.8      802
GR    555.9       812    555.9      822     556.9      842     560.9      862     561.4      872
GR    565.4       882    570.9      892     577.9      907     583.7      912     586.5     1012
GR    590.6      1112    593.9     1212     595 0     1312     594 4     1412     595.0     1512

NH      3.0      .035      570      .027       980     .035      1710
ET        0       4.1        0      540       990
          175' D/S FROM D/S FACE OF C&O RAILROAD BRIDGE          SEC.  AQ
X1   17 758        54      540      990      2510     2510      2510
GR    591.2         0    590.7      100     589.9      200     588.3      300     587.9      400
GR    586.7       500    586.9      518     581.7      540     579.8      550     573.8      570
GR    569.8       580    563.8      600     562.8      610     563.8      620     566.3      630
GR    565.4       640    563.8      650     564.3      660     563 3      670     562 8      680
GR    563.8       690    565.8      730     564.8      740     562.8      750     559.3      760
GR    557.8       770    556.8      780     554.8      790     554.2      800     554 3      810
GR    554.3       820    556.3      840     555.8      850     556.8      860     556.3      870
GR    556.3       890    556.8      900     556.8      910     557 3      920     558.9      930
GR    561.8       940    565.3      950     567 8      960     573.3      970     577.3      980
GR    581.3       990    586.9     1000     588.7     1100     592 1     1300     592.3     1400
GR    592.5      1500    591.7     1578     591.4     1600     592.5     1710
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NC	.035	.035	.028	.1	.2					
ET	0	0	4 1	1126	1855					
X1	17.790	95	1125	1857	173	173	173			
GR	593.9	0	593.7	125	593.3	325	593.1	425	593.0	525
GR	593.1	625	593.3	825	594.3	925	595.8	1025	596.8	1125
GR	579.7	1127	578.8	1135	577.7	1145	577.7	1175	578.2	1182
GR	578 2	1185	578.5	1188	577.2	1195	577.2	1225	576.2	1245
GR	576.2	1245.5	575.7	1254 5	575.7	1255	577.2	1265	577.2	1285
GR	576.2	1305	575.4	1315	574.4	1325	573.7	1335	571.2	1345
GR	570.3	1354.5	570.2	1355	570.6	1363.5	570.7	1365	566.2	1375
GR	568.2	1385	571.1	1395	571.2	1405	570.7	1415	568.2	1424
GR	566.7	1435	566.7	1445	565.2	1455	570.7	1465	570.9	1468 5
GR	571.2	1475	571.0	1477.5	570.2	1485	564.2	1495	566.9	1505
GR	568 2	1515	568.1	1525	565.7	1535	562.4	1545	563.7	1555
GR	562.9	1565	555.5	1585	558.2	1595	558.0	1598.5	557.7	1605
GR	557.7	1607.5	557.7	1615	551.6	1625	551.6	1635	551.2	1645
GR	554.1	1655	557.2	1665	558.2	1675	558.2	1695	557.7	1705
GR	556.2	1715	555.6	1725	555.1	1735	555.2	1745	556.2	1755
GR	556.2	1765	559.6	1773	560.5	1775	560.5	1781	560.5	1785
GR	562.2	1795	566.8	1805	569.7	1815	576.7	1825	578.5	1835
GR	579.8	1845	580.7	1853	596.9	1857	596.9	1865	596.4	1925
GR	595.7	2025	595.2	2125	594.8	2225	594.3	2325	593.9	2425

ET	0	0	1.4							
	D/S FACE OF C&O RAILROAD BRIDGE				SEC. AR					
X1	17.791	95	1125	1857	1	1	1			
BT	26	0	593.9	0	125	593.7	0	325	593.3	0
BT	525	593.0	0	625	593.1	0	825	593 5	0	925
BT	594.3	0	1025	595.8	0	1125	596.8	589.6	1182	596.8
BT	589.6	1188	596.8	589.6	1245.5	596.8	589.7	1254.5	596.8	589 7
BT	1254.5	596.8	591.8	1354.5	596.8	591.8	1477.5	596.8	591.8	1598.5
BT	596.9	591.9	1607 5	596.9	591.9	1607.5	596.9	592.6	1773	596.9
BT	592.6	1773	596.9	592.5	1781	596.9	592.5	1857	596.9	591 7
BT	1865	596.9	0	1925	596.4	0	2025	595.7	0	
GR	593.9	0	593 7	125	593 3	325	593.0	525	593 1	625
GR	593.5	825	594.3	925	595.8	1025	596 8	1125	579.7	1125
GR	577.7	1145	577.7	1175	578.2	1182	589.6	1182	589.6	1188
GR	578.5	1188	577.2	1195	577.2	1225	576.2	1245	576 2	1245.5
GR	589.7	1245.5	589.7	1254.5	575.7	1254.5	575.7	1255	577.2	1265
GR	577.2	1285	576.2	1305	575.4	1315	574.4	1325	573.7	1335
GR	571.2	1345	570.3	1354.5	591.8	1354.5	591.8	1363.5	570.6	1363.5
GR	570.7	1365	566.2	1375	568.2	1385	571.1	1395	571 2	1405
GR	570.7	1415	568.2	1424	566.7	1435	566.7	1445	565.2	1455
GR	570.7	1465	570.9	1468.5	591.8	1468.5	591.8	1477.5	571.0	1477.5
GR	570.2	1485	564.2	1495	566.9	1505	568.2	1515	568.1	1525
GR	565.7	1535	562.4	1545	563.7	1555	562.9	1565	555.5	1585
GR	558.2	1595	558.0	1598.5	591.9	1598.5	591.9	1607 5	557.7	1607 5
GR	557 7	1615	551.6	1625	551.6	1635	551.2	1645	554.1	1655
GR	557 2	1665	558.2	1675	558.2	1695	557.7	1705	556.2	1715
GR	555.1	1735	555.2	1745	556 2	1755	556.2	1765	559.6	1773
GR	592.5	1773	592.5	1781	560.5	1781	560.5	1785	562.2	1795
GR	566.8	1805	569.7	1815	576.7	1825	578.5	1835	579.8	1845
GR	580.7	1857	596.9	1857	596.9	1865	596.4	1925	595.7	2025

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X1    17 797        0        0        0       32       32       32
X2         0        0        0        0        0        0      1.0        0        0        0

ET         0        0      4.1     1126     1855
X1    17.798       95     1125     1857        1        1        1
GR     593.9        0    593.7      125    593.3      325    593.1      425    593.0      525
GR     593.1      625    593.3      825    594.3      925    595.8     1025    596.8     1125
GR     579.7     1127    578.8     1135    577 7     1145    577.7     1175    578.2     1182
GR     578.2     1185    578.5     1188    577.2     1195    577.2     1225    576.2     1245
GR     576.2   1245.5    575.7   1254.5    575.7     1255    577.2     1265    577.2     1285
GR     576.2     1305    575.4     1315    574 4     1325    573.7     1335    571.2     1345
GR     570.3   1354.5    570.2     1355    570.6   1363.5    570.7     1365    566.2     1375
GR     568.2     1385    571.1     1395    571.2     1405    570.7     1415    568.2     1424
GR     566.7     1435    566.7     1445    565.2     1455    570.7     1465    570.9    1468.5
GR     571.2     1475    571.0   1477.5    570.2     1485    564.2     1495    566.9     1505
GR     568 2     1515    568.1     1525    565.7     1535    562 4     1545    563.7     1555
GR     562 9     1565    555.5     1585    558.2     1595    558.0   1598.5    557.7     1605
GR     557.7   1607.5    557.7     1615    551.6     1625    551.6     1635    551.2     1645
GR     554.1     1655    557.2     1665    558 2     1675    558.2     1695    557.7     1705
GR     556.2     1715    555.6     1725    555.1     1735    555.2     1745    556.2     1755
GR     556.2     1765    559.6     1773    560.5     1775    560.5     1781    560 5     1785
GR     562.2     1795    566.8     1805    569.7     1815    576.7     1825    578.5     1835
GR     579.8     1845    580.7     1853    596.9     1857    596.9     1865    596.4     1925
GR     595.7     2025    595.2     2125    594.8     2225    594.3     2325    593.9     2425

NH       3.0     .035     1345     .026     1825     .035     1999
ET         0      4.1      1.4     1275     1835
          140' D/S FROM D/S FACE OF I-675 BRIDGE        SEC.  AS
X1    18.134       60     1275     1835     1783     1783     1783
GR     588.5        0    590.4       75    590 8      102    590.2      175    590.1      275
GR     589.3      375    589.4      475    588.5      575    588.4      675    588.2      775
GR     588 6      875    589.9      975    588.2     1075    587.2     1175    588.7     1233
GR     582.0     1275    581.5     1280    581.1     1285    580.6     1295    580.6     1305
GR     580.1     1315    580.1     1325    579.6     1335    578 6     1345    577.1     1355
GR     574.6     1365    573.1     1375    572.1     1385    570.1     1395    568.1     1435
GR     568.3     1445    567 6     1455    566.6     1465    566.1     1475    566.1     1505
GR     566.1     1515    566.1     1525    565.6     1535    565.6     1555    562.1     1565
GR     562.1     1575    560.1     1595    560.4     1605    560.1     1615    560.1     1635
GR     558.6     1665    559.6     1675    559.6     1685    559.1     1695    558 1     1705
GR     558.1     1725    560.1     1745    560.1     1775    562.1     1795    574.1     1825
GR     582.0     1835    590.5     1847    591.0     1875    593.0     1975    593.3     1999

NH       3.0     .035     1130     .027     1631     .035     2120
ET         0      4.1      6.1     1100     1750     1100     1640
X1    18.160       67     1000     1640      141      141      141
GR     591.4        0    590.6      100    590.0      200    589.8      300    588.0      400
GR     587.8      500    587.5      600    587.6      700    587.6      800    587.5      900
GR     586.5     1000    584.2     1100    581.9     1129    581.7     1130    580.8     1135
GR     579.8     1140    576.8     1150    574 8     1160    574.8     1170    572.8     1180
GR     571.3     1190    570.8     1200    569 8     1210    566.8     1220    566.3     1230
GR     565.3     1240    563.3     1250    563.8     1260    565.3     1270    564.8     1280
GR     565.3     1290    565.3     1300    566.3     1310    565.8     1320    564.8     1330
GR     564.8     1340    563.8     1350    561.8     1360    560.3     1370    559.8     1380
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GR	558 8	1390	558.3	1400	558.3	1410	557 8	1420	557.8	1470
GR	556.8	1490	556.8	1500	562.8	1520	561.8	1530	562.8	1540
GR	560.8	1550	560.8	1560	562.8	1570	566 8	1580	574.8	1590
GR	577.8	1600	579.8	1610	579.8	1620	581.7	1630	582.5	1631
GR	590.6	1640	591.5	1700	592.5	1800	593.2	1900	593 6	2000
GR	592.7	2100	595.9	2120						
NH	3.0	.035	1132	.028	1631	.035	1700			
ET	0	4.1	6.1	1100	1750	1100	1631			
	D/S FACE OF I-675 BRIDGE			SEC	AT					
X1	18.161	95	1063	1700	1	1	1			
GR	591.4	0	590.6	108	619.1	108	619.1	132	590.4	132
GR	590.0	200	589.8	300	588.0	400	587.8	500	587.5	600
GR	586.6	692	619.3	692	619.3	710	587.6	710	587.5	900
GR	587 3	924	619.4	924	619.4	927	587.2	927	586.6	990
GR	619.4	990	619.4	993	586.6	993	586.5	1000	586.9	1060
GR	619.5	1060	619.5	1063	586.9	1063	584 2	1100	581.9	1129
GR	619.5	1129	619 5	1132	581.3	1132	579.8	1140	576.8	1150
GR	574.8	1160	574.8	1170	572.8	1180	571.3	1190	570.8	1200
GR	618.7	1200	618.7	1203	570 5	1203	569.8	1210	566.8	1220
GR	566.3	1230	565.3	1240	563.3	1250	563.8	1260	565.3	1270
GR	617.9	1270	617.9	1273	565.2	1273	564.8	1280	565.3	1290
GR	565.3	1300	566.3	1310	565.8	1320	564.8	1330	564.8	1340
GR	563.8	1350	561.8	1360	560.3	1370	559.8	1380	616.7	1380
GR	616.7	1383	559 5	1383	558.8	1390	558.3	1400	558.3	1410
GR	557.8	1420	557.8	1470	556.8	1490	556.8	1500	562.8	1520
GR	562.5	1523	615.1	1523	615.1	1526	562 2	1526	561.8	1530
GR	562.8	1540	560.8	1550	560.8	1560	562.8	1570	566.8	1580
GR	574.8	1590	577.8	1600	579.8	1610	579.8	1620	581.7	1630
GR	582.5	1631	613.9	1631	613.9	1697	591.5	1697	591.5	1700
ET	0	4.1	6.1	1100	1750	1100	1631			
X1	18.180	0	0	0	96	96	96			
NH	3 0	.035	1130	.027	1631	.035	2120			
ET	0	4 1	6.1	1100	1750	1100	1646			
X1	18.181	67	1000	1640	1	1	1			
GR	591.4	0	590.6	100	590.0	200	589.8	300	588.0	400
GR	587.8	500	587.5	600	587.6	700	587.6	800	587 5	900
GR	586.5	1000	584.2	1100	581.9	1129	581.7	1130	580.8	1135
GR	579.8	1140	576.8	1150	574.8	1160	574.8	1170	572.8	1180
GR	571 3	1190	570.8	1200	569.8	1210	566.8	1220	566.3	1230
GR	565.3	1240	563.3	1250	563.8	1260	565 3	1270	564.8	1280
GR	565.3	1290	565.3	1300	566.3	1310	565 8	1320	564.8	1330
GR	564.8	1340	563.8	1350	561.8	1360	560.3	1370	559.8	1380
GR	558.8	1390	558.3	1400	558.3	1410	557.8	1420	557.8	1470
GR	556.8	1490	556.8	1500	562.8	1520	561.8	1530	562.8	1540
GR	560.8	1550	560.8	1560	562.8	1570	566.8	1580	574 8	1590
GR	577.8	1600	579.8	1610	579.8	1620	581.7	1630	582.5	1631
GR	590.6	1640	591.5	1700	592.5	1800	593.2	1900	593.6	2000
GR	592 7	2100	592.9	2120						

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NC     .035      .035      .028       .1       .2
ET        0       4.1       1.4     1075     1593
X1   18.267        66      1075     1593      467      467      467
GR    589.4         0     589.1       75    589.1      175    589.4      275    589.4      375
GR    589.5       475     589.5      575    590.0      675    591.5      775    592.7      875
GR    594.3       975     597.1     1075    585.4     1075    583.9     1085    582.0     1095
GR    581.0      1105     580.6     1115    579.7     1125    578.8     1135    576.8     1145
GR    575.3      1155     572.6     1165    571.8     1175    570.5     1185    567.8     1195
GR    562.9      1205     563.8     1215    562.9     1225    561.8     1235    563.8     1245
GR    563.4      1255     562.7     1265    563.5     1275    559.8     1285    560.9     1295
GR    561.7      1305     563.6     1315    565.0     1325    564.5     1335    562.7     1345
GR    562.7      1355     561.6     1365    557.1     1375    556.8     1385    555.0     1395
GR    552.6      1405     553.9     1415    553.5     1425    553.8     1435    554.1     1445
GR    554.1      1455     554.4     1465    554.8     1475    555.7     1485    556.5     1495
GR    558.5      1505     560.0     1515    559.4     1525    564.7     1535    565.1     1545
GR    567.0      1555     568.6     1565    571.0     1575    576.2     1585    578.6     1593
GR    596.2      1593

ET        0       4.1       6.1     1075     1593     1075     1593
        D/S FACE OF JOHNSON STREET BRIDGE        SEC.  AU
X1   18.268        81      1075     1593        1        1        1
BT       31         0     589.4        0       75    589.1        0      175    589.1        0
BT      275     589.4         0      375    589.4        0      475    589.5        0      575
BT    589.5         0       675     590.0        0      775    591.5        0      875    592.7
BT        0       975     594.3        0     1075    597.1    592.5     1075    599.0    592.5
BT     1229     599.7     593.2     1395    599.7    593.2     1395    599.7    588.1     1405
BT    599.7     588.1      1415     599.7    590.0     1425    599.7    591.4     1435    599.7
BT    592.5      1445     599.7     593.1     1455    599.7    593.3     1465    599.7    593.0
BT     1475     599.7     592.2     1485    599.7    591.0     1495    599.7    589.5     1502
BT    599.7     588.1      1512     599.7    588.1     1512    599.7    593.2     1593    598.1
BT    591.5      1593     596.2         0
GR    589.4         0     589.1       75    589.1      175    589.4      275    589.4      375
GR    589.5       475     589.5      575    590.0      675    591.5      775    592.7      875
GR    594.3       975     592.5     1075    585.4     1075    583.9     1085    582.0     1095
GR    581.0      1105     580.6     1115    579.7     1125    578.8     1135    576.8     1145
GR    576.2      1149     592.5     1149    592.5     1155    575.3     1155    572.6     1165
GR    571.8      1175     570.5     1185    567.8     1195    562.9     1205    563.8     1215
GR    562.9      1225     562.5     1229    593.2     1229    593.2     1235    561.8     1235
GR    563.8      1245     563.4     1255    562.7     1265    563.5     1275    559.8     1285
GR    560.9      1295     561.7     1305    562.3     1308    593.2     1308    593.2     1314
GR    563.4      1314     563.6     1315    565.0     1325    564.5     1335    562.7     1345
GR    562.7      1355     561.6     1365    557.1     1375    556.8     1385    555.0     1395
GR    588.1      1395     588.1     1405    552.6     1405    553.9     1415    553.5     1425
GR    553.8      1435     554.1     1445    554.1     1455    554.4     1465    554.8     1475
GR    555.7      1485     556.5     1495    557.9     1502    588.1     1502    588.1     1512
GR    559.6      1512     560.0     1515    559.4     1525    564.7     1535    565.1     1545
GR    567.0      1555     568.6     1565    571.0     1575    576.2     1585    578.6     1593
GR    596.2      1593
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ET        0        4.1        6.1      1075      1593      1075      1593
X1   18.273        0          0         0        26        26        26
X2        0        0          0         0         0         0         1

ET        0        4.1        1.4      1075      1593
X1   18.274       66       1075      1593         1         1         1
GR    589.4        0      589.1        75     589.1       175     589.4       275     589.4       375
GR    589 5      475      589.5       575     590.0       675     591.5       775     592.7       875
GR    594.3      975      597.1      1075     585.4      1075     583.9      1085     582.0      1095
GR    581.0     1105      580.6      1115     579 7      1125     578.8      1135     576.8      1145
GR    575.3     1155      572.6      1165     571.8      1175     570.5      1185     567.8      1195
GR    562.9     1205      563.8      1215     562.9      1225     561.8      1235     563.8      1245
GR    563.4     1255      562.7      1265     563.5      1275     559.8      1285     560.9      1295
GR    561 7     1305      563.6      1315     565.0      1325     564.5      1335     562.7      1345
GR    562.7     1355      561.6      1365     557.1      1375     556.8      1385     555.0      1395
GR    552.6     1405      553.9      1415     553.5      1425     553.8      1435     554.1      1445
GR    554.1     1455      554.4      1465     554.8      1475     555.7      1485     556.5      1495
GR    558.5     1505      560.0      1515     559.4      1525     564.7      1535     565.1      1545
GR    567 0     1555      568.6      1565     571 0      1575     576.2      1585     578.6      1593
GR    596.2     1593

NH      2.0      035       418      .028       848
ET        0      4 1         0       418       849
        327' U/S FROM U/S FACE OF JOHNSON STREET BRIDGE        AV
X1   18.335       43       418       848       326       326       326
GR    593.9        0      593.9        18     594 2       118     595.0       218     595.8       318
GR    595.3      398      585.7       413     584.8       417     576.7       418     575.7       428
GR    567.7      468      567.2       478     565.7       488     565.7       528     565.2       538
GR    561.7      548      561.7       558     563.7       568     561.7       588     557 4       598
GR    556.7      608      556.7       618     556.2       628     556.7       638     556.7       649
GR    557.2      658      556.7       668     556 7       678     555 7       698     555.7       708
GR    555.8      718      555.7       728     556.7       738     558.7       748     559.7       758
GR    559.7      778      559.7       788     560.7       788     560.7       798     561.7       818
GR    569.7      838      571.7       848     591.2       848

NH      3.0     .035       400      .028     840.5       035      1010
ET        0      4.1       6.1       400       841       402     840.5
X1   18.43       74       400     840.5       507       507       507
GR    593.5        0      593.3       100     594.1       200     596.2       300     599 5       400
GR    585 3      403      576.4     404.9     575.9       405     571.8       410     569 4       420
GR    567.5      430      565.9       440     564.6       450     565.4       460     561.6     467.5
GR    560.4      470      561.6     472.5     560.6     475.5     561.4       480     561.6     480.5
GR    565 4      490      562.9       500     563.4       510     559.4       520     556.4       530
GR    556.4    539.5      556.4       540     558 6     544.5     560.2     547.5     561.4       550
GR    561.9    552.5      559.4       560     561.4       570     562.4       580     564.9       590
GR    564.4      600      564.9       610     569.4       620     569.4       621     569.4       630
GR    569.3      631      568.7       637     568.4       640     565.9       649     565.4       650
GR    555.9      660      556.4       670     555.4       680     555.4       690     556.4       700
GR    556.4      720      558.4       730     564.4       740     564.8       741     568.4       750
GR    568.7      753      569.3       759     569.4       760     566.7       769     566.4       770
GR    565.9      780      565.9       790     565.4       800     567.4       810     568.4       820
GR    571.4      830      575.4       837     576.2     840 5     585.0     843.5     592.5       866
GR    593.2      900      599.6       900     594.1      1000     593.9      1010
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NC      .035       .035       .028        .1         .2
ET         0        4.1        1 4       400        841
          D/S FACE OF GENESEE AVENUE BRIDGE          SEC.  AW
X1    18 431         92        400      840.5          1          1          1
GR     593.5          0      593.3        100      594.1        200      596.2        300      599.5        400
GR     584.7        400      584.7        403      582 7        403      582.7    404 9      575.9      404.9
GR     575.9        405      571.8        410      569.4        420      567.5        430      565.9        440
GR     564.6        450      565.4        460      561.6      467.5      585.3      467.5      585.3      472.5
GR     596.9      472.5      596.9      475.5      585.3      475.5      585.3      480.5      561 6      480.5
GR     565.4        490      562.9        500      563.4        510      559.4        520      556.4        530
GR     556.4      539.5      585 4      539.5      585.4      544.5      599.4      544.5      599.4      547 5
GR     585.4      547.5      585.4      552.5      561.9      552.5      559 4        560      561.4        570
GR     562.4        580      564.9        590      564.4        600      564.9        610      569.4        620
GR     569.4        621      583.6        621      583.6        631      585.6        631      585.6        637
GR     598.2        637      598.2        640      583.6        640      583.6        649      565.7        649
GR     565.4        650      555 9        660      556.4        670      555.4        680      555.4        690
GR     556.4        700      556.4        720      558.4        730      564.4        740      564.8        741
GR     583.8        741      583.8        750      596.8        750      596.8        753      585.8        753
GR     585.8        759      583.8        759      583.8        769      566.7        769      566.4        770
GR     565.9        780      565.9        790      565.4        800      567.4        810      568.4        820
GR     571.4        830      575.4        837      585.0        837      585.0      840.5      596.6      840.5
GR     596.6      843.5      585.0      843.5      592.5        866      593.2        900      599.6        900
GR     594.1       1000      593 9       1010

ET         0        4.1          0        400        841
X1    18.444          0          0          0         64         64         64

ET         0        4.1        6.1        400        841        402      840.5
X1    18.445         74        400      840.5          1          1          1
GR     593.5          0      593.3        100      594.1        200      596.2        300      599.5        400
GR     585.3        403      576.4      404 9      575.9        405      571.8        410      569.4        420
GR     567.5        430      565.9        440      564 6        450      565.4        460      561.6      467.5
GR     560.4        470      561.6      472.5      560.6      475.5      561.4        480      561.6      480.5
GR     565 4        490      562.9        500      563.4        510      559 4        520      556.4        530
GR     556.4      539.5      556.4        540      558.6      544.5      560.2      547.5      561.4        550
GR     561.9      552.5      559.4        560      561.4        570      562.4        580      564.9        590
GR     564 4        600      564.9        610      569.4        620      569.4        621      569.4        630
GR     569.3        631      568.7        637      568 4        640      565 9        649      565.4        650
GR     555.9        660      556.4        670      555.4        680      555.4        690      556.4        700
GR     556.4        720      558.4        730      564.4        740      564.8        741      568.4        750
GR     568.7        753      569.3        759      569.4        760      566.7        769      566.4        770
GR     565.9        780      565.9        790      565.4        800      567.4        810      568.4        820
GR     571.4        830      575 4        837      576.2      840.5      585.0      843.5      592.5        866
GR     593 2        900      599.6        900      594.1       1000      593 9       1010

NH       3.0       .035        280        027        699       .035       1300
ET         0        4 1        1.4        265        700
          820' U/S FROM U/S FACE OF GENESEE AVENUE BRIDGE          SEC.  AX
X1    18.598         44        265        700        817        817        817
GR     592 1          0      592.2        100      590.4        200      590.5        246      581.9        265
GR     579.7        270      577 8        280      575.5        290      574.0        300      571.0        330
GR     569.0        340      567.5        370      566.0        380      565.0        390      564.0        400
GR     564.0        410      562.5        440      562.5        470      562.0        480      562.0        490
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GR    562.1      500     562.0      510     561.5      520     561.5      530     561.0      540
GR    561.0      570     559.0      590     558.9      600     560.0      620     559.5      630
GR    559.5      630     559.5      640     560.0      650     560.0      660     563.0      670
GR    565.0      680     572.0      690     575.0      699     590.5      700     591.7      900
GR    592.4     1000     594.0     1100     595 3     1215     594.3     1300

NH      3.0      035       230     .027       630     .035      1188
ET        0      4.1         0      190       650
          360' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2    SEC. AY
X1   18.871       48       190      650      1440      1440      1440
GR    590.4        0     590.2       50     587.2       150     586.8      190     582.8      200
GR    579.9      210     577.9      220     576.9       230     573.9      240     569.9      250
GR    565.9      270     564.8      280     563.9       290     563 9      300     562.9      310
GR    562.9      320     561.9      340     561.4       350     561.4      360     560.9      370
GR    560.9      380     559.9      400     559.9       410     557.9      430     557.9      440
GR    558.9      450     559.4      460     560.1       470     559.9      480     559.9      510
GR    558.9      520     558.9      530     559.4       540     559.4      570     560.9      580
GR    562.9      590     564.9      600     567.6       610     571.4      620     578.2      630
GR    582.8      640     589.4      650     593.0       750     592.8      850     593.2      950
GR    593.9     1050     594.7     1150     595.3      1188

NH      3.0     .035       300     .028       850     .035      1330
X1   18.938       78       300      850       357       357       357
GR    593.6        0     594.5      100     595.5       200     596.4      300     588.2      300
GR    588.3      310     582.3      333     581 2    334.25     579 7   339.75     579.6      340
GR    579.1      350     578.6      360     579.0       370     578.9    375.5     578 9      380
GR    576.2    382.5     568.0      390     567.1       400     565.3      410     565.3      420
GR    564 1      430     562.4      440     561.9       450     561.6      460     561.0      470
GR    559.1      480     556.6      490     556.5       500     565.0      510     564.9      514
GR    564.7      520     564.3      520     564.3       522     562.7      530     561.4      540
GR    561.5      550     556.6      560     555.8       570     555.2      580     555.5      590
GR    554.9      600     555.0      610     555.3       615     557.2      645     557.5      650
GR    557 4      660     556.9      670     557.3       680     557.5      690     557.9      700
GR    558.8      710     561.4      720     562.1       730     567.8      739     568.4      740
GR    571.2      747     572.4      750     575.0       760     575.6      770     576.2    776 5
GR    576 6      780     577.5    783.5     579.3       790     579.8      800     581.1      810
GR    583.5   814.25     586.6   819.75     586.8       820     588.0      830     590.6      840
GR    591.2      850     596.8      850     596.8       900     596.9     1000     596 6     1100
GR    596.6     1200     596.5     1300     596.3      1330

NC     .035      035       028       .1        .2
          D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2   SEC.  AZ
X1   18 939       87       300      850         1         1         1
BT       25        0     593.6        0       100     594.5         0      200     595.5         0
BT      300    596.4     591.6    334.2     596.7     591.9     339.7    596.7     591.9     375.5
BT    597.1    592.3     382.5    597.1     592.3       514     597.3    592.5       522     597.3
BT    592.5      615     597.3    592.5       645     597.3     592.5      739     597.2     592.4
BT      747    597.2     592 4    776.5     597.2     592.4     783.5    597.2     592.4     814.2
BT    597.1    592.3     819.7    597.1     592.3       850     596.8    592 0       900     596.8
BT        0     1000     596.9        0      1100     596.6         0     1200     596.6         0
BT     1300    596.5         0     1330     596.3         0
GR    593.6        0     594.5      100     595.5       200     596.4      300     588.2      300
GR    588.3      310     582 3      333     581.2     334.2     591 9    334.2     591.9     339.7
GR    579.7    339.7     579 6      340     579.1       350     578.6      360     579.0      370
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GR    578.9     375.5     592.3     375.5     592.3     382.5     576.2     382.5     568.0       390
GR    567.1       400     565.3       410     565.3       420     564.1       430     562.4       440
GR    561.9       450     561.6       460     561.0       470     559.1       480     556.6       490
GR    556.5       500     565.0       510     564.9       514     592.5       514     592.5       522
GR    564.3       522     562.7       530     561.4       540     561.5       550     556.6       560
GR    555.8       570     555.2       580     555.5       590     554.9       600     555.0       610
GR    555.3       615     592.5       615     592.5       645     557.2       645     557.5       650
GR    557.4       660     556.9       670     557.3       680     557.5       690     557.9       700
GR    558.8       710     561.4       720     562.1       730     567.8       739     592.4       739
GR    592.4       747     571.2       747     572.4       750     575.0       760     575.6       770
GR    576.2     776.5     592.4     776.5     592.4     783.5     577.5     783.5     579.3       790
GR    579.8       800     581.1       810     583.5     814.2     592.3     814.2     592.3     819.7
GR    586.6     819.7     586.8       820     588.0       830     590.6       840     591.2       850
GR    596.8       850     596.8       900     596.9      1000     596.6      1100     596.6      1200
GR    596.5      1300     596.3      1330

X1   18.944         0         0         0        24        24        24
X2        0         0         0         0         0         0         1         0         0         0

X1   18.945        78       300       850         1         1         1
X3       10
GR    593.6         0     594.5       100     595.5       200     596.4       300     588.2       300
GR    588.3       310     582.3       333     581.2    334.25     579.7    339.75     579.6       340
GR    579.1       350     578.6       360     579.0       370     578.9     375.5     578.9       380
GR    576.2     382.5     568.0       390     567.1       400     565.3       410     565.3       420
GR    564.1       430     562.4       440     561.9       450     561.6       460     561.0       470
GR    559.1       480     556.6       490     556.5       500     565.0       510     564.9       514
GR    564.7       520     564.3       520     564.3       522     562.7       530     561.4       540
GR    561.5       550     556.6       560     555.8       570     555.2       580     555.5       590
GR    554.9       600     555.0       610     555.3       615     557.2       645     557.5       650
GR    557.4       660     556.9       670     557.3       680     557.5       690     557.9       700
GR    558.8       710     561.4       720     562.1       730     567.8       739     568.4       740
GR    571.2       747     572.4       750     575.0       760     575.6       770     576.2     776.5
GR    576.6       780     577.5     783.5     579.3       790     579.8       800     581.1       810
GR    583.5    814.25     586.6    819.75     586.8       820     588.0       830     590.6       840
GR    591.2       850     596.8       850     596.8       900     596.9      1000     596.6      1100
GR    596.6      1200     596.5      1300     596.3      1330

NH      3.0      .035       410      .027       880      .035      1233
ET        0       4.1       1.4       390       900
          165' D/S FROM D/S FACE OF HOLLAND STREET BRIDGE        SEC  BA
X1   19.432        54       390       900      2577      2577      2577
GR    590.8         0     591.4       100     591.8       200     591.2       300     590.0       390
GR    582.8       400     577.9       410     575.9       430     575.9       440     572.9       450
GR    570.4       460     570.9       470     564.9       480     559.9       490     564.9       540
GR    565.4       550     565.4       560     564.4       580     564.9       590     564.9       600
GR    564.4       610     564.4       640     564.9       650     564.9       660     565.4       670
GR    565.4       680     565.9       690     565.9       700     566.4       710     565.9       720
GR    566.0       730     565.9       740     565.9       750     566.4       760     566.4       770
GR    566.9       780     567.9       790     567.4       800     567.9       810     568.4       820
GR    571.9       830     572.9       840     573.4       850     574.4       860     575.9       870
GR    578.8       880     580.9       890     582.8       895     586.1       900     587.5      1000
GR    589.8      1100     590.6      1157     597.1      1200     596.9      1233
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NH      3.0       .035       730       .028       1285       .035       1975
ET        0        4.1       6.1       730       1333       730        1305
X1   19.462         81       730      1333        165       165         165
GR    601.8          0     597.1        45      597.7       125       594.5        225       592.4        325
GR    593.7        425     597.2       525      590.2       625       589.5        691       589.4        695
GR    589.1        727     582.8       730      577.9       745       575.9        755       573.5        761
GR    571.9        765     568.9       775      566.9       785       565.9        795       566.4        805
GR    567.4        815     566.9       825      566.9       835       566.9        845       566.4        855
GR    565.9        865     564.4       875      563.5       881       562.9        885       563 9        895
GR    564.9        905     565.9       915      565.9       925       565.9        935       565.4        945
GR    565.9        955     565.9       965      564.9       975       564.9        985       566.4        995
GR    563.1       1001     560 9      1005      565.9      1015       565.9       1025       565.9       1035
GR    566.4       1045     564.9      1055      565.9      1065       565 4       1075       565.9       1085
GR    565.9       1095     565.9      1105      562.9      1115       562.9       1121       562.9       1125
GR    563.9       1135     566.9      1145      567.4      1155       567.9       1165       567.9       1175
GR    567.9       1185     567.4      1205      569.4      1215       572.9       1225       573.9       1235
GR    575.1       1241     575.9      1245      578.9      1255       582.1       1265       585.5       1279
GR    587.5       1285     595.5      1323      595.5      1327       595 5       1333       603.8       1333
GR    601.4       1425     599.0      1525      597.0      1625       595.3       1725       594.4       1825
GR    594.1       1975

NC     .035        .035       028        .1         .2
ET        0        4.1       6.1       730       1333       730        1305
          D/S FACE OF HOLLAND STREET BRIDGE          SEC.  BB
X1   19.463         94       730      1333          1          1          1
BT       16        625     601.1     596 6        691     603.3      598.8        691       603.3       593 8
BT      695      603.5     594.0       761      605.8     596.3        765      605.9       596 4        881
BT    608.3      598.8       885     608.3      598.8      1001      608.0      598.5        1005      607.9
BT    598.4       1121     606.4     596.9       1125     606.4      596.9       1241       604.9      595.4
BT     1245      604.9     595.4      1245      604.9     600.4       1333      603.8       599.3          0
GR    601.8          0     597.1        45      597.7       125      594.5        225       592 4        325
GR    593.7        425     597.2       525      601.1       625      590.2        625       589.5        691
GR    593.8        691     594.0       695      589.4       695      589.1        725       582.8        730
GR    577.9        745     575.9       755      573.5       761      596.3        761       596.4        765
GR    571.9        765     568.9       775      566.9       785      565.9        795       566.4        805
GR    567.4        815     566.9       825      566.9       835      566.9        845       566.4        855
GR    565.9        865     564.4       875      563.5       881      598.8        881       598.8        885
GR    562.9        885     563.9       895      564.9       905      565.9        915       565.9        925
GR    565.9        935     565.4       945      565.9       955      565.9        965       564.9        975
GR    564.9        985     566.4       995      563.1      1001      598.5       1001       598.4       1005
GR    560.9       1005     565.9      1015      565.9      1025      565.9       1035       566.4       1045
GR    564.9       1055     565 9      1065      565 4      1075      565.9       1085       565.9       1095
GR    565.9       1105     562.9      1115      562.9      1121      596.9       1121       596.9       1125
GR    562.9       1125     563.9      1135      566.9      1145      567.4       1155       567 9       1165
GR    567.9       1175     567 9      1185      567.4      1205      569.4       1215       572.9       1225
GR    573.9       1235     575.1      1241      595.4      1241      595.4       1245       575.9       1245
GR    578 9       1255     582.1      1265      585.5      1279      587.5       1285       595 5       1323
GR    595.5       1327     595.5      1333      603.8      1333      601.4       1425       599.0       1525
GR    597.0       1625     595.3      1725      594.4      1825      594.1       1975
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ET	0	4.1	6.1	730	1333	730	1305			
X1	19.476	0	0	0	68	68	68			
X2	0	0	0	0	0	0	1	0	0	0
ET	0	4.1	6.1	730	1333	730	1305			
X1	19.477	81	730	1333	1	1	1			
GR	601.8	0	597.1	45	597.7	125	594.5	225	592.4	325
GR	593.7	425	597.2	525	590.2	625	589.5	691	589.4	695
GR	589.1	727	582.8	730	577.9	745	575.9	755	573.5	761
GR	571.9	765	568.9	775	566 9	785	565.9	795	566.4	805
GR	567.4	815	566.9	825	566.9	835	566.9	845	566.4	855
GR	565 9	865	564.4	875	563.5	881	562.9	885	563 9	895
GR	564.9	905	565 9	915	565.9	925	565.9	935	565 4	945
GR	565.9	955	565.9	965	564.9	975	564.9	985	566.4	995
GR	563.1	1001	560.9	1005	565.9	1015	565.9	1025	565 9	1035
GR	566.4	1045	564.9	1055	565.9	1065	565.4	1075	565.9	1085
GR	565.9	1095	565.9	1105	562.9	1115	562.9	1121	562.9	1125
GR	563.9	1135	566 9	1145	567.4	1155	567.9	1165	567 9	1175
GR	567.9	1185	567.4	1205	569.4	1215	572.9	1225	573.9	1235
GR	575.1	1241	575.9	1245	578.9	1255	582.1	1265	585.5	1279
GR	587.5	1285	595.5	1323	595.5	1327	595.5	1333	603.8	1333
GR	601.4	1425	599.0	1525	597.0	1625	595.3	1725	594.4	1825
GR	594.1	1975								
NH	3 0	.035	448	.026	895	.035	2635			
ET	0	4.1	6.1	386	910	398	910			
X1	20.115	95	386.5	910	3379	3379	3379			
GR	604.2	0	603.4	35	608.8	135	598.5	135	596 5	172.5
GR	596.3	175.5	594 3	212.5	594.2	215.5	593.1	235	593.1	252.5
GR	593.0	255.5	593.0	307.5	592.9	310.5	592.9	335	592.9	343.5
GR	592 9	346.5	593.0	383.5	593.0	385	592.9	386.5	590.7	423.5
GR	590.7	425	590.3	426.5	584.6	447	577.5	448	576.5	455
GR	575 3	463	575.0	465	567.0	475	562.0	485	561.8	487
GR	559.0	545	558.5	555	558.0	565	558.0	575	558.5	585
GR	557.5	595	561.9	603	563.0	605	561.0	615	565.0	625
GR	561.8	629	557.0	635	557.0	645	558 5	655	560.0	665
GR	561.5	675	562.0	685	563.0	695	563.0	705	565.2	710 5
GR	566.4	713.5	567 0	715	565.0	725	565.5	735	565.5	755
GR	566.0	765	566.0	785	566.5	795	566.5	795 5	566.7	798.5
GR	567 0	805	568.0	815	570.0	825	570.0	845	572.0	855
GR	574.5	865	578.0	875	579.2	878.5	580.1	881.5	581.3	885
GR	582.9	895	591.7	910	591.5	921.5	591.5	924.5	591.1	955
GR	593.1	961 5	594.0	964.5	604.0	997	604.3	1001	606.7	1001
GR	604.3	1035	600.7	1135	597 9	1235	594.7	1335	593.7	1435
GR	594.2	1535	594.2	1635	594.0	1735	593.7	1835	593.4	1935
GR	593.0	2035	592.8	2135	593.1	2235	593.9	2435	594.9	2635
NC	.035	.035	.028	.1	2					
ET	0	4.1	6.1	386	910	400	910			

D/S FACE OF COURT STREET BRIDGE SEC. BC

X1	20.116	94	386.5	910	1	1	1			
GR	604.2	0	603.4	35	608.8	135	598.5	135	596.5	172.5
GR	609.8	172.5	609.9	175.5	596.3	175.5	594.3	212.5	611.0	212.5
GR	611.0	215.5	594.2	215.5	593 1	235	593.1	252.5	612.1	252.5
GR	612.2	255.5	593.0	255.5	593.0	307.5	613.6	307.5	613.7	310.5
GR	592 9	310.5	592.9	343.5	614.6	343.5	614.7	346.5	592.9	346 5
GR	593.0	383.5	615.7	383.5	615.8	386.5	592.9	386.5	590 7	423.5
GR	616.8	423 5	616.9	426.5	590.3	426.5	584 6	448.0	577.5	448
GR	575.3	463	617.9	463	618.6	487	561.8	487	561.0	495
GR	557.5	595	561.9	603	618.5	603	617.7	629	561.8	629
GR	557.0	635	557.0	645	561.5	675	563.0	695	560.0	705
GR	565.2	710 5	615.3	710.5	615.2	713.5	566 4	713.5	567.0	715
GR	565.0	725	566.0	785	566.5	795	566.5	795 5	612.7	795.5
GR	612.7	798.5	566.7	798.5	567.0	805	568.0	815	570.0	825
GR	570.0	845	574.5	865	578.0	875	579.2	878 5	610.3	878.5
GR	610.2	881.5	580.1	881.5	581.3	885	582 9	895	591.7	910
GR	591.5	921.5	609.0	921.5	609 0	924.5	591 5	924.5	591.1	955
GR	593.1	961.5	607.9	961.5	607.8	964.5	594.0	964.5	604.3	1001
GR	606.7	1001	604.3	1035	600.7	1135	594.7	1335	593.7	1435
GR	594.2	1635	593 0	2035	592.8	2135	594.9	2635		
ET	0	4.1	6.1	386	910	400	910			
X1	20.128	0	0	0	60	60	60			
ET	0	4.1	6.1	386	910	397	910			
X1	20.129	95	386 5	910	1	1	1			
GR	604.2	0	603.4	35	608.8	135	598.5	135	596.5	172.5
GR	596.3	175.5	594.3	212.5	594.2	215.5	593.1	235	593.1	252.5
GR	593.0	255.5	593.0	307.5	592 9	310.5	592.9	335	592.9	343.5
GR	592.9	346.5	593.0	383.5	593.0	385	592.9	386.5	590.7	423.5
GR	590.7	425	590.3	426.5	584.6	447	577.5	448	576.5	455
GR	575.3	463	575.0	465	567.0	475	562.0	485	561 8	487
GR	559.0	545	558.5	555	558.0	565	558.0	575	558.5	585
GR	557.5	595	561.9	603	563 0	605	561.0	615	565.0	625
GR	561.8	629	557.0	635	557.0	645	558.5	655	560.0	665
GR	561.5	675	562.0	685	563.0	695	563.0	705	565 2	710.5
GR	566.4	713.5	567.0	715	565 0	725	565.5	735	565 5	755
GR	566.0	765	566.0	785	566.5	795	566 5	795.5	566.7	798.5
GR	567.0	805	568 0	815	570.0	825	570.0	845	572.0	855
GR	574 5	865	578.0	875	579.2	878.5	580.1	881.5	581.3	885
GR	582.9	895	591.7	910	591.5	921 5	591.5	924.5	591.1	955
GR	593.1	961.5	594.0	964.5	604.0	997	604.3	1001	606 7	1001
GR	604.3	1035	600.7	1135	597.9	1235	594 7	1335	593.7	1435
GR	594.2	1535	594.2	1635	594.0	1735	593.7	1835	593.4	1935
GR	593.0	2035	592.8	2135	593 1	2235	593.9	2435	594.9	2635
NH	3.0	.035	170	.027	809	.035	1275			
ET	0	4.1	4.1	120	810					

840' U/S FROM U/S FACE OF COURT STREET BRIDGE SEC. BD

X1	20.287	53	120	810	839	839	839			
GR	592.5	0	592.7	10	590.0	120	582.7	140	578.7	150
GR	578.9	160	577.9	170	577.9	180	576.9	190	574.9	200
GR	571.9	210	566 9	220	565.9	230	566.9	250	566.9	300
GR	567.4	310	567.4	320	567 9	330	567.4	340	567.9	350
GR	567.9	380	568.9	390	568.9	400	568.4	410	568.4	420
GR	568.9	430	568.4	440	568.4	470	568.9	480	568.9	530
GR	569.4	540	569.4	560	569.4	570	569.9	570	569.9	580
GR	569.9	600	570.4	610	570.4	620	570.9	630	570.9	710
GR	570.4	720	573.4	750	573.9	760	573.9	770	574.4	780
GR	574.4	800	574 9	809	588.7	810	589.5	910	592.0	1010
GR	592.4	1110	592.3	1210	591.6	1275				
NH	3.0	.035	735	.028	1360	035	3855			
X1	20.513	95	735	1360	1199	1199	1199			
X3	10	0	0	0	0	0	0	601.0	601.0	0
GR	595 7	0	595.2	35	595.5	135	595.0	235	594.2	335
GR	593.8	435	595 5	535	600.8	735	593.4	735	593.4	735
GR	582.8	759	576.9	765	575.8	775	575.9	785	574.9	795
GR	574.3	797.5	573.6	800.5	572.5	805	571.0	815	567.1	825
GR	567.5	835	567.4	845	567.7	855	566.9	865	566.2	868.5
GR	565.5	871 5	564.8	875	565.0	885	565.7	895	565.9	905
GR	566.0	915	566.7	935	565.6	940.5	565.0	943.5	564.7	945
GR	564.7	955	565.8	965	566.5	975	566.8	995	566.6	1005
GR	565.9	1011.5	565 6	1014.5	565.5	1015	564.6	1025	565.7	1035
GR	566.5	1045	567.0	1055	566.5	1065	567.3	1075	566.5	1082.5
GR	566.3	1085	566.3	1085.5	566.2	1095	566.1	1105	566.4	1115
GR	567.9	1125	568.8	1135	568.7	1145	567.9	1153.5	567.7	1155
GR	567.6	1156.5	567.3	1165	566.7	1175	567.1	1185	567.5	1205
GR	568.1	1215	569.5	1225	569.5	1225.5	569 5	1228.5	569 6	1235
GR	570.0	1245	571.3	1255	574.0	1265	575.2	1275	575.8	1285
GR	576.6	1295	576.9	1296.5	577.4	1299.5	578.5	1305	581.0	1325
GR	582.8	1333	593.5	1358	593.5	1360	600.8	1360	600.1	1435
GR	599.4	1535	594.3	1835	594.1	1935	591 4	2135	587 6	2435
GR	586.6	2535	589.0	3235	591.1	3535	593.5	3735	594.2	3855
NC	.035	.035	.028	.1	.2					

D/S FACE OF RUST ROAD BRIDGE SEC. BE

X1	20.514	95	735	1360	1	1	1			
X3	10	0	0	0	0	0	0	601 0	601 0	0
GR	595.7	0	595.2	35	595.5	135	595.0	235	594.2	335
GR	593.8	435	595.5	535	600.8	735	593.4	735	593.4	737
GR	582.8	759	576.9	765	575.8	775	575.9	785	574.9	795
GR	574.3	797.5	600.8	797.5	600.8	800.5	573.6	800.5	572.5	805
GR	571.0	815	567.1	825	567.4	845	567.7	855	566.9	865
GR	566.2	868.5	600.8	868.5	600.8	871.5	565.5	871.5	564.8	875
GR	565.7	895	566.0	915	566.7	935	565.6	940.5	600.8	940.5
GR	600.8	943.5	565.0	943.5	564.7	945	564.7	955	566.5	975
GR	566.8	995	566.6	1005	565.9	1011.5	600.8	1011.5	600.8	1014.5
GR	565.6	1014 5	564.6	1025	566.5	1045	567 0	1055	566 5	1065
GR	567.3	1075	566.5	1082.5	600.8	1082 5	600.8	1085.5	566.3	1085.5
GR	566.1	1105	566.4	1115	568.8	1135	567.9	1153.5	600.8	1153.5
GR	600.8	1156.5	567.6	1156.5	566.7	1175	567.1	1185	567.5	1205

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GR     568.1      1215      569.5      1225      569.5      1225.5      600.8      1225.5      600.8      1228 5
GR     569.5    1228 5      569.6      1235      570.0        1245      571.3        1255      574.0        1265
GR     575.2      1275      576.6      1295      576.9      1296.5      600.8      1296.5      600.8      1299.5
GR     577.4    1299.5      581.0      1325      582.8        1333      593.5        1360      600.8        1360
GR     600 1      1435      599.4      1535      594.5        1835      594.1        1935      592.7        2035
GR     586.4      2535      589.0      3235      591.1        3535      593.5        3735      594.2        3855

X1   20 527         0         0         0        70          70         70
X3       10         0         0         0         0           0         0       601.0       601.0           0

X1   20 528        95       735      1360         1           1          1
X3       10         0         0         0         0           0         0       601.0       601.0           0
GR     595.7         0     595.2        35     595.5         135     595.0         235     594.2         335
GR     593.8       435     595.5       535     600.8         735     593.4         735     593.4         735
GR     582.8       759     576.9       765     575.8         775     575.9         785     574.9         795
GR     574.3     797.5     573.6     800.5     572.5         805     571.0         815     567.1         825
GR     567.5       835     567.4       845     567.7         855     566.9         865     566.2       868.5
GR     565.5     871.5     564.8       875     565.0         885     565.7         895     565.9         905
GR     566.0       915     566.7       935     565.6       940.5     565.0       943.5     564.7         945
GR     564.7       955     565.8       965     566.5         975     566.8         995     566.6        1005
GR     565 9    1011.5     565.6    1014.5     565.5        1015     564.6        1025     565.7        1035
GR     566.5      1045     567.0      1055     566.5        1065     567.3        1075     566.5      1082.5
GR     566.3      1085     566.3    1085.5     566.2        1095     566.1        1105     566.4        1115
GR     567.9      1125     568.8      1135     568.7        1145     567.9      1153.5     567.7        1155
GR     567.6    1156.5     567.3      1165     566.7        1175     567.1        1185     567.5        1205
GR     568.1      1215     569.5      1225     569.5      1225.5     569.5      1228.5     569.6        1235
GR     570.0      1245     571.3      1255     574.0        1265     575.2        1275     575.8        1285
GR     576.6      1295     576.9    1296.5     577.4      1299.5     578.5        1305     581.0        1325
GR     582.8      1333     593.5      1358     593.5        1360     600.8        1360     600.1        1435
GR     599.4      1535     594 3      1835     594.1        1935     591.4        2135     587.6        2435
GR     586.6      2535     589.0      3235     591.1        3535     593.5        3735     594 2        3855

NH       3.0      .035      1628      .027      2180        .035      2910
ET         0       4.1       6.1      1615      2220        1615      2213
          180' D/S FROM D/S FACE OF CENTER STREET BRIDGE    SEC   BF
X1    21.059        67      1615      2220      2804        2804      2804
GR     595.8         0     595.5        65     593.7         165     593.2         265     593.6         365
GR     593.8       465     593.9       565     594.4         665     594.1         765     593.7         865
GR     593.1       965     593.4      1065     593.6        1165     593.0        1265     590.8        1365
GR     587.6      1465     589.0      1565     593.3        1615     581.8        1628     579.9        1635
GR     575.9      1655     571.9      1665     567.9        1675     565.9        1685     565.9        1765
GR     565.4      1775     565.4      1785     565.9        1795     565.9        1845     565.3        1855
GR     564.9      1865     565.4      1875     564.9        1885     565.4        1895     565.4        1915
GR     565.9      1925     565 9      1955     566.4        1965     565.9        1975     566.9        1985
GR     567.4      1995     567.8      2005     568.4        2015     568.4        2025     567.9        2035
GR     568 2      2045     568 4      2055     568.4        2075     568.9        2085     569.9        2095
GR     571.4      2105     576.4      2125     577.9        2135     577.9        2145     579.4        2155
GR     581 4      2160     586 6      2180     594.1        2220     594.5        2265     598.1        2300
GR     591.9      2365     591 6      2465     592.1        2565     592.9        2665     594.0        2765
GR     595.3      2865     595.3      2910
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NH      3.0      .035    1278.5      .025      1835      .035      2870
X1   21.092        93      1165      1960       179       179       179
X3        10         0         0         0         0         0         0     602.0     608.0         0
GR     594.3         0     594.7        65     594.2       165     594.0       265     593.7       365
GR     592.5       465     593.5       565     592.9       665     592.1       865     594.2       965
GR     598.8      1065     601.2      1165     592.0      1165     583.6      1195     582.4      1275
GR     582.1    1275.5     576.9      1277     576.9    1278.5     576.7      1285     577.0      1295
GR     574.6      1305     571.2      1315     569.2      1325     568.6      1335     567.5      1345
GR     568.8      1355     568.3      1365     568.9      1375     567.8      1385     567.0      1395
GR     566.5    1403.5     566.4      1405     566.6    1406.5     568.0      1415     568.1      1425
GR     567.7      1435     567.8      1445     567.0      1455     566.7      1465     567.1      1485
GR     567.4      1495     567.3      1505     567.7      1515     567.0      1525     567.1    1532.5
GR     567.1      1535     567.1    1535.5     566.7      1545     566.9      1555     567.0      1565
GR     568.0      1625     567.7      1635     567.9      1645     567.1      1655     566.5    1660.5
GR     566.2    1663.5     566.0      1665     566.6      1675     566.6      1685     565.6      1705
GR     564.9      1715     563.7      1725     564.2      1735     565.7      1745     570.1      1765
GR     572.8      1775     573.1      1785     573.9    1789.5     574.4    1792.5     574.8      1795
GR     577.0      1805     577.2      1815     577.3      1825     577.8      1835     579.5      1845
GR     581.8      1855     585.3      1870     586.1    1881.5     586.3    1884.5     587.1      1895
GR     587.9      1930     597.3      1960     607.6      1960     607.6      1965     605.8      2065
GR     603.0      2165     601.6      2265     601.5      2365     599.0      2465     593.7      2565
GR     593.3      2665     593.4      2765     593.6      2870

NC       035      .035      .028        .1        .2
         D/S FACE OF CENTER STREET BRIDGE        SEC  BG
X1   21.093        94      1165      1960         1         1         1
X3        10         0         0         0         0         0         0     602.0     608.0         0
GR     594.3         0     594.7        65     593.5       465     593.5       565     592.1       365
GR     594.2       965     598.8      1065     601.2      1165     592.0      1165     583.6      1195
GR     582.4      1275     582.1    1275.5     602.6    1275.5     602.6    1278.5     576.9    1278.5
GR     576.7      1285     577.0      1295     574.6      1305     571.2      1315     569.2      1325
GR     568.6      1335     567.5      1345     568.8      1355     568.3      1365     568.9      1375
GR     567.8      1385     567.0      1395     566.5    1403.5     603.6    1403.5     603.6    1406.5
GR     566.6    1406.5     568.0      1415     568.1      1425     567.7      1435     567.8      1445
GR     567.0      1455     566.7      1465     567.1      1485     567.4      1495     567.3      1505
GR     567.7      1515     567.0      1525     567.1    1532.5     604.7    1532.5     604.7    1535.5
GR     567.1    1535.5     566.7      1545     567.3      1575     566.8      1585     567.9      1645
GR     567.1      1655     566.5    1660.5     605.8    1660.5     605.8    1663.5     566.2    1663.5
GR     566.0      1665     566.6      1675     566.6      1685     565.6      1705     564.9      1715
GR     563.7      1725     564.2      1735     565.7      1745     570.1      1765     572.8      1775
GR     573.1      1785     573.9    1789.5     606.9    1789.5     606.9    1792.5     574.4    1792.5
GR     574.8      1795     577.0      1805     577.3      1825     577.8      1835     579.5      1845
GR     581.8      1855     585.3      1870     586.1    1881.5     607.5    1881.5     607.5    1884.5
GR     586.3    1884.5     587.1      1895     587.9      1930     597.3      1960     607.6      1960
GR     607.6      1965     605.8      2065     603.0      2165     601.6      2265     601.5      2365
GR     599.0      2465     593.7      2565     593.3      2665     593.6      2870

X1   21.108         0         0         0        80        80        80
X3        10         0         0         0         0         0         0     602.0     608.0         0
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X1   21 109        93      1165      1960         1         1         1
X3       10         0         0         0         0         0         0     602.0     608.0         0
GR    594.3         0     594.7        65     594.2       165     594.0       265     593.7       365
GR    592.5       465     593.5       565     592.9       665     592.1       865     594.2       965
GR    598.8      1065     601.2      1165     592.0      1165     583.6      1195     582.4      1275
GR    582.1    1275.5     576.9      1277     576.9    1278.5     576.7      1285     577.0      1295
GR    574.6      1305     571.2      1315     569.2      1325     568.6      1335     567.5      1345
GR    568.8      1355     568 3      1365     568.9      1375     567.8      1385     567.0      1395
GR    566.5    1403.5     566 4      1405     566.6    1406.5     568.0      1415     568.1      1425
GR    567.7      1435     567.8      1445     567.0      1455     566.7      1465     567.1      1485
GR    567.4      1495     567 3      1505     567.7      1515     567.0      1525     567.1     1532 5
GR    567 1      1535     567 1    1535.5     566.7      1545     566.9      1555     567.0      1565
GR    568.0      1625     567.7      1635     567.9      1645     567.1      1655     566.5    1660.5
GR    566.2    1663.5     566.0      1665     566.6      1675     566.6      1685     565 6      1705
GR    564 9      1715     563.7      1725     564.2      1735     565.7      1745     570.1      1765
GR    572 8      1775     573 1      1785     573.9    1789.5     574.4    1792.5     574.8      1795
GR    577.0      1805     577.2      1815     577.3      1825     577.8      1835     579.5      1845
GR    581.8      1855     585.3      1870     586.1    1881.5     586.3    1884 5     587.1      1895
GR    587.9      1930     597.3      1960     607.6      1960     607.6      1965     605.8      2065
GR    603.0      2165     601.6      2265     601.5      2365     599.0      2465     593.7      2565
GR    593.3      2665     593.4      2765     593.6      2870

NC     .030      .030       028        .1        .2
ET        0       4.1       6.1       530      2300       800      2300
        3240' U/S FROM U/S FACE OF CENTER STREET BRIDGE   SEC.  BH
X1   21.722        56      1781      2478      3239      3239      3239
GR    577.0         0     581.6        20     582.0        38     581.7       238     581.9       438
GR    581.7       638     582.4       838     581.3      1038     582.9      1238     584.1      1438
GR    584.6      1638     585.2      1738     589.2      1751     589 0      1781     582.2      1797
GR    577.3      1808     576.3      1818     574.3      1828     571.3      1838     568.8      1848
GR    567.3      1858     566.8      1868     566.8      1898     566.3      1908     566.3      1918
GR    566.8      1928     566.8      1968     567.3      1978     567.3      2008     566.8      2018
GR    566.8      2038     566 3      2048     566.3      2068     565.3      2088     565.3      2118
GR    566.3      2128     567 8      2158     570.8      2178     573 3      2188     575.3      2208
GR    575.8      2218     578 3      2228     579.3      2238     582.6      2239     585.7      2338
GR    586 7      2438     587.7      2478     593.0      2503     593.1      2553     586.4      2598
GR    587.9      2638     589 6      2663     589.5      2738     589.4      2838     591.3      2938
GR    591.0      2978

NC     .030      .030      .028        .1        .2
ET        0       4 1       6.1         0      3200      1200      3100
        INTERSECTION OF TITTABAWASSEE RIVER AND SAGINAW RIVER   SEC.BI
X1   22.186        69      1815      2387      2450      2450      2450
GR    577.3         0     581.4        15     582.0       187     583.2       387     583.1       587
GR    582.5       787     582.8       987     584.1      1187     584.3      1387     585 7      1587
GR    585.6      1787     589.9      1795     591 4      1815     582.2      1823     578.3      1837
GR    576.3      1847     574.8      1857     574.3      1867     574.3      1877     573.3      1897
GR    573.3      1907     572.3      1917     572.3      1927     570.3      1947     569.3      1967
GR    568.3      1977     567.3      1997     566.3      2007     564.3      2047     564.3      2057
GR    563.3      2077     563.3      2107     563.8      2117     563.8      2127     565.3      2157
GR    565.3      2167     567.3      2207     568.3      2217     570.3      2257     570.3      2277
GR    571 3      2287     571.8      2297     573.3      2307     575.3      2327     575.8      2337
GR    576.8      2347     578.3      2357     578.8      2367     582.2      2377     585.4      2387
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GR	585.5	2487	584.5	2587	585.7	2787	585.9	2987	586.1	3187
GR	586.2	3387	586.3	3587	586.2	3787	586 4	3987	586 2	4187
GR	586.0	4387	586 0	4587	585.9	4787	585.8	4987	586.7	5187
GR	587.0	5387	586.9	5587	588.0	5787	589 6	5922		

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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 ELFV
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*PROF 1


CCHV=     0.100 CEHV=     0 200
1490 NH CARD USED
*SECNO 0.023
1530 MANNINGS N VALUES FOR CHANNEL COMPOSITED
         120' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  A
     0.023     26.44     579.34      0.00     579.34     579.58      0 24       0.00       0.00     582.10
   66100.0       0.0   66100.0       0.0        0.0   16696.0       0.0        0 0        0.0     584.70
      0.00      0 00      3.96      0 00      0.000     0 026     0.000      0.000     552.90      98.71
  0.000157      120.      120.      120.          0         0         0       0.00    1297.10    1395.81


1490 NH CARD USED
*SECNO 0.335
         1770' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  B
     0 335     28.75     579.55      0 00       0 00     579.86      0.31       0 27       0.01     582.00
   66100.0       0.0   66100.0       0.0        0.0   14834.2       0.0      597 2       43.8     585.10
      0.10      0.00      4.46      0.00      0.000     0 025     0.000      0.000     550.80     384.93
  0.000165     1650.     1650.     1650          2         0         0       0 00    1015.82    1400.75


1490 NH CARD USED
*SECNO 1.189
         6280' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  C
     1.189     27 15     580.45      0.00       0.00     580 71      0.27       0.85       0.00     582 50
   66100.0       0.0   66100.0       0.0        0.0   15931.6       0.0     2189.8      175.1     582.30
      0.40      0.00      4.15      0.00      0.000     0.025     0.000      0 000     553.30     317.07
  0.000217     4510.     4510.     4510          2         0         0       0.00    1520.24    1837.31


1490 NH CARD USED
*SECNO 1.761
         9300' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  D
     1.761     34.59     580.89      0.00       0.00     581.30      0.41       0.56       0.03     584.80
   66100.0       0.0   66100.0       0.0        0.0   12842.0       0.0     3187.3      251.6     585.60
      0 57      0.00      5.15      0.00      0 000     0.025     0.000      0.000     546.30     307.72
  0.000159     3020.     3020.     3020.          2         0         0       0.00     687.59     995.31


1490 NH CARD USED
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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 2.223
        3090' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE          SEC. E
   2.223      30.32     581.32       0.00       0.00     581.67       0.35       0.37       0.01     583.30
 66100.0        0.0   66100 0        0.0        0.0   13897.1        0.0     3936.2      292.6     582.20
    0.71       0 00       4.76       0.00      0.000      0.026      0.000      0.000     551.00     506.78
 0 000144     2440.      2440.      2440.          2          0          0       0.00     773.98    1280.76

1490 NH CARD USED
*SECNO 2.576
        1230' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE          SEC. F
   2.576      32.22     581.62       0.00       0.00     581.87       0.26       0.19       0.01     582.60
 66100.0        0.0   66100 0        0.0        0.0   16223.7        0.0     4579.2      324.7     582 20
    0.84       0 00       4.07       0.00      0.000      0.025      0.000      0.000     549.40      66.51
 0.000076     1860.      1860.      1860.          1          0          0       0.00     733.28     799.79

CCHV=     0.100 CEHV=     0.200
*SECNO 2.808
        D/S FACE OF D&M RAILROAD BRIDGE          SEC. G
   2.808      33.80     581 70       0.00       0.00     582.00       0.30       0.12       0.01     592.60
 66100.0        0.0   66100.0        0.0        0.0   15025.4        0.0     5021.1      344.8     592.50
    0.91       0.00       4.40       0.00      0.000      0.029      0.000      0.000     547.90     400.00
 0.000125     1232.      1232.      1232.          2          0          0       0.00     683 00    1083.00

CCHV=     0.100 CEHV=     0.200
*SECNO 2.809

3265 DIVIDED FLOW

   2 809      33.75     581.65       0.00       0.00     582.01       0.37       0 00       0.01     592.60
 66100.0        0.0   66100.0        0.0        0.0   13572.8        0.0     5021.5      344.8     592.50
    0.91       0.00       4.87       0.00      0.000      0.028      0.000      0 000     547.90     400.00
 0.000209        1.         1.          1          2          0          0       0.00     623 00    1083.00

*SECNO 2.813

3265 DIVIDED FLOW

   2.813      33.75     581.65       0.00       0.00     582.02       0.37       0.00       0.00     592.60
 66100.0        0.0   66100.0        0.0        0.0   13574.5        0.0     5026.8      345.0     592.50
    0.92       0.00       4.87       0.00      0 000      0.028      0.000      0 000     547.90     400.00
 0.000209       17.        17.        17.          0          0          0       0.00     623.00    1083.00
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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     1DC        ICONT      CORAR      TOPWID     ENDST

CCHV=     0.100 CEHV=     0.200
*SECNO 2.814
     2.814      33.82     581.72       0.00       0.00     582.02       0.30       0.00       0.01     592.60
   66100.0        0.0   66100.0        0.0        0.0   15042.5        0.0     5027.1      345.0     592.50
      0.92       0.00       4.39       0.00      0.000      0.029      0.000      0.000     547.90     400.00
  0.000125         1.         1.         1.          2          0          0       0.00     683.00    1083.00

1490 NH CARD USED
*SECNO 2.947
         710' U/S FROM U/S FACE OF D&M RAILROAD BRIDGE          SEC.  H
     2.947      30.09     581.89       0.00       0.00     582.11       0.22       0.08       0.01     581.80
   66100.0        0.0   66100.0        0.0        0.0   17413.0        0.0     5291.2      359.4     581.70
      0.97       0.00       3.80       0.00      0.031      0.025      0.031      0.000     551.80      34.37
  0.000102       709.       709.       709.          2          0          0       0.00    1081.15    1115.52

1490 NH CARD USED
*SECNO 3.350
         1323' D/S FROM D/S FACE OF BELINDA STREET BRIDGE          SEC.  I
     3.350      30.51     582.11       0.00       0.00     582.37       0.26       0.25       0.01     582.10
   66100.0        0.0   66100.0        0.0        0.0   16181.6        0.2     6112.6      413.7     581.90
      1.11       0.01       4.08       0.13      0.031      0.025      0.031      0.000     551.60      55.87
  0.000139      2130.      2130.      2130.          1          0          0       0.00    1138.56    1194.43

1490 NH CARD USED
*SECNO 3.600
     3.600      38.23     582.23       0.00       0.00     582.52       0.29       0.14       0.01     582.90
   66100.0        0.0   66100.0        0.0        0.0   15349.5        0.0     6591.1      441.1     583.40
      1.20       0.00       4.31       0.00      0.000      0.025      0.000      0.000     544.00     519.08
  0.000086      1322.      1322.      1322.          2          0          0       0.00     672.35    1191.44

CCHV=     0.100 CEHV=     0.200
*SECNO 3.601

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.67

         D/S FACE OF BELINDA STREET BRIDGE          SEC.  J
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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

   3 601      38.13     582.13      0.00       0.00     582.55      0.42       0 00       0.03     582.90
 66100.0       0.0    66100.0       0.0        0.0    12769.9       0.0     6591.4      441.2     583.40
    1.20      0.00       5.18      0.00      0.000      0.025     0.000      0.000     544.00     520.59
0.000193        1.         1.        1.          2          0         0      0 00     581.10    1190.68

*SECNO 3.615

3265 DIVIDED FLOW

   3.615      38.14     582.14      0.00       0.00     582.56      0.42       0 01       0.00     582.90
 66100.0       0.0    66100.0       0.0        0.0    12775.8       0.0     6612.9      442.1     583.40
    1.20      0.00       5.17      0.00      0.000      0.025     0.000      0.000     544.00     520.50
0.000193       74.        74.       74.          0          0         0      0.00     581.26    1190.76

1490 NH CARD USED
*SECNO 3.616

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.50

   3.616      38 29     582.29      0.00       0 00     582.57      0.29       0.00       0.01     582.90
 66100 0       0.0    66100 0       0.0        0.0    15384.0       0.0     6613.3      442.2     583.40
    1.20      0.00       4.30      0.00      0.000      0 025     0.000      0.000     544 00     517.53
0 000086        1.         1.        1.          2          0         0      0.00     674.30    1191 83

1490 NH CARD USED
*SECNO 3.646
          163' U/S FROM U/S FACE OF BELINDA STREET BRIDGE          SEC. K
   3.646      33.40     582.30      0.00       0.00     582.59      0.29       0.01       0.00     581.80
 66100.0       0.1    66099.9       0.0        0.5    15414.4       0 0     6670.7      444 8     583.50
    1.21      0.18       4.29      0.00      0.031      0.025     0.000      0.000     548.90     397.86
0.000095       163.       163.      163          0          0         0      0 00     744.44    1142.30

1490 NH CARD USED
*SECNO 3.689
   3.689      34.88     582.28      0 00       0.00     582.62      0.34       0.02       0.01     593.20
 66100.0       0.0    66100.0       0.0        0 0    14034.1       0.0     6748.8      448.4     593.90
    1.23      0.00       4.71      0.00      0.000      0.026     0.000      0.000     547.40     418.81
0 000107       231.       231.      231          2          0         0      0.00     606.19    1025.00
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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

CCHV=    0.100 CEHV=    0.200
*SECNO 3.690

3265 DIVIDED FLOW

        D/S FACE OF OLD BELINDA STREET BRIDGE          SEC. L
   3.690      34.84     582.24       0.00       0.00     582.63       0.39       0.00       0.01     593.20
 66100.0        0.0   66100.0        0.0        0.0   13208.0        0.0     6749.1      448.4     593.90
    1.23       0.00       5.00       0.00      0.000      0.025      0.000      0.000     547.40     422.00
0.000159         1.         1.         1.          2          0          0       0.00     557.00    1025.00

*SECNO 3.697

3265 DIVIDED FLOW

   3 697      34.85     582.25       0 00       0.00     582.64       0.39       0.01       0.00     593 20
 66100.0        0.0   66100.0        0.0        0.0   13210.6        0.0     6759.9      448.9     593.90
    1.23       0.00       5.00       0.00      0.000      0.025      0 000      0 000     547.40     422.00
0.000159        36.        36.        36          0          0          0       0.00     557.00    1025.00

*SECNO 3.698
   3.698      34.90     582.30       0.00       0 00     582.64       0.34       0.00       0.00     593.20
 66100.0        0.0   66100.0        0.0        0.0   14046.1        0.0     6760.2      448.9     593.90
    1 23       0.00       4.71       0.00      0.000      0.025      0.000      0.000     547.40     418.68
0.000104         1.         1.          1          2          0          0       0.00     606.32    1025.00

1490 NH CARD USED
*SECNO 4.366
        1650' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD          SEC  M
   4 366      34.52     582.72       0.00       0.00     582.98       0.26       0.33       0.01     583.70
 66100.0        0.0   66100.0        0.0        0.0   16195.5        0.0     7992.5      504.7     583.40
    1 47       0.00       4.08       0.00      0.000      0.025      0.000      0.000     548.20     299.22
0.000083      3550.      3550.      3550.          2          0          0       0.00     763.17    1062.39

CCHV=    0.100 CEHV=    0.200
*SECNO 4.677
   4.677      37.33     582.83       0.00       0 00     583.14       0.31       0.15       0.01     592.20
 66100.0        0.0   66100.0        0.0        0.0   14834.6        0.0     8579.8      531.6     592 50
    1.57       0.00       4.46       0.00      0 000      0.025      0.000      0.000     545.50     300.00
0.000096      1649.      1649.      1649.          2          0          0       0.00     657.00     957.00
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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

*SECNO 4.678

3265 DIVIDED FLOW

        D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1        SEC. N
    4.678     37 29    582.79      0.00      0.00    583.15      0.36      0.00      0 01    592.20
  66100.0       0.0   66100.0       0.0       0.0   13785.3       0.0    8580.1     531.6    592.50
     1.57      0.00      4.79      0.00     0.000     0.025     0.000     0.000    545.50    300.00
 0.000158        1.        1.        1.         2         0         0      0.00    612.00    957.00

*SECNO 4.682

3265 DIVIDED FLOW

    4.682     37.29    582.79      0 00      0.00    583.15      0.36      0 00      0.00    592.20
  66100.0       0.0   66100.0       0.0       0 0   13786.8       0.0    8586.5     531.8    592.50
     1.57      0.00      4.79      0.00     0.000     0.025     0.000     0.000    545 50    300.00
 0.000158        20       20.       20.         0         0         0      0.00    612.00    957.00

*SECNO 4.683
    4.683     37.35    582.85      0.00      0.00    583.16      0.31      0 00      0.00    592.20
  66100 0       0.0   66100.0       0.0       0.0   14846.8       0.0    8586.8     531.9    592.50
     1 57      0.00      4.45      0.00     0 000     0.025     0.000     0.000    545.50    300.00
 0.000096        1.        1.         1         2         0         0      0.00    657.00    957.00

*SECNO 4 835

3265 DIVIDED FLOW

        810' U/S FROM U/S FACE OF PENN CENTRAL RAILRAD BRIDGE #1        SEC. O
    4.835     32.01    583.01      0.00      0.00    583 23      0.23      0.07      0.01    582.20
  66100.0       0.7   66099.3       0 0       3.6   17310.0       0.0    8885.4     545.7    582 80
     1.63      0.18      3.82      0.00     0.031     0.025     0 031     0.000    551.00     81.47
 0.000073      809.      809.      809.         2         0         0      0.00    836.39    946.48

CCHV=    0.100 CEHV=    0.200
*SECNO 4.967
    4.967     29.83    583.03      0.00      0 00    583.30      0.28      0.06      0.01    595.20
  66100.0       0.0   66100.0       0.0       0.0   15681.2       0.0    9151.3     559.0    596.60
     1.68      0.00      4.22      0.00     0.000     0.026     0.000     0.000    553.20    100.00
 0.000108      702.      702.      702.         2         0         0      0.00    807 00    907 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

*SECNO 4.968

3265 DIVIDED FLOW

        D/S FACE OF THIRD STREET BRIDGE        SEC. P
    4.968     29 78    582.98      0 00      0 00    583.32      0.34      0.00      0.01    595.20
  66100.0       0.0   66100.0       0.0       0.0   14223.4       0.0    9151.7     559.0    596.60
     1.68      0.00      4.65      0.00     0 000     0.026     0.000     0.000    553.20    100.00
 0 000180         1        1.        1.         2         0         0      0.00    732.00    907.00

*SECNO 4.975

3265 DIVIDED FLOW

    4.975     29 79    582.99      0.00      0.00    583.32      0.34      0.01      0.00    595.20
  66100.0       0.0   66100 0       0.0       0.0   14227.0       0 0    9162.8     559.6    596.60
     1.68      0 00      4.65      0.00     0.000     0.026     0.000     0.000    553.20    100.00
 0 000180       34.       34.       34.         0         0         0      0 00    732.00    907.00

*SECNO 4.976
    4.976     29.85    583.05      0.00      0.00    583.33      0.28      0.00      0.01    595.20
  66100.0       0.0   66100.0       0 0       0.0   15701.4       0.0    9163.1     559.6    596.60
     1.68      0.00      4.21      0.00     0.000     0.026     0.000     0.000    553.20    100.00
 0.000108        1.        1.         1         2         0         0      0.00    807.00    907.00

CCHV=    0 100 CEHV=    0.200
*SECNO 5.152

3265 DIVIDED FLOW

        933' U/S FROM U/S FACE OF THIRD STREET BRIDGE        SEC. Q
    5 152     27.22    583.12      0.00      0.00    583.44      0.31      0.10      0.01    582.50
  65900.0       0.7   65899.3       0.0       3.0   14636.3       0.0    9487.7     576.2    583.40
     1.74      0.22      4.50      0.00     0.031     0.025     0.000     0.000    555 90     96.75
 0.000111      932.      932.      932.         2         0         0      0.00    750.27   1331.00

*SECNO 5.325
    5.325     30.28    583.18      0 00      0 00    583.55      0.37      0.10      0.01    582.30
  65900.0       0.8   65898.3       1.0       1.9   13557.7       3.9    9785.5     590.7    582.30
     1 79      0.41      4.86      0.25     0.031     0.025     0.031     0.000    552.90    277.40
 0.000109      920.      920.      920.         2         0         0      0 00    619.65    897.05
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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 5.326

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.69

        D/S FACE OF VETERANS MEMORIAL BRIDGE          SEC  R
   5.326     30.15    583 05      0.00      0 00    583 58      0.53      0.00      0.03    582.30
65900.0       0.8   65899.2       0.0       1.6   11239.2       0.2    9785.8     590 7    607.80
   1.79      0.53      5 86      0 01     0.031     0.025     0 031     0.000    552.90    277.50
0.000232       1.        1.        1.         2         0         0      0.00    514.54    886 04

*SECNO 5.339

3265 DIVIDED FLOW

   5.339     30.17    583.07      0.00      0 00    583 60      0.53      0.02      0.00    582.30
65900.0       0.9   65899.1       0.0       1.6   11245.0       0.3    9803 4     591.5    607.80
   1.79      0.54      5.86      0 10     0.031     0.025     0.031     0.000    552.90    277.49
0.000231      68.        68       68.         0         0         0      0.00    515 50    886.99


1490 NH CARD USED
*SECNO 5 340

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.48

   5.340     30.35    583.25      0.00      0.00    583.62      0.36      0.00      0 02    582.30
65900.0       0.9   65897.8       1.3       2 1   13597.7       5.5    9803.6     591.5    582.30
   1.79      0.42      4 85      0.24     0.031     0.025     0.031     0 000    552 90    277.35
0.000106       1.        1.         1         2         0         0      0.00    625.36    902.70


1490 NH CARD USED
*SECNO 5.905

3265 DIVIDED FLOW

      2990' U/S FROM U/S FACE OF VETERANS MEMORIAL BRIDGE        SEC.  S
   5.905     27.43    583.73      0 00      0.00    584.02      0.29      0.40      0.01    582.90
65900.0       4 4   65825.5      70.1      12.6   15256.7     147.7   10799.7     662.6    582.90
   1.99      0.35      4.31      0.47     0.031     0.025     0.031     0.000    556.30    151.83
0.000174     2990     2990.     2990.         2         0         0      0.00   1444 95   1651.81
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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

1490 NH CARD USED
*SECNO 6.222

3470 ENCROACHMENT STATIONS=      933.0    1833.0  TYPE=      1  TARGET=      900 000
        NORTH END OF MIDDLE GROUND ISLAND          SEC. T
    6 222     30.81    583.91      0.00      0.00    584.30      0.40      0.26      0.02    582.00
  57650.0       3.5   57643.8       2.7       6 6   11405 6       5.4   11314.1     701.8    582.00
     2.08      0.52      5.05      0.50     0.031     0.025     0.031     0.000    553.10    981.45
 0.000136     1670.     1670.     1670.         2         0         0      0.00    598.61   1580.06

1490 NH CARD USED
*SECNO 6.519

3470 ENCROACHMENT STATIONS=     1106.0    2126.0  TYPE=      1  TARGET=     1020.000
    6.519     38.02    584.12      0.00      0.00    584.48      0.36      0.17      0.00    597.80
  57650.0       0.0   57650.0       0.0       0.0   11967.4       0.0   11736.3     720.6    597 50
     2.17      0.00      4.82      0.00     0.000     0.025     0.000     0.000    546.10   1390.00
 0.000092     1573      1573.     1573.         2         0         0      0.00    447 00   1837.00

CCHV=    0.100 CEHV=    0.200
*SECNO 6.520

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.60

3470 ENCROACHMENT STATIONS=     1106.0    1906.0  TYPE=      i  TARGET=      800.000
        D/S FACE OF LAFAYETTE BRIDGE          SEC. U
    6.520     37.22    583.92      0.00      0.00    584.53      0 61      0.00      0.05    597.80
  57650.0       0.0   57650.0       0.0       0.0   9194.1       0.0   11736.6     720.6    597.50
     2.17      0.00      6.27      0.00     0 000     0.025     0.000     0.000    546.70   1390.00
 0.000254        i.        i.         i         2         0         0      0.00    367.00   1837.00

*SECNO 6.528

3265 DIVIDED FLOW
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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


3470 ENCROACHMENT STATIONS=      1106.0     1906.0  TYPE=       1  TARGET=      800.000
     6 528      37.23     583.93       0.00       0 00     584.54       0.61       0 01       0.00     597.80
   57650.0        0.0   57650 0        0.0        0.0     9196.7        0.0   11745.4      721.0     597.50
      2.17       0.00       6.27       0 00      0.000      0.025      0.000      0.000     546.70    1390.00
  0.000254        42        42.         42          0          0          0       0.00     367.00    1837.00

*SECNO 6 529

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.67

3470 ENCROACHMENT STATIONS=      1106.0     2126.0  TYPE=       1  TARGET=     1020.000
     6.529      38 11     584.21       0.00       0.00     584.57       0.36       0.00       0.03     597.80
   57650.0        0.0   57650.0        0.0        0.0    12007.1        0.0   11745.7      721.0     597.50
      2 17       0.00       4.80       0.00      0 000      0.025      0 000      0.000     546.10    1390.00
  0.000091         1.         1.         1.          2          0          0       0.00     447.00    1837.00

1490 NH CARD USED
*SECNO 7.016

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=      2030.0     2845.0  TYPE=       1  TARGET=      815.000
         2578' U/S FROM U/S FACE OF LAFAYETTE BRIDGE          SEC.  V
     7 016      31 54     584.54       0 00       0.00     584.85       0.31       0.28       0.00     583.60
   57650.0        0.0   57646.1        3.9        0.0    12937.5       15.4   12484.3      757 3     584.60
      2.33       0.00       4.46       0.25      0.000      0.025      0.031      0.000     553.00    2030 00
  0.000128      2578.      2578.      2578.          2          0          0       0.00     778.20    2810.73

1490 NH CARD USED
*SECNO 7.567

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=      1190.0     2490.0  TYPE=       1  TARGET=     1300.000
         5488' U/S FROM U/S FACE OF LAFAYETTE BRIDGE          SEC.  W
     7.567      30.79     584.89       0.00       0.00     585.13       0.24       0.27       0 01     584.70
   57650.0        46 0   57583 6       20.4      142 5   14578.4       43.8   13410.1      814.5     582.00
      2.54       0 32       3.95       0.47      0.031      0.025      0.031      0.000     554 10    1258.80
  0 000072      2910.      2910       2910.          2          0          0       0.00     934.29    2450 90
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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

1490 NH CARD USED
*SECNO 8.099

3470 ENCROACHMENT STATIONS=     1342.0    1982.0  TYPE=      1  TARGET=      640.000
        SOUTH END OF MIDDLE GROUND ISLAND & NORTH END OF SKULL ISLAND  SEC.  X
    8.099     32 06    585.06      0.00      0 00    585.40      0.34      0.25      0.02    583.30
  57650.0      95.2   57532.0      22 8     141.7   12301.4      36.1   14288.8     865.1    582.20
     2.70      0.67      4.68      0 63     0.031     0.027     0 031     0.000    553.00   1342.00
 0 000113    2810.     2810.     2810.         2         0         0      0.00    635.23   1977.23

1490 NH CARD USED
*SECNO 8.241

3265 DIVIDED FLOW

        750' U/S FROM MIDDLE GROUND ISLAND        SEC  Y
    8.241     30.94    585.24      0.00      0.00    585.49      0.25      0.08      0.01    583.00
  65900.0     410.4   65489.6       0.0     625.8   16224.0       0.0   14541.3     883.6    588.40
     2.76      0.66      4.04      0.00     0.031     0 027     0.000     0 000    554 30     95 24
 0.000103     750.      750.      750.         2         0         0      0.00   1515.79   1924.22

1490 NH CARD USED
*SECNO 9.079

3265 DIVIDED FLOW

        5170' U/S FROM MIDDLE GROUND ISLAND        SEC.  Z
    9.079     34.66    585.76      0 00      0.00    585.95      0 20      0.46      0 01    582 00
  67100.0      25 9   63734.4    3339.7      28.5   17477.1    2892.5   16431.1    1055.6    582 00
     3.11      0.91      3.65      1 15     0.031     0.027     0 031     0.000    551.10      9 25
 0.000105    4420.     4420.     4420         2         0         0      0.00   1873.24   1886.01

1490 NH CARD USED
*SECNO 9.584
        4260' D/S FROM CHEBOYGANING CREEK        SEC.  AA
    9.584     31.36    586.06      0.00      0.00    586.27      0.20      0.31      0.00    583.10
  67100.0    4762.7   60025.9    2311 3    3040.8   15856.8    1422.5   17635.5    1165.9    583.00
     3.31      1 57      3.79      1.62     0.031     0.027     0.029     0.000    554.70     12.03
 0 000134    2800.     2670.     1700.         2         0         0      0.00   2127.99   2140 01
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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

1490 NH CARD USED
*SECNO 10.240
        800' D/S FROM CHEBOYGANING CREEK        SEC.  AB
   10 240     31.86    586 46      0.00      0.00    586.62      0.16      0.35      0.00    582.00
  67100.0   14188.8   52901.9       9.3    9869.2   15178.2      14.8   19379.4    1334.4    582.10
     3.62      1 44      3.49      0.63     0.031     0.027     0.031     0.000    554.60      3.44
 0 000079     3050      3460.     3600.         0         0         0      0.00   2361.34   2364.78

CCHV=    0.100 CEHV=    0 200
1490 NH CARD USED
*SECNO 10.993

3470 ENCROACHMENT STATIONS=       80.0    1370.0  TYPE=      1  TARGET=     1290.000
        350' NORTH FROM BAY COUNTY-SAGINAW COUNTY LINE        SEC.  AC
   10 993     31.94    586 74      0.00      0.00    587 02      0.28      0.38      0.02 100000.00
  68400.0       0.0   68379 9      20.1       0 0   16127.3      24.3   21162.6    1472.4    582.80
     3.88      0.00      4.24      0.83     0.000     0.025     0.031     0.000    554.80     80.00
 0 000125     3100.     3980.     4100          2         0         0      0 00   1006.10   1086.10

CCHV=    0.100 CEHV=    0.200
*SECNO 11 433

3470 ENCROACHMENT STATIONS=      210.0    1060.0  TYPE=      1  TARGET=      850.000
   11 433     32.16    587.01      0.00      0.00    587.32      0.31      0 29      0.01 100000 00
  68400 0       0.0   68400.0       0.0       0.0   15353.6       0.0   22003.4    1521.9 100000.00
     4 02      0.00      4.45      0.00     0 000     0.025     0.000     0 000    554 85    210.00
 0.000125     2325.     2325.     2325.         2         0         0      0 00    850.00   1060.00

1490 NH CARD USED
*SECNO 11 802

3470 ENCROACHMENT STATIONS=      380.0    1495.0  TYPE=      1  TARGET=     1115.000
        3920' SOUTH FROM BAY COUNTY-SAGINAW COUNTY LINE        SEC.  AD
   11.802     32.29    587.19      0.00      0.00    587.59      0.40      0.25      0.02    582.20
  68400.0    2502.8   65864.8      32.4    1803.0   12820.5      33 5   22672.5    1564.4    582.10
     4.13      1.39      5.14      0.97     0.031     0.025     0.031     0.000    554.90    380.00
 0.000129     1900.     1945.     2000.         2         0         0      0.00   1062.05   1442.05
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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

1490 NH CARD USED
*SECNO 12.569
        4050' U/S FROM SECTION AD          SEC. AE
   12.569     34.42     587.82      0.00       0.00     587 99      0.18       0.39       0.02     583.00
  68400 0    9857.6    58350.5     191.9     6093.7    16208.3     181.3    24399.1     1690.7     582.40
     4.47      1.62       3.60      1 06      0.031      0.025     0.031      0.000     553.40       6.27
 0.000073     4050       4050.     4050.          2          0         0       0.00    1656.26    1662.52

1490 NH CARD USED
*SECNO 13.249

3470 ENCROACHMENT STATIONS=       230.0     1406.0  TYPE=       1  TARGET=      1176.000
        6115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE (I-75 BRIDGE)     SEC. AF
   13.249     33.38     587.98      0.00       0.00     588.33      0.34       0.30       0.03     585.30
  68400.0     593.6    67604 5     201 9      784 7    14263.5     236.9    25955.4     1804.0     582.10
     4.68      0.76       4.74      0.85      0.031      0.025     0.031      0 000     554.60     230 00
 0 000096     3590.      3590.     3590.          2          0         0       0 00    1092 29    1322.29

1490 NH CARD USED
*SECNO 13.747

3470 ENCROACHMENT STATIONS=       275.0     1630.0  TYPE=       1  TARGET=      1355 000
        3485' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC. AG
   13 747     35.21     588.31      0.00       0.00     588.58      0.27       0.25       0 01     585.90
  68400.0      39.7    61444.7    6915.6       76.9    13991.4    4066 4    26964.3     1876.9     582.00
     4.86      0.52       4.39      1.70      0.031      0.025     0.031      0.000     553 10     301.21
 0.000094     2630.      2630.     2630.          2          0         0       0 00    1320.99    1622.19

1490 NH CARD USED
*SECNO 14.385

3470 ENCROACHMENT STATIONS=       780.0     1380.0  TYPE=       1  TARGET=       600.000
        115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC. AH
   14.385     35 15     588.55      0 00       0.00     588.91      0.36       0.31       0 02     581.50
  68400.0     115.2    67967.6     317 2       94.1    14163.5     244.6    28226.8     1951.2     581.80
     5 05      1.22       4.80      1.30      0.031      0 026     0 031      0 000     553.40     780.00
 0.000089     3370.      3370.     3370.          2          0         0       0.00     600.00    1380.00
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    Q          GLOB       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=    0.100 CEHV=    0.200
*SECNO 14.406
    14.406     36.12     588.52      0.00       0.00     588.93      0.40       0.01       0.01      604.40
   68400.0      0.0    68400.0       0 0        0 0    13406.4       0.0     28263 3     1952.7      600 10
      5.06     0.00       5.10      0.00      0.000      0.025     0.000      0.000     552.40       25.97
  0 000107     114.       114.       114.          2          0         0       0.00     541.56      567.53

*SECNO 14.407

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.61

         D/S FACE OF ZILWAUKEE BRIDGE        SEC  AI
    14.407     35.94     588.34      0.00       0.00     588.97      0.63       0.00       0.05      604.40
   68400.0      0.0    68400 0       0.0        0.0    10713.7       0.0     28263 6     1952.7      600.10
      5.06     0.00       6.38      0.00      0.000      0.025     0.000      0 000     552.40       26.22
  0.000287       1.         1.         1.          2          0         0       0.00     451.09      567.32

*SECNO 14.420

3265 DIVIDED FLOW
    14.420     35.96     588.36      0.00       0.00     588 99      0.63       0.02       0.00      604.40
   68400.0      0.0    68400.0       0.0        0.0    10719.9       0.0     28280.8     1953.4      600.10
      5.06     0.00       6 38      0.00      0.000      0.025     0 000      0.000     552 40       26.20
  0 000286      70.        70        70.          0          0         0       0.00     451.13      567.33

*SECNO 14.421

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.65

    14.421     36.22     588 62      0 00       0.00     589.02      0.40       0.00       0.02      604.40
   68400.0      0.0    68400.0       0.0        0.0    13456.4       0.0     28281.1     1953.4      600.10
      5.06     0.00       5.08      0.00      0 000      0.025     0.000      0.000     552.40       25.84
  0.000106       1.         1.         1.          2          0         0       0.00     541.79      567.63
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 SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
 Q          GLOB       GCH        GROB       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=    0 100 CEHV=    0.200
1490 NH CARD USED
*SECNO 15.156

3470 ENCROACHMENT STATIONS=     1567.0    2280.0  TYPE=      1  TARGET=      713.000
         3885' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AJ
    15 156     35.52     589 12      0.00       0.00    589.42      0.31      0.39      0.01    588.60
   68400.0       0.0   68400.0       0.0        0.0   15425.3       0.0   29568.7    2009.3 100000.00
      5.31      0.00      4.43      0.00      0.000     0.025     0 000     0.000    553.60   1567.00
  0.000098     3884.     3884.     3884.          2         0         0      0.00    713 00   2280.00


1490 NH CARD USED
*SECNO 15.470

3470 ENCROACHMENT STATIONS=     2010 0    2810.0  TYPE=      1  TARGET=      800.000
    15.470     36.30     589.21      0.00       0.00    589.61      0.40      0.17      0.02    582.11
   68400 0     561.0   66765.3    1073 7      450.8   13034.9     742.5   30132.7    2038.0    581.81
      5 40      1 24      5.12      1.45      0.031     0.025     0.031     0.000    552.91   2010 00
  0.000104     1657.     1657.     1657.          2         0         0      0.00    796.17   2806 17


*SECNO 15.612

3470 ENCROACHMENT STATIONS=     2100.0    2810.0  TYPE=      1  TARGET=      710.000
         6295' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AK
    15.612     36.69     589.29      0.00       0 00    589.69      0.39      0.08      0.00    581 80
   68400 0      90.7   67125.9    1183.4       71.8   13239.8     805.6   30376.7    2051.0    581.50
      5.44      1.26      5.07      1.47      0.031     0.025     0.031     0.000    552.60   2100.00
  0.000100      750.      750.      750.          0         0         0      0.00    710.00   2810.00


1490 NH CARD USED
*SECNO 16.169

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1000 0    2084.0  TYPE=      1  TARGET=     1084.000
         9235' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AL
    16.169     36.98     589 68      0.00       0 00    590.02      0.34      0.33      0.01    587.60
   68400.0     346.4   68053.6       0.0      280.5   14600.8       0.0   31355 3    2102.7 100000.00
      5.62      1 24      4.66      0 00      0.031     0.025     0.000     0.000    552.70   1000.00
  0.000126     2940.     2940.     2940.          2         0         0      0 00    822.76   2084.00
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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


1490 NH CARD USED
*SECNO 16.500

3470 ENCROACHMENT STATIONS=      832.0    1491.0  TYPE=      1  TARGET=      659.000
        1455' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AM
   16.500     35.62    589.92      0 00      0.00    590.20      0.28      0.17      0.01    582 50
  68400.0       0.0   68400.0       0.0       0.0   16218.2       0.0   31980 0    2132.5 100000.00
     5.73      0.00      4.22      0 00     0.000     0.025     0.000     0.000    554.30    832.00
 0.000077     1750.     1750.     1750.         2         0         0      0.00    659.00   1491.00


1490 NH CARD USED
*SECNO 16 758

3265 DIVIDED FLOW

3280 CROSS SECTION     16.76 EXTENDED      0 66 FEET

        95' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AN
   16 758     41.86    589.96      0.00      0.00    590.31      0.35      0.10      0.01    587.60
  68000.0      12 8   67706.0     281.2      29.5   14316.5     299.2   32461.8    2151.8    581 90
     5.81      0.43      4.73      0.94     0 031     0.025     0.031     0.000    548.10      0.00
 0.000071     1360.     1360.     1360         2         0         0      0.00    577.36    600.00


1490 NH CARD USED
*SECNO 16.775
3280 CROSS SECTION     16 77 EXTENDED      0.13 FEET


3470 ENCROACHMENT STATIONS=      770.0    1340.0  TYPE=      1  TARGET=      570.000
   16.775     42.13    589.93      0.00      0 00    590.33      0.40      0.01      0.01    593.40
  68000.0       0.0   68000.0       0 0       0.0   13440.3       0.0   32492.4    2153.0 100000.00
     5.82      0 00      5 06      0.00     0.000     0.025     0.000     0.000    547.80    770.00
 0.000116       95.       95.       95.         2         0         0      0.00    561.19   1331.19


1490 NH CARD USED
*SECNO 16.776

3265 DIVIDED FLOW
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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       EI MIN    SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.60


3470 ENCROACHMENT STATIONS=      770.0    1342 0  TYPE=      1  TARGET=      572.000
        D/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AO
   16.776     42.06    589.86      0.00      0.00    590.35      0.49      0.00      0.02    593.40
  68000.0       0.0  68000.0       0.0       0.0  12122.8       0.0  32492.7    2153.1 100000 00
     5.82      0.00      5.61      0.00     0.000     0.025     0.000     0.000    547.80    770 00
 0.000317         1        1.        1.         2         0         0      0.00    506.33   1331 33


*SECNO 16.781

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      770.0    1342.0  TYPE=      1  TARGET=      572.000
   16.781     42 07    589 87      0.00      0 00    590.36      0 49      0.01      0.00    593.40
  68000.0       0.0  68000.0       0.0       0.0  12125.7       0.0  32500.2    2153.4 100000.00
     5 82      0.00      5.61      0.00     0.000     0.025     0.000     0.000    547 80    770.00
 0.000316       27.       27.       27.         0         0         0      0.00    506.35   1331.35


1490 NH CARD USED
*SECNO 16.782
3280 CROSS SECTION     16 78 EXTENDED      0.17 FEET


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1 66


3470 ENCROACHMENT STATIONS=      770.0    1340.0  TYPE=      1  TARGET=      570 000
   16 782     42.17    589.97      0.00      0.00    590.37      0.40      0.00      0.01    593.40
  68000.0       0.0  68000.0       0.0       0.0  13461.4       0.0  32500.5    2153.4 100000.00
     5.82      0.00      5.05      0.00     0.000     0.025     0.000     0.000    547.80    770.00
 0.000115        1.        1.        1.         2         0         0      0.00    561.26   1331.26


1490 NH CARD USED
*SECNO 17.282

3470 ENCROACHMENT STATIONS=      320.0     912.0  TYPE=      1  TARGET=      592 000
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        2645' U/S FROM U/S FACE OF SIXTH AVENUE BRIDGE          SEC. AP
   17.282     34.50    590.30      0.00      0.00    590.64      0.35      0.27      0.00    581 80
  68000 0       0.0   68000.0       0 0       0.0   14383.3       0 0   33345.6    2188.4 100000.00
     5.97      0.00      4.73      0.00     0.000     0.025     0.000     0.000    555.80    320.00
 0 000093     2644.     2644.     2644.         2         0         0      0.00    592 00    912.00


1490 NH CARD USED
*SECNO 17.758

3470 ENCROACHMENT STATIONS=      540.0     990.0  TYPE=      1  TARGET=      450 000
        175' D/S FROM D/S FACE OF C&O RAILROAD BRIDGE          SEC. AQ
   17.758     36 25    590.45      0.00      0 00    590.93      0.47      0 26      0.02    581.70
  68000.0       0.0   68000.0       0.0       0.0   12341.3       0.0   34115.5    2218.4 100000.00
     6.10      0.00      5.51      0.00     0.000     0.025     0.000     0.000    554.20    540.00
 0.000113     2510.     2510.     2510.         2         0         0      0.00    450.00    990.00


CCHV=    0.100 CEHV=    0.200
*SECNO 17.790
   17.790     39.51    590.71      0 00      0.00    590.96      0.25      0.02      0.02    596.80
  68000.0       0.0   68000.0       0.0       0.0   16899 3       0.0   34173.6    2220.7    596.90
     6.11      0.00      4.02      0.00     0.000     0.025     0.000     0.000    551.20   1125 71
 0.000075      173       173.      173.         2         0         0      0 00    729.76   1855.47


*SECNO 17.791

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.70


3370 NORMAL BRIDGE, NRD=  26 MIN ELTRD=   593.00 MAX ELLC=   592.60

        D/S FACE OF C&O RAILROAD BRIDGE          SEC. AR
   17.791     39.48    590.68      0.00      0.00    590.97      0.29      0.00      0.01    596.80
  68000.0       0.0   68000.0       0.0       0.0   15696.6       0.0   34174.0    2220.8    596 90
     6.11      0.00      4.33      0.00     0.000     0.025     0.000     0.000    551.20   1125 00
 0.000154        1.        1.         1         2         0         0   -136.07    697.00   1857.00


*SECNO 17.797

3265 DIVIDED FLOW
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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


3370 NORMAL BRIDGE, NRD=  26 MIN ELTRD=   593.00 MAX ELLC=   592.60

   17.797     39.48     590.68      0.00       0.00     590.98      0.29       0.00       0.00     596.80
 68000.0       0.0    68000.0      0.0        0.0    15698.7       0.0    34185.5     2221.3     596.90
    6.11      0.00       4.33      0.00      0.000      0.025     0.000      0.000     551.20    1125.00
 0.000154     32.        32.       32.          0          0         0    -136.54     697.00    1857.00

*SECNO 17.798

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.44

   17.798     39.53     590.73      0.00       0.00     590.98      0.25       0.00       0.00     596.80
 68000.0       0.0    68000.0      0.0        0.0    16912.1       0.0    34185.9     2221.3     596.90
    6.11      0.00       4.02      0.00      0.000      0.025     0.000      0.000     551.20    1125.71
 0.000075      1.         1         1          2          0         0       0.00     729.77    1855.48


1490 NH CARD USED
*SECNO 18.134

3470 ENCROACHMENT STATIONS=     1275.0    1835.0  TYPE=      1  TARGET=      560.000
         140' D/S FROM D/S FACE OF I-675 BRIDGE        SEC. AS
   18.134     32.67     590.77      0.00       0.00     591.17      0.39       0.16       0.03     582.00
 68000.0       0.0    68000.0      0.0        0.0    13533.8       0.0    34809.0     2247.7  100000.00
    6.21      0.00       5.02      0.00      0.000      0.025     0.000      0.000     558.10    1275.00
 0.000106    1783.      1783.     1783          2          0         0       0.00     560.00    1835.00


1490 NH CARD USED
*SECNO 18.160

3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
   18.160     33.96     590.76      0.00       0.00     591.19      0.43       0.02       0.01  100000.00
 68000.0       0.0    67999.9      0.1        0.0    12960.8       0.9    34851.9     2249.5     590.60
    6.22      0.00       5.25      0.10      0.000      0.025     0.031      0.000     556.80    1100.00
 0.000117    141.       141.      141.          2          0         0       0.00     550.78    1650.78


1490 NH CARD USED
*SECNO 18.161
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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


3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
        D/S FACE OF I-675 BRIDGE          SEC.  AT
   18 161     33.94    590 74      0.00      0.00    591.19      0.45      0.00      0.01 100000.00
  68000.0      0.0   68000.0       0.0       0.0   12568.9       0 0   34852.2    2249.5    591.50
     6.22     0.00      5.41      0.00     0.000     0.026     0.000     0.000    556.80   1100.00
 0.000209       1.        1.        1.         2         0         0      0.00    516.00   1631.00

*SECNO 18.180

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1100 0    1750.0  TYPE=      1  TARGET=      650.000
   18.180     33.96    590.76      0.00      0.00    591.21      0.45      0.02      0.00 100000.00
  68000.0      0 0   68000.0       0.0       0.0   12577.0       0.0   34979.9    2250.6    591.50
     6.23     0 00      5.41      0.00     0.000     0.026     0.000     0.000    556.80   1100.00
 0.000208      96.       96        96.         0         0         0      0.00    516.00   1631.00


1490 NH CARD USED
*SECNO 18.181

3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
   18.181     33.99    590.79      0.00      0.00    591.22      0.43      0.00      0 00 100000 00
  68000.0      0.0   67999.9       0 1       0.0   12976.7       1.2   34880 2    2250.6    590.60
     6.23     0.00      5 24      0.11     0.000     0 025     0.031     0.000    556.80   1100.00
 0.000117       1.        1.        1.         2         0         0      0.00    552 75   1652.75


CCHV=    0.100 CEHV=    0 200
*SECNO 18 267

3470 ENCROACHMENT STATIONS=     1075.0    1593.0  TYPE=      1  TARGET=      518 000
   18.267     38.28    590.88      0.00      0 00    591.27      0.39      0.05      0.00    597.10
  68000 0      0.0   68000.0       0.0       0.0   13497.6       0.0   35022 1    2256.4 100000.00
     6.25     0.00      5.04      0.00     0.000     0.025     0.000     0.000    552.60   1075.00
 0.000101     467.      467.      467.         1         0         0      0 00    518.00   1593.00
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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       EI MIN    SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 18.268

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.65

3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   589.10 MAX ELLC=   593.30

3470 ENCROACHMENT STATIONS=     1075.0    1593 0  TYPE=      1  TARGET=      518.000
         D/S FACE OF JOHNSON STREET BRIDGE          SEC.  AU
    18.268     38.21    590.81      0.00      0 00    591 29      0.47      0.00      0.02    592.50
   68000.0       0.0  68000.0       0.0       0.0   12306.4       0.0   35022.4    2256.4 100000.00
      6.25      0.00      5.53      0.00     0.000     0.025     0.000     0.000    552.60   1075.00
  0.000236        1.        1.         1         2         0         0    -94.12    500.00   1593.00

*SECNO 18.273

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   589.10 MAX ELLC=   593.30

3470 ENCROACHMENT STATIONS=     1075.0    1593.0  TYPE=      1  TARGET=      518.000
    18 273     38.22    590.82      0.00      0.00    591.29      0.47      0.01      0.00    592.50
   68000.0       0 0  68000.0       0.0       0.0   12308 4       0.0   35029.7    2256.7 100000.00
      6 25      0.00      5.52      0.00     0 000     0.025     0.000     0.000    552.60   1075.00
  0.000236       26.       26.       26.         0         0         0    -94 35    500.00   1593.00

*SECNO 18.274

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.53

3470 ENCROACHMENT STATIONS=     1075.0    1593.0  TYPE=      1  TARGET=      518.000
    18.274     38.31    590.91      0.00      0.00    591.30      0.39      0 00      0.01    597.10
   68000.0       0.0  68000.0       0.0       0 0   13516.7       0.0   35030.0    2256.7 100000.00
      6.25      0 00      5.03      0.00     0 000     0.025     0.000     0.000    552.60   1075.00
  0.000101        1.        1.        1.         2         0         0      0 00    518.00   1593.00
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    SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
    G          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

1490 NH CARD USED
*SECNO 18.335

3470 ENCROACHMENT STATIONS=      418 0     848 0  TYPE=      1  TARGET=      430.000
         327' U/S FROM U/S FACE OF JOHNSON STREET BRIDGE          AV
    18.335     35.18    590.88      0.00       0.00    591.35      0.47       0.03       0.01     576.70
   68000.0      0.0   68000.0       0.0        0.0   12391 0       0.0    35127.0     2260.3 100000.00
      6.27     0.00      5.49      0.00      0 000     0.025     0.000      0.000     555.70     418.00
  0.000110     326.      326.      326.          2         0         0       0.00     430.00     848 00

1490 NH CARD USED
*SECNO 18.430

3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
    18.430     35.51    590.91      0.00       0.00    591.42      0.51       0 06       0.01     599.50
   68000.0      0.0   67997.8       2.2        0.0   11923.4       7.0    35268.5     2265.3     576.20
      6 29     0 00      5.70      0 32      0.000     0.025     0.031      0.000     555.40     401.81
  0.000125     507.      507.      507.          2         0         0       0.00     439.18     841.00

CCHV=    0.100 CEHV=    0.200
*SECNO 18.431

3265 DIVIDED FLOW

3302 WARNING·  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.60

3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
         D/S FACE OF GENESEE AVENUE BRIDGE          SEC.  AW
    18 431     35.37    590.77      0.00       0 00    591.46      0.69       0 00       0.04     599.50
   68000.0      0.0   68000.0       0.0        0.0   10217 2       0.0    35268.8     2265.3     596 60
      6.29     0 00      6 66      0.00      0.000     0.025     0.000      0.000     555.40     400.00
  0.000351       1.         1        1.          2         0         0       0 00     428.50     840.50

*SECNO 18.444

3265 DIVIDED FLOW
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 SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
 Q          GLOB       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


3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
    18.444     35.39    590.79      0.00       0.00    591.48       0.69       0 02       0.00     599.50
  68000.0       0.0  68000.0       0.0        0.0  10223.7        0.0   35283.8     2266.0     596.60
     6.30      0.00      6.65      0.00      0.000      0.025      0.000      0.000     555.40     400.00
 0.000351       64.       64.       64.          0          0          0       0.00     428.50     840.50


*SECNO 18.445

3302 WARNING.  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.68


3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
    18.445     35.59    590.99      0.00       0.00    591.50       0.50       0.00       0.02     599 50
  68000.0       0.0  67997.8       2 2        0 0  11958.9        7.0   35284.0     2266.0     576.20
     6.30      0.00      5.69      0.32      0.000      0.025      0.031      0.000     555.40     401.80
 0.000124        1.        1.        1.          2          0          0       0.00     439.20     841.00


1490 NH CARD USED
*SECNO 18.598

3470 ENCROACHMENT STATIONS=      265 0     700.0  TYPE=      1  TARGET=      435.000
         820' U/S FROM U/S FACE OF GENESEE AVENUE BRIDGE          SEC.  AX
    18.598     32.16    591 06      0.00       0 00    591.61       0.55       0.11       0.01     581.90
  68000.0       0.0  68000.0       0.0        0.0  11392.2        0.0   35503.1     2274.2  100000.00
     6.33      0.00      5.97      0.00      0.000      0.025      0.000      0.000     558.90     265.00
 0.000139      817.      817.      817.          2          0          0       0.00     435.00     700 00


1490 NH CARD USED
*SECNO 18.871

3470 ENCROACHMENT STATIONS=      190 0     650 0  TYPE=      1  TARGET=      460.000
         360' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2    SEC AY
    18.871     33.42    591.32      0.00       0 00    591 81       0.49       0.19       0.01     586 80
  68000.0       0.0  68000.0       0.0        0.0  12132.5        0.0   35891.9     2289.0  100000.00
     6.41      0.00      5.60      0.00      0.000      0.025      0.000      0.000     557.90     190.00
 0.000122     1440.     1440.     1440.          2          0          0       0.00     460 00     650.00
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 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

1490 NH CARD USED
*SECNO 18.938
   18.938      36.55     591.45       0.00       0.00     591.86       0.41       0.04       0.01     596.40
 68000.0        0.0    68000.0        0.0        0.0    13214.4        0.0    35995.8     2293.1     596.80
    6.43       0.00       5.15       0.00      0.000      0.025      0.000      0.000     554.90     300.00
0.000114       357.       357.        357          2          0          0       0.00     550.00     850.00

CCHV=    0.100 CEHV=    0.200
*SECNO 18.939

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.65

3370 NORMAL BRIDGE, NRD=  25 MIN ELTRD=   593.60 MAX ELLC=   592.50

        D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2   SEC. AZ
   18.939      36.44     591.34       0.00       0.00     591.89       0.55       0.00       0.03     596.40
 68000.0        0.0    68000.0        0.0        0.0    11426.3        0.0    35996.1     2293.1     596.80
    6.43       0.00       5.95       0.00      0.000      0.025      0.000      0.000     554.90     300.00
0.000272         1.         1.          1          2          0          0       0.00     479.00     850.00

*SECNO 18.944

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=  25 MIN ELTRD=   593.60 MAX ELLC=   592.50

   18.944      36.44     591.34       0.00       0.00     591.89       0.55       0.01       0.00     596.40
 68000.0        0.0    68000.0        0.0        0.0    11428.5        0.0    36002.4     2293.4     596.80
    6.43       0.00       5.95       0.00      0.000      0.025      0.000      0.000     554.90     300.00
0.000272        24.        24.        24.          0          0          0       0.00     479.00     850.00

*SECNO 18.945

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.54
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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


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       596.40 ELREA=       596.80

   18.945     36.60     591.50      0.00       0.00     591.91      0.41       0.00       0.01     596.40
 68000.0       0.0    68000 0       0.0        0.0    13242.1       0.0    36002.7    2293.4     596.80
    6.43      0.00       5.14      0.00      0.000      0.025     0.000      0.000     554 90     300.00
0.000115        1.         1.        1.          2          0         0       0.00     550.00     850.00


1490 NH CARD USED
*SECNO 19 432

3470 ENCROACHMENT STATIONS=      390.0     900.0  TYPE=      1  TARGET=      510.000
        165' D/S FROM D/S FACE OF HOLLAND STREET BRIDGE          SEC. BA
   19.432     31.85     591.75      0.00       0 00     592.26      0.52       0.34       0.02     590.00
 68000.0       0 0    68000.0       0 0        0.0    11790.7       0.0    36743 1    2324.7 100000.00
    6.55      0.00       5.77      0.00      0.000      0.025     0.000      0.000     559.90     390.00
0 000150     2577.      2577.     2577.          2          0         0       0 00     510.00     900.00


1490 NH CARD USED
*SECNO 19.462

3470 ENCROACHMENT STATIONS=      730.0    1333.0  TYPE=      1  TARGET=      603.000
    19 462     30.98     591.88      0.00       0.00     592 30      0.41       0.02       0.01     582.80
 68000.0       0.0    68000.0       0.0        0.0    13182.7       0.0    36790 4    2326.8 100000.00
    6.56      0 00       5.16      0.00      0.000      0.025     0.000      0.000     560.90     730 00
0.000125      165.       165.      165.          2          0         0       0.00     575.83    1305.83


CCHV=    0.100 CEHV=    0.200
*SECNO 19.463

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=   601 10 MAX ELLC=   600.40


3470 ENCROACHMENT STATIONS=      730.0    1333.0  TYPE=      1  TARGET=      603.000
         D/S FACE OF HOLLAND STREET BRIDGE          SEC  BB
   19.463     30.96     591.86      0.00       0.00     592.30      0.45       0.00       0.01     582.80
 68000.0       0.0    68000 0       0.0        0.0    12675.3       0 0    36790.7    2326.8 100000.00
    6 56      0.00       5.36      0.00      0.000      0.025     0 000      0.000     560 90     730.00
0.000215        1.         1.        1.          2          0         0       0 00     555.70    1305.70
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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 19.476

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=   601.10 MAX ELLC=   600.40


3470 ENCROACHMENT STATIONS=      730.0    1333 0  TYPE=      1  TARGET=      603.000
    19.476     30.97    591.87      0.00      0.00    592.32      0.45      0.01      0.00    582.80
   68000.0      0.0   68000.0       0.0       0.0   12681.7       0.0   36810.5    2327.7 100000.00
      6.56     0 00      5.36      0 00     0.000     0.025     0.000     0.000    560.90    730.00
  0.000215      68.       68.       68.         0         0         0      0.00    555.75   1305.75


*SECNO 19.477

3470 ENCROACHMENT STATIONS=      730.0    1333 0  TYPE=      1  TARGET=      603.000
    19.477     31 01    591.91      0.00      0.00    592.32      0.41      0.00      0.00    582.80
   68000.0      0.0   68000.0       0.0       0.0   13197.7       0.0   36810.8    2327.7 100000 00
      6.56     0 00      5.15      0 00     0.000     0.025     0.000     0.000    560.90    730.00
  0.000122       1.        1.         1         2         0         0      0.00    575.95   1305 95


1490 NH CARD USED
*SECNO 20.115

3470 ENCROACHMENT STATIONS=      386.0     910.0  TYPE=      1  TARGET=      524.000
    20.115     35.29    592.29      0.00      0.00    592.75      0.47      0.42      0.01    592.90
   68000.0      0.0   68000 0       0.0       0.0   12421.9       0.0   37804.5    2369 9 100000 00
      6.73     0 00      5.47      0.00     0.000     0.025     0.000     0.000    557.00    396.83
  0.000125     3379.     3379.     3379.         2         0         0      0 00    513.17    910.00


CCHV=    0.100 CEHV=    0.200
*SECNO 20.116

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.65
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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       EI MIN    SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=      386.0     910.0  TYPE=      1  TARGET=      524.000
        D/S FACE OF COURT STREET BRIDGE        SEC. BC
    20 116     35.17    592.17      0.00      0.00    592.78      0.61      0.00      0.03    615 80
   68000.0       0.0   68000.0       0.0       0.0   10834.7       0.0   37804 7    2369.9 100000.00
      6.73      0.00      6.28      0.00     0.000     0 025     0.000     0.000    557.00    398.80
  0.000298        1.        1.        1.         2         0         0      0.00    449.20    910 00

*SECNO 20.128

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      386.0     910.0  TYPE=      1  TARGET=      524.000
    20 128     35 19    592.19      0.00      0 00    592.80      0.61      0.02      0.00    615.80
   68000.0       0.0   68000.0       0.0       0.0   10840.4       0.0   37819.7    2370.6 100000.00
      6.74      0 00      6 27      0.00     0.000     0.025     0.000     0.000    557.00    398.59
  0.000298       60.       60.       60.         0         0         0      0.00    449.41    910 00

*SECNO 20.129

3302 WARNING·  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.52


3470 ENCROACHMENT STATIONS=      386.0     910.0  TYPE=      1  TARGET=      524.000
    20.129     35.35    592.35      0.00      0.00    592 81      0.46      0.00      0.01    592.90
   68000.0       0.0   68000 0       0.0       0.0   12455.3       0.0   37819.9    2370.6 100000.00
      6.74      0 00      5.46      0.00     0.000     0.025     0.000     0.000    557.00    395.74
  0.000130        1.        1.        1.         2         0         0      0.00    514 26    910.00


1490 NH CARD USED
*SECNO 20.287
3280 CROSS SECTION     20.29 EXTENDED      1 00 FEET


3470 ENCROACHMENT STATIONS=      120.0     810 0  TYPE=      1  TARGET=      690.000
        840' U/S FROM U/S FACE OF COURT STREET BRIDGE     SEC. BD
    20.287     26 70    592 60      0.00      0.00    592.92      0.32      0.10      0.01    590.00
   68000.0       0.0   68000.0       0.0       0.0   15025.8       0.0   38084.6    2382.2 100000 00
      6.79      0.00      4.53      0.00     0.000     0.025     0.000     0.000    565.90    120.00
  0.000100      839.      839.      839         2         0         0      0.00    690.00    810.00
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         GLOB      GCH       GROB      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

1490 NH CARD USED
*SECNO 20.513

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      601.00 ELREA=      601.00

  20.513     28.08    592.68      0.00      0.00    593.06      0.38      0.13      0.01    600.80
68000.0       0.0   68000.0       0.0       0.0   13758.7       0.0   38480.7    2400.2    600.80
    6.86      0.00      4.94      0.00     0.000     0.025     0.000     0.000    564.60    736.62
0.000115    1199.      1199      1199         2         0         0      0.00    619.47   1356.09

CCHV=    0.100 CEHV=    0.200
*SECNO 20.514

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.69

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      601.00 ELREA=      601.00

        D/S FACE OF RUST ROAD BRIDGE        SEC. BE
  20.514     28.06    592.66      0.00      0.00    593.07      0.41      0.00      0.01    600.80
68000.0       0.0   68000.0       0.0       0.0   13187.5       0.0   38481.1    2400.2    600.80
    6.86      0.00      5.16      0.00     0.000     0.025     0.000     0.000    564.60    738.54
0.000240      1.         1        1.         2         0         0      0.00    595.33   1357.87

*SECNO 20.527

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      601.00 ELREA=      601.00

  20.527     28.08    592.68      0.00      0.00    593.09      0.41      0.02      0.00    600.80
68000.0       0.0   68000.0       0.0       0.0   13194.9       0.0   38502.2    2401.2    600.80
    6.86      0.00      5.15      0.00     0.000     0.025     0.000     0.000    564.60    738.51
0.000240     70.        70       70.         0         0         0      0.00    595.39   1357.91
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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         GLOB      QCH       GROB      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 20.528

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.45

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       601.00 ELREA=       601.00

  20 528     28.11     592.71      0.00      0.00    593.09      0.38      0.00      0.00    600.80
 68000.0      0 0    68000 0       0.0       0.0   13776.2       0.0   38502.6    2401.2    600.80
    6.86     0.00      4.94      0.00     0.000     0.025     0.000     0.000    564.60    736 56
0.000115        1        1.         1         2         0         0      0.00    619.60   1356.16

1490 NH CARD USED
*SECNO 21.059

3470 ENCROACHMENT STATIONS=     1615.0    2220.0  TYPE=       1  TARGET=       605.000
         180' D/S FROM D/S FACE OF CENTER STREET BRIDGE    SEC.  BF
  21 059     28 12     593.02      0.00      0.00    593.42      0.40      0.32      0.00    593.30
 68000.0       0.0    68000.0       0 0       0.0   13464.5       0.0   39379.3    2440.4 100000.00
    7.01     0.00      5.05      0 00     0.000     0.025     0.000     0.000    564 90   1615.32
0.000116    2804.     2804.     2804         2         0         0      0.00    598 93   2214.25

1490 NH CARD USED
*SECNO 21.092

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00

  21 092     29 44     593.14      0 00      0.00    593.45      0.30      0.02      0.01    601.20
 68000.0       0.0    68000 0       0.0       0.0   15419.6       0.0   39438.7    2443.2    607.60
    7.03     0.00      4.41      0 00     0.000     0.025     0.000     0.000    563.70   1165.00
0.000108    179.      179.      179.         2         0         0      0.00    781.74   1946.74

CCHV=    0 100 CEHV=    0.200
*SECNO 21.093

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00
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        D/S FACE OF CENTER STREET BRIDGE        SEC. BG
   21.093     29.43    593.13      0.00      0.00    593.45      0.32      0.00      0.00    601.20
  68000.0       0.0   68000.0       0.0       0.0   15077.3       0.0   39439.0    2443.2    607.60
     7.03      0.00      4.51      0.00     0.000     0.025     0.000     0.000    563.70   1165.00
 0.000159        1.        1.        1.         1         0         0      0.00    763.72   1946.72

*SECNO 21.108

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00

   21.108     29.45    593.15      0.00      0.00    593.46      0.32      0.01      0.00    601.20
  68000.0       0.0   68000.0       0.0       0.0   15081.2       0.0   39466.7    2444.6    607.60
     7.03      0.00      4.51      0.00     0.000     0.025     0.000     0.000    563.70   1165.00
 0.000159       80.       80.       80.         0         0         0      0.00    763.74   1946.74

*SECNO 21.109

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00

   21.109     29.46    593.16      0.00      0.00    593.46      0.30      0.00      0.00    601.20
  68000.0       0.0   68000.0       0.0       0.0   15427.1       0.0   39467.1    2444.7    607.60
     7.03      0.00      4.41      0.00     0.000     0.025     0.000     0.000    563.70   1165.00
 0.000107        1.        1.         1         1         0         0      0.00    781.77   1946.77

CCHV=    0.100 CEHV=    0.200
*SECNO 21.722
3280 CROSS SECTION     21.72 EXTENDED      2.59 FEET

3470 ENCROACHMENT STATIONS=      530.0    2300.0  TYPE=      1  TARGET=     1770.000
        3240' U/S FROM U/S FACE OF CENTER STREET BRIDGE   SEC. BH
   21.722     28.29    593.59      0.00      0.00    593.73      0.14      0.25      0.02    589.00
  68000.0   26928.2   41071.8       0.0   13187.8   11640.7       0.0   40963.7    2539.5 100000.00
     7.34      2.04      3.53      0.00     0.027     0.025     0.000     0.000    565.30    530.00
 0.000059      3239     3239.     3239.         0         0         0      0.00   1770.00   2300.00

CCHV=    0.100 CEHV=    0.200
*SECNO 22.186
3280 CROSS SECTION     22.19 EXTENDED     16.47 FEET
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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 = 1.44

INTERSECTION OF TITTABAWASSEE RIVER AND SAGINAW RIVER SEC. BI

22 186	30.47	593.77	0.00	0 00	593.84	0.07	0.10	0.01	591.40
68000.0	25740.8	34406.1	7853.1	18536.1	13449.4	6591.6	42746.8	2678.9	585.40
7.68	1.39	2.56	1.19	0.027	0.025	0.027	0.000	563.30	0.00
0 000028	2450.	2450.	2450.	2	0	0	0.00	3187.02	3187.02

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: 100 YR NATURAL

00BREAK00

THIS RUN EXECUTED 19AUG91 14:40:30

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**************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED JUN  1990

  ERROR CORR -  01,02,03,04
  MODIFICATION -
**************************************************

T1      SAGINAW RIVER BASIN FIS RESTUDY
T2      SAGINAW RIVER
T3      100-YEAR FLOOD

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0         2         0         0         0         0         0         0     579 34        0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1         0        -1                            .9

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150

J6  IHLEG     ICOPY     SUBDIV    STRTDS    RMILE

                        100

QT        2     66100     78600
NC     .035      .035      .028        .1        .2         0         0         0         0         0
NH     3 0        035       655      .023      1396      .035      1445         0         0         0
          120' U/S FROM THE MOUTH OF SAGINAW RIVER        SEC.  A
X1      023        73        44      1396       120       120       120
GR    584.3         0     584.5        17     582.1        44    581 8        45     581.2        50
GR    580.9        55     580.3        85     579.6        95    578.9       105     578.4       115
GR    578.4       125     577.9       135     577.9       215    577.4       225     577.4       245
GR    576.9       255     576.9       435     576.4       445    576.9       455     576 9       485
GR    576.4       495     576.4       505     575 9       515    575.9       565     575 4       575
GR    575.4       585     574.9       595     575.4       605    574.9       615     574.9       655
GR    572.9       695     570.9       715     568.9       725    565.9       735     563 9       745
GR    562.9       755     562.9       765     560.9       785    559.4       795     558.9       805
GR    558.9       815     555.9       875     555.9       885    554.9       905     554.9       915
GR    553.9       935     553.9       945     552.9       965    552.9       985     553.9       995
GR    554.9      1015     554.9      1035     555.9      1045    555.9      1075     556.9      1085
GR    556.9      1165     558.4      1175     558.9      1185    558.9      1225     557.9      1245
GR    557.9      1255     558.4      1265     557 4      1275    556.9      1285     556.9      1305
GR    557.9      1315     557.9      1335     557.4      1345    556.9      1365     555.9      1385
GR    555.9      1395     584.7      1396     584.3      1445
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NH	3.0	.035	610	.026	1401	.035	1500			
	1770' U/S FROM THE MOUTH OF SAGINAW RIVER					SEC. B				
X1	.335	74	349	1401	1650	1650	1650			
GR	583.6	0	583.6	100	586.2	225	583.8	335	582.0	349
GR	581.7	350	580.8	360	580.8	370	579.8	380	578.8	400
GR	578.8	450	577.8	470	577.8	480	576.8	500	576.8	510
GR	576.3	520	576.3	530	575.8	540	575.8	560	575.3	570
GR	575.3	610	574.8	620	574.8	640	574.3	650	574.3	680
GR	573.8	690	573.8	710	572.8	730	572.8	740	571.8	760
GR	571.8	770	570.8	780	570.8	790	567.8	820	565.8	830
GR	563.8	850	561.8	860	559.8	870	558.3	880	557.8	890
GR	556.8	900	556.8	910	555.8	920	554.8	940	554.8	950
GR	552.8	970	551.8	990	551.8	1000	550.8	1020	550.8	1040
GR	551.3	1050	551.3	1060	551.8	1070	551.8	1090	552.8	1100
GR	552.8	1110	553.8	1120	553.8	1130	555.8	1140	557.8	1160
GR	558.8	1170	558.8	1200	559.8	1210	559.8	1320	561.8	1340
GR	561.8	1350	562.8	1360	562.8	1370	562.3	1380	562.3	1390
GR	561.8	1395	562.8	1400	585.1	1401	584.9	1500		

NH	3.0	035	630	.022	1490	.035	2000			
	6280' U/S FROM THE MOUTH OF SAGINAW RIVER					SEC. C				
X1	1.189	95	299	1911	4510	4510	4510			
GR	583.4	0	582.5	100	583.3	200	583.3	290	582.5	299
GR	582.2	300	581.3	305	580.8	310	580.3	320	579.3	330
GR	578.8	340	577.8	350	577.3	360	576.3	370	575.8	380
GR	575.8	400	576.3	410	575.8	420	575.8	430	575.3	440
GR	574.8	630	573.3	660	571.8	670	570.3	680	569.3	690
GR	567.3	700	566.3	710	564.3	720	557.3	790	555.8	800
GR	555.8	810	555.3	820	555.3	830	554.3	840	554.3	870
GR	553.8	880	553.3	890	553.3	970	553.8	980	558.3	990
GR	560.3	1000	563.3	1010	563.3	1040	564.3	1050	564.3	1090
GR	565.3	1100	565.3	1120	566.3	1130	567.3	1190	567.8	1200
GR	567.8	1210	568.8	1230	568.8	1240	569.8	1260	569.8	1270
GR	570.3	1280	569.3	1300	569.3	1330	569.8	1340	569.8	1350
GR	571.3	1380	571.3	1390	573.3	1430	573.3	1440	574.3	1450
GR	574.3	1460	574.8	1470	574.8	1480	575.3	1490	575.3	1500
GR	575.8	1510	575.8	1530	576.3	1540	576.3	1570	576.8	1580
GR	576.8	1600	577.3	1610	577.3	1640	577.8	1650	577.8	1660
GR	578.3	1670	578.3	1740	579.3	1760	579.3	1810	580.3	1830
GR	580.5	1840	580.8	1850	580.8	1860	581.0	1870	581.3	1880
GR	581.3	1890	581.8	1900	582.2	1910	582.3	1911	582.5	2000

NH	3.0	.035	490	.025	980	.035	1200			
	9300' U/S FROM THE MOUTH OF SAGINAW RIVER					SEC. D				
X1	1.761	62	297	1002	3020	3020	3020			
GR	586.6	0	584.6	100	584.2	200	584.8	297	582.2	300
GR	580.5	310	579.8	320	577.8	360	577.8	370	577.3	380
GR	577.3	410	576.8	420	576.8	450	576.3	460	576.3	470
GR	575.8	480	575.8	490	573.8	530	572.8	540	570.8	550
GR	569.8	560	569.3	570	567.3	580	566.3	590	564.3	600
GR	562.3	620	560.3	630	558.3	640	557.3	650	555.3	660
GR	553.3	670	551.3	680	549.3	700	549.3	710	550.3	720
GR	548.3	730	548.3	740	547.8	750	546.3	760	546.3	770

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GR    546.8      780     547.3      790     547.3      830     548.3      840     547 8      850
GR    548.8      860     548.8      870     549.3      880     549.3      890     550.3      910
GR    550.3      930     551 3      940     551.3      950     554.8      960     557.3      970
GR    577.3      980     578.8      990     580 8      995     582.2     1000     585.6     1002
GR    587 1     1100     589.7     1200

NH      3.0      035       570      .027      1220      035      1400
         3090' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE        SEC. E
X1    2.223       73       499      1281      2440     2440      2440
GR    586.1        0     586.5       100     586.1      200     585.7      300     586.1      400
GR    585.3      485     583.3       499     581.9      500     581.5      505     581.0      510
GR    578.5      520     577.0       530     576.0      550     576.0      570     574.5      600
GR    574.5      610     574.0       620     573.0      630     572.5      640     569.5      670
GR    569.0      680     565.0       720     563.0      730     563.5      740     563.0      750
GR    562.0      760     562.0       770     561.0      780     561.0      790     559.0      810
GR    558.5      820     558.0       830     556 0      850     554.5      860     553.0      870
GR    553.0      880     552.0       890     551.0      900     551.0      910     552.0      930
GR    552.0      940     551.5       950     551.0      960     551.0      970     551.5      980
GR    551.5     1000     551.0      1010     551.0     1020     552 0     1040     554.0     1060
GR    554.0     1070     555.0      1080     555.0     1090     556.0     1100     556.5     1110
GR    557.5     1120     558.0      1130     559.0     1140     562.0     1150     564.0     1160
GR    565.0     1170     571.0      1180     572.0     1190     575.0     1210     576.0     1220
GR    576.0     1240     577.5      1270     578 5     1280     582.2     1281     583.4     1290
GR    585 0     1300     586.9      1330     587.0     1400

NH      3.0      035       130      .027       800      .035      1000
         1230' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE        SEC. F
X1    2.576       55        64       801      1860     1860      1860
GR    584.6        0     584.8        60     582.6       64     581 8       65     579.9       80
GR    578.4       90     577.9       100     577.4      110     577.4      130     575.9      160
GR    573.9      170     572.9       180     569 9      190     568.9      200     566.9      210
GR    563.9      220     557.9       250     555.9      270     555 4      280     554.4      290
GR    553.4      310     554.9       320     554 9      340     555.4      350     554.9      360
GR    554.9      380     552.9       420     552.9      450     550.9      470     551.4      480
GR    550.9      490     549.9       500     549.4      510     549.9      520     549.4      530
GR    550.4      540     550.4       550     549.9      560     549.9      610     550 9      620
GR    550.9      630     552 9       650     552.9      660     554.9      670     562.9      750
GR    564.9      760     567.9       770     570 9      780     574.9      790     580.9      779
GR    581.8      800     582.2       801     582.9      810     585.4      900     585.7     1000

NC      035      .035      .032        .1        .2
         D/S FACE OF D&M RAILROAD BRIDGE        SEC  G
X1    2.808       88       400      1083      1232     1232      1232
GR    589.4        0     590.1       100     591.0      200     591.9      300     592.6      400
GR    580.9      400     580.4       405     579.4      410     578 4      420     576.4      430
GR    575.4      440     573.9       450     571.9      460     570.4      470     567.9      480
GR    568.9      490     569.9       500     570.9      505     567.7      513     564.9      520
GR    560.9      530     560.4       540     561 4      550     563.4      560     563.9      570
GR    561 4      580     560 9       590     559.9      600     566.4      610     570.7      616
GR    572.9      619     568.5       627     566.9      630     558.9      640     555.9      650
GR    557.9      660     556.4       670     557.9      680     556.9      690     556.9      700
GR    558.4      710     561.9       720     565.9      729     563.6      732     557.4      740
GR    555.9      742     554.4       750     552.4      760     550.9      770     548.9      790
GR    549 9      800     549.9       810     550.4      820     554.4      830     551.6      838
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GR	551.0	842	551.9	870	551.6	874	550.9	880	549.4	890
GR	550.4	900	549.4	910	549.4	920	548.4	930	547.9	940
GR	548.4	950	550.4	960	553.1	969	553.9	972	555.7	980
GR	556.8	985	557.9	990	554.4	1000	554.4	1010	555.4	1020
GR	556.9	1030	557.9	1040	564.4	1050	567.9	1060	575.9	1070
GR	577.4	1080	578.6	1083	592.5	1083	592.5	1100	591.5	1200
GR	590.1	1300	589.0	1400	588.0	1500				
NC	.035	.035	.031	.1	.2					
X1	2.809	95	400	1083	1	1	1			
GR	589.4	0	590.1	100	591.0	200	591.9	300	592.6	400
GR	580.9	400	580.4	405	579.4	410	578.4	420	576.4	430
GR	575.4	440	573.9	450	571.9	460	570.4	470	567.9	480
GR	568.9	490	569.9	500	570.9	505	592.5	505	592.5	513
GR	567.7	513	564.9	520	560.9	530	560.4	540	561.4	550
GR	563.4	560	563.9	570	561.4	580	560.9	590	559.9	600
GR	566.4	610	570.7	616	572.9	619	592.4	619	592.4	627
GR	568.5	627	566.9	630	558.9	640	555.9	650	557.9	660
GR	556.4	670	557.9	680	556.9	690	556.9	700	558.4	710
GR	561.9	720	565.9	729	563.6	732	592.3	732	592.3	740
GR	557.4	740	555.9	742	554.4	750	552.4	760	550.9	770
GR	548.9	790	549.9	800	549.9	810	550.4	820	554.4	830
GR	551.6	838	551.0	842	592.4	842	592.4	870	551.9	870
GR	551.6	874	550.9	880	549.4	890	550.4	900	549.4	910
GR	549.4	920	548.4	930	547.9	940	548.4	950	550.4	960
GR	553.1	969	553.9	972	592.5	972	592.5	980	555.7	980
GR	556.8	985	557.9	990	554.4	1000	554.4	1010	555.4	1020
GR	556.9	1030	557.9	1040	564.4	1050	567.9	1060	575.9	1070
GR	577.4	1080	578.6	1083	592.5	1083	592.5	1100	591.5	1200
X1	2.813	0	0	0	17	17	17			
NC	.035	.035	.032	.1	.2					
X1	2.814	88	400	1083	1	1	1			
GR	589.4	0	590.1	100	591.0	200	591.9	300	592.6	400
GR	580.9	400	580.4	405	579.4	410	578.4	420	576.4	430
GR	575.4	440	573.9	450	571.9	460	570.4	470	567.9	480
GR	568.9	490	569.9	500	570.9	505	567.7	513	564.9	520
GR	560.9	530	560.4	540	561.4	550	563.4	560	563.9	570
GR	561.4	580	560.9	590	559.9	600	566.4	610	570.7	616
GR	572.9	619	568.5	627	566.9	630	558.9	640	555.9	650
GR	557.9	660	556.4	670	557.9	680	556.9	690	556.9	700
GR	558.4	710	561.9	720	565.9	729	563.6	732	557.4	740
GR	555.9	742	554.4	750	552.4	760	550.9	770	548.9	790
GR	549.9	800	549.9	810	550.4	820	554.4	830	551.6	838
GR	551.0	842	551.9	870	551.6	874	550.9	880	549.4	890
GR	550.4	900	549.4	910	549.4	920	548.4	930	547.9	940
GR	548.4	950	550.4	960	553.1	969	553.9	972	555.7	980
GR	556.8	985	557.9	990	554.4	1000	554.4	1010	555.4	1020
GR	556.9	1030	557.9	1040	564.4	1050	567.9	1060	575.9	1070
GR	577.4	1080	578.6	1083	592.5	1083	592.5	1100	591.5	1200
GR	590.1	1300	589.0	1400	588.0	1500				

NH	3.0	.035	115	.027	1065	.035	1625			
	710' U/S FROM U/S FACE OF D&M RAILROAD BRIDGE					SEC. H				
X1	2.947	85	35	1115	709	709	709			
GR	589.2	0	584.0	10	583.2	25	581.8	35	580.3	84
GR	579.3	95	578 3	115	577.3	125	575.3	165	575.3	175
GR	573.8	205	572.8	215	572.3	225	571.3	235	569.8	265
GR	569 8	295	569.3	305	569.3	315	568.8	325	568.8	345
GR	567.8	365	567.8	375	566.8	385	565.8	405	564.8	415
GR	564.3	425	564.3	435	563.8	445	562.8	455	562 3	465
GR	562.3	475	561.8	485	561.8	505	556.8	555	555.3	565
GR	554.3	575	553.8	585	553.8	595	553.3	605	552.3	615
GR	551.8	625	551.8	655	552.8	665	552.8	675	553.8	685
GR	554.3	695	554.3	715	553.8	725	553.8	745	554.3	755
GR	553.8	765	553.8	785	554.3	795	554.3	815	554.8	825
GR	555.8	835	557.8	845	558.8	855	560.8	865	562.8	875
GR	564.8	895	566.8	905	566.8	915	567.8	925	568 8	945
GR	568.8	955	569.8	975	569.6	985	570.3	995	570.8	1005
GR	572 8	1025	574.3	1035	574.8	1045	576 8	1065	578.3	1075
GR	578.8	1085	579.6	1095	580.1	1105	581.7	1115	585.3	1125
GR	584.3	1225	585 1	1325	587.2	1425	589.5	1525	590.0	1625
NH	3 0	.035	210	.023	900	.035	1560			
	1323' D/S FROM D/S FACE OF BELINDA STREET BRIDGE					SEC. I				
X1	3.350	73	59	1193	2130	2130	2130			
GR	586.5	0	582.4	15	582.1	59	581.5	60	581.1	65
GR	580.6	70	580 1	80	578.1	100	577.1	120	577.1	160
GR	576.6	170	576.6	210	574.6	250	568.6	310	566.6	320
GR	564.6	330	560.6	350	559.6	360	555.6	380	552.6	390
GR	553.1	400	553.6	410	553.6	430	553.1	440	553.1	450
GR	553.6	460	553.1	470	553 1	490	552.6	500	552.6	540
GR	551.6	560	551.6	570	552.6	590	552.1	600	552.6	610
GR	552.6	630	553.6	650	559.6	710	561.1	720	562.6	750
GR	562.6	760	565.6	770	566.6	780	568.6	790	571.6	820
GR	573.1	830	574.1	840	574.6	850	575.6	860	575.6	870
GR	576.1	880	576.1	890	576.6	900	576.6	910	576.1	920
GR	576.6	930	576.6	1000	577.1	1010	577.1	1020	577.6	1030
GR	577.6	1090	578.1	1100	578.1	1140	578.6	1150	578.6	1170
GR	579.8	1180	581.5	1192	581.9	1193	585.0	1213	586.0	1260
GR	586.8	1360	586.6	1460	585.5	1560				
NH	3.0	.035	530	028	1188	.035	1302			
X1	3.600	80	500	1200	1322	1322	1322			
GR	608.9	0	604.7	105	586.9	140	586.7	147	586.6	150
GR	585.2	200	584.5	243	584.4	246	583.5	300	583.3	347
GR	583 3	350	583.1	400	582.9	478	582.9	481	582.9	500
GR	582.2	520	581.0	530	571.0	535	567.9	540	567.0	550
GR	565.0	560	561 5	570	561.0	580	560.6	584	560.2	588
GR	560.0	590	557.0	610	555.0	620	552.0	630	551.0	640
GR	551.0	680	551.2	683	546.4	722	546.0	730	544.0	750
GR	544.5	780	547 0	790	549.0	810	548 5	830	547.5	840
GR	546.0	850	545.0	860	547.0	870	548.0	880	553.0	890
GR	553.2	892	557.7	931	559.0	940	560.5	950	564.5	970
GR	565.0	980	565 0	990	566.0	1000	565.5	1010	567.0	1020

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GR     567.3      1026      567.5      1030      567.5      1040      568.0      1050      569.0      1060
GR     572.0      1070      573 3      1080      574.5      1090      574.0      1100      574.0      1110
GR     574.4      1114      574.7      1117      575.0      1120      575.5      1130      575.5      1140
GR     574.5      1160      575 0      1170      575.0      1180      580.0      1188      581.9      1189
GR     583.4      1200      584.5      1229      584.6      1232      586.2      1263      605.5      1302

NC      .035       .035       .028         1        .2
          D/S FACE OF BELINDA STREET BRIDGE        SEC. J
X1     3.601        95       500      1200         1         1         1
GR     608.9         0     604.7       105     586.9       140     586.7       147     612.1       147
GR     612.1       150     586.6       150     585.2       200     584.5       243     613.1       243
GR     613.1       246     584 4       246     583.5       300     583.3       347     613.6       347
GR     613.7       350     583.3       350     583 1       400     582.9       478     614.1       478
GR     614.1       481     582.9       481     582 9       500     582.2       520     581 0       530
GR     571.0       535     567.9       540     567.0       550     565.0       560     561 5       570
GR     561.0       580     560.6       584     614.4       584     614.4       588     560.2       588
GR     560.0       590     557.0       610     555.0       620     552.0       630     551.0       640
GR     551.0       680     551.2       683     614.7       683     614 9       722     546.4       722
GR     546.0       730     544.0       750     544.5       780     547.0       790     549.0       810
GR     548.5       830     547.5       840     546.0       850     545.0       860     547.0       870
GR     548.0       880     553.0       890     553 2       892     615.1       892     614.9       931
GR     557.7       931     559.0       940     560.5       950     564.5       970     565.0       980
GR     565.0       990     566.0      1000     565.5      1010     567.0      1020     567.3      1026
GR     614.5      1026     614 5      1030     567.5      1030     567.5      1040     568.0      1050
GR     569.0      1060     572.0      1070     573.5      1080     574.5      1090     574.0      1100
GR     574.0      1110     574.4      1114     614.0      1114     614.0      1117     574.7      1117
GR     575.0      1120     575.5      1130     575 5      1140     574.5      1160     575 0      1170
GR     575 0      1180     580.0      1188     581.9      1189     583.4      1200     584.5      1229

X1     3.615         0         0         0      73.5      73.5      73.5

NH       3.0      .035       530      .028      1188      .035      1302
X1     3.616        80       500      1200         1         1         1
GR     608.9         0     604.7       105     586.9       140     586.7       147     586.6       150
GR     585.2       200     584.5       243     584 4       246     583.5       300     583.3       347
GR     583.3       350     583.1       400     582.9       478     582.9       481     582.9       500
GR     582.2       520     581.0       530     571.0       535     567.9       540     567.0       550
GR     565.0       560     561.5       570     561.0       580     560.6       584     560 2       588
GR     560.0       590     557.0       610     555.0       620     552.0       630     551 0       640
GR     551.0       680     551.2       683     546.4       722     546.0       730     544 0       750
GR     544.5       780     547.0       790     549.0       810     548.5       830     547.5       840
GR     546.0       850     545.0       860     547.0       870     548.0       880     553.0       890
GR     553.2       892     557.7       931     559.0       940     560.5       950     564 5       970
GR     565.0       980     565.0       990     566.0      1000     565.5      1010     567.0      1020
GR     567.3      1026     567.5      1030     567.5      1040     568.0      1050     569.0      1060
GR     572.0      1070     573.5      1080     574.5      1090     574.0      1100     574.0      1110
GR     574.4      1114     574.7      1117     575.0      1120     575.5      1130     575 5      1140
GR     574.5      1160     575.0      1170     575.0      1180     580.0      1188     581.9      1189
GR     583 4      1200     584.5      1229     584.6      1232     586.2      1263     605.5      1302
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NH      3.0       .035       400       .028       1142       .035       1400
          163' U/S FROM U/S FACE OF BELINDA STREET BRIDGE      SEC. K
X1    3.646        73       400       1143       162.5      162.5      162.5
GR    585.8         0      585.2       100       586.0       140       583.5       200       583.2       300
GR    583.7       392      581.8       400       571.9       405       570.9       410       567.9       420
GR    566.9       430      562.9       450       555.9       520       554.4       530       553.9       540
GR    552.4       550      551.9       560       550.9       570       550.9       580       549.9       590
GR    550.4       600      551.4       610       551.9       620       551.9       630       552.4       640
GR    553.4       650      553.9       660       553.9       680       553.4       690       551.4       700
GR    549.9       710      549.9       720       548.9       730       548.9       740       549.9       760
GR    549.4       770      549.4       780       549.9       790       550.9       800       555.9       810
GR    558.9       820      558.9       830       560.9       840       561.9       850       561.9       860
GR    562.9       870      563.4       880       562.4       890       563.9       900       563.9       920
GR    565.9       940      569.9       960       572.4       970       573.9       980       573.9       990
GR    574.9      1000      574.9      1010       575.4      1020       576.4      1030       576.4      1050
GR    576.9      1060      576.9      1070       576.4      1080       572.4      1090       571.7      1100
GR    572.9      1110      576.9      1120       579.4      1130       581.8      1142       583.5      1143
GR    586.0      1200      585.8      1300       585.8      1400

NH      3.0       .035       450       .028       1025       .035       1600
X1    3.689        75       400       1025        231        231        231
GR    586.5         0      586.0       100       586.1       200       588.7       300       593.2       400
GR    586.7       400      584.2       410       582.4       418       581.8       422       580.8       430
GR    579.8       440      580.1       450       578.0       460       575.6       463       572.4       467
GR    570.0       470      566.7       480       564.9       490       560.9       510       559.4       520
GR    559.4       530      557.4       550       556.4       570       556.6       580       556.9       590
GR    557.1       594      556.6       602       554.2       608       548.6       618       547.4       620
GR    547.9       630      547.4       640       548.4       650       549.4       660       549.9       670
GR    550.4       680      550.4       700       551.4       710       556.4       714       570.2       725
GR    560.7       751      555.2       756       550.9       760       549.9       770       551.9       780
GR    551.9       790      550.4       800       550.4       810       550.9       820       551.9       830
GR    551.9       840      550.9       850       551.2       856       556.4       865       561.3       871
GR    560.4       880      554.9       890       556.9       910       556.9       920       561.9       930
GR    561.4       940      561.4       950       563.4       990       569.4      1000       573.4      1008
GR    574.6      1012      575.4      1020       576.4      1025       593.9      1025       592.6      1100
GR    592.0      1200      591.5      1300       590.8      1400       590.2      1500       589.7      1500

NC     .035       .035       .028        .1         .2
          395' U/S FROM U/S FACE OF BELINDA STREET BRIDGE      SEC. L
X1    3.690        87       400       1025          1          1          1
GR    586.5         0      586.0       100       586.1       200       588.7       300       593.2       400
GR    586.7       400      584.2       410       582.4       418       593.3       418       593.4       422
GR    581.8       422      580.8       430       579.8       440       580.1       450       578.0       460
GR    575.6       463      593.7       463       593.7       467       572.4       467       570.0       470
GR    566.7       480      564.9       490       560.9       510       559.4       520       559.4       530
GR    557.4       550      556.4       570       556.6       580       556.9       590       557.1       594
GR    556.6       602      593.8       602       593.8       608       554.2       608       548.6       618
GR    547.4       620      547.9       630       547.4       640       548.4       650       549.4       660
GR    549.9       670      550.4       680       550.4       700       551.4       710       556.4       714
GR    570.2       725      593.7       725       593.7       751       560.7       751       555.2       756
GR    550.9       760      549.9       770       551.9       780       551.9       790       550.4       800
GR    550.4       810      550.9       820       551.9       830       551.9       840       550.9       850
GR    551.2       856      556.4       865       593.7       865       593.7       871       561.3       871
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GR    560.4      880      554.9      890      556.9      910      556.9      920      561.9      930
GR    561.4      940      561.4      950      563.4      990      569.4     1000      573.4     1008
GR    593.9     1008      593.9     1012      574.6     1012      575.4     1020      576.4     1025
GR    593.9     1025      592.6     1100      592.0     1200      591.5     1300      590 8     1400
GR    590.2     1500      589.7     1600

X1    3.697        0         0        0       35.5     35.5       35 5

X1    3.698       75       400     1025          1        1          1
GR    586 5        0      586.0      100      586.1      200      588 7      300      593.2      400
GR    586 7      400      584.2      410      582.4      418      581.8      422      580.8      430
GR    579.8      440      580.1      450      578.0      460      575.6      463      572.4      467
GR    570.0      470      566.7      480      564.9      490      560.9      510      559.4      520
GR    559.4      530      557.4      550      556 4      570      556.6      580      556.9      590
GR    557.1      594      556.6      602      554.2      608      548.6      618      547.4      620
GR    547.9      630      547 4      640      548.4      650      549.4      660      549.9      670
GR    550.4      680      550.4      700      551.4      710      556.4      714      570.2      725
GR    560.7      751      555.2      756      550.9      760      549.9      770      551.9      780
GR    551.9      790      550.4      800      550 4      810      550.9      820      551.9      830
GR    551.9      840      550.9      850      551.2      856      556.4      865      561.3      871
GR    560.4      880      554.9      890      556.9      910      556.9      920      561.9      930
GR    561 4      940      561.4      950      563.4      990      569.4     1000      573.4     1008
GR    574.6     1012      575.4     1020      576 4     1025      593.9     1025      592.6     1100
GR    592.0     1200      591.5     1300      590.8     1400      590 2     1500      589.7     1600

NH      3.0     .035       310      .028      1060      .035       1100
          1650' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD        SEC  M
X1    4.366       71       298     1065      3550      3550       3550
GR    584.2        0      583.9      100      583.3      200      583.7      298      582.1      300
GR    580.7      305      580.0      310      578.7      320      577.2      330      575 2      340
GR    574.7      350      575.2      360      575.2      370      574.2      390      572.7      400
GR    572.2      410      570.7      420      568.2      430      568.2      440      565.7      450
GR    564.7      460      563.2      470      560.7      480      559.2      490      557 2      510
GR    556.2      530      557.2      540      556.2      560      554.2      570      554.2      580
GR    555.2      590      555.2      600      553.2      610      552.2      630      549.2      660
GR    551 2      670      551.2      680      550.2      690      550.2      700      548.2      710
GR    550.2      730      551.2      740      551.2      760      552.2      770      552.2      790
GR    554.2      810      554 2      820      556.2      840      556.2      850      558.2      870
GR    558.2      880      560.2      890      562.2      910      561.7      920      561.7      930
GR    562.2      940      562.2      960      562.7      970      566.2      980      568.2      990
GR    572 2     1000      574.2     1010      575.2     1020      576.2     1030      577.9     1040
GR    579.2     1050      582.1     1060      583.4     1065      584.6     1075      586.6     1090
GR    588.0     1100

NC      035      035      .028       .1        .2
X1    4 677       67       300      957      1649      1649       1649
GR    591.4        0      591 4      100      591 7      200      592.2      300      573.5      300
GR    571.5      310      570.0      320      569.5      330      568.0      360      568.0      370
GR    567.0      390      562.0      440      560.6      447      560.0      450      560.0      460
GR    559.0      470      557.0      480      557.0      510      558.0      520      558 0      530
GR    560.0      550      560 0      560      558 0      580      557.2      588      556.5      595
GR    556.0      600      554 5      630      555 0      640      555.0      660      553.0      680
GR    553.0      690      545.5      700      552.5      704      563.0      710      563.5      720
GR    557.5      728      555.7      731      553 0      740      553.0      750      554.0      760
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GR    553 0      770      554.0      780      554.0      790      555.0      800      555.5      810
GR    555.5      820      557.0      830      558.2      836      559.0      840      559.2      843
GR    561.0      850      560.0      860      561.0      870      562.0      890      564.0      900
GR    566.0      920      568.0      930      571 0      940      575.0      950      576.0      957
GR    592.5      957      592 2     1000      591.2     1100      589.9     1200      588.9     1300
GR    588.2     1400      588.0     1500

        D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1        SEC.  N
X1    4.678       72       300       957        1         1         1
GR    591.4        0      591.4      100      591.7      200      592.2      300      573.5      300
GR    571.5      310      570 0      320      569.5      330      568.0      360      568.0      370
GR    567.0      390      562.0      440      592.5      440      592.5      447      560 6      447
GR    560.0      450      560.0      460      559.0      470      557.0      480      557.0      510
GR    558.0      520      558.0      530      560.0      550      560.0      560      558.0      580
GR    557.2      588      593 8      588      593.9      595      556.5      595      556.0      600
GR    554.5      630      555.0      640      555.0      660      553.0      680      553.0      690
GR    545.5      700      552.5      704      593.2      704      593.2      728      557 5      728
GR    555 7      731      553.0      740      553.0      750      554.0      760      553.0      770
GR    554.0      780      554 0      790      555.0      800      555 5      810      555.5      820
GR    557.0      830      558.2      836      593 9      836      593.8      843      559.2      843
GR    561.0      850      560.0      860      561.0      870      562.0      890      564.0      900
GR    566.0      920      568.0      930      571.0      940      575.0      950      576.0      957
GR    592.5      957      592.2     1000      591.2     1100      589.9     1200      588.9     1300
GR    588.2     1400      588.0     1500

X1    4.682        0        0         0         20        20        20

X1    4.683       67       300       957        1         1         1
GR    591.4        0      591.4      100      591.7      200      592.2      300      573.5      300
GR    571.5      310      570.0      320      569.5      330      568.0      360      568.0      370
GR    567.0      390      562 0      440      560 6      447      560.0      450      560 0      460
GR    559.0      470      557.0      480      557 0      510      558.0      520      558.0      530
GR    560.0      550      560.0      560      558.0      580      557.2      588      556.5      595
GR    556.0      600      554.5      630      555.0      640      555.0      660      553.0      680
GR    553.0      690      545 5      700      552.5      704      563.0      710      563.5      720
GR    557.5      728      555.7      731      553.0      740      553.0      750      554.0      760
GR    553.0      770      554.0      780      554.0      790      555.0      800      555.5      810
GR    555.5      820      557 0      830      558.2      836      559.0      840      559.2      843
GR    561.0      850      560.0      860      561.0      870      562.0      890      564 0      900
GR    566.0      920      568 0      930      571.0      940      575.0      950      576.0      957
GR    592.5      957      592.2     1000      591.2     1100      589.9     1200      588 9     1300
GR    588.2     1400      588 0     1500

        810' U/S FROM U/S FACE OF PENN CENTRAL RAILRAD BRIDGE #1        SEC.  0
X1    4.835       64       124       946       809       809       809
GR    586.7        0      586.2       25      585.3       70      582.7       83      584.0      111
GR    582.2      124      581.9      125      580.9      130      580.7      135      579.5      145
GR    579.0      155      576.0      185      575.0      205      574.0      215      572.0      225
GR    571.5      235      571.5      255      571.0      265      572.0      285      572.0      295
GR    570.0      335      569.0      345      565.0      365      559.0      385      557.0      395
GR    556.5      405      557.0      415      556.0      425      553 0      445      552.0      455
GR    552.0      465      551.0      475      552.0      485      552.0      495      553.0      505
GR    553.0      515      554.0      525      554.0      535      553.5      545      554.0      555
GR    554.0      585      554.5      595      554.0      605      554 0      625      555.0      645
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GR    555.0     725     555.5     735     555.5     755     555.0     765     555.5     775
GR    555.5     785     557.0     815     558.0     825     560.0     835     565.0     885
GR    566.0     905     567 0     915     571.0     925     575.5     935     579.5     945
GR    582.8     946     584.5     950     584.7    1025     586.3    1125

NC     .035     035      .029      .1       .2
X1    4.967      89       100     907      702     702      702
GR    590.9       0     595.2     100     577 7     100     576.7     105     574.2     110
GR    572.7     120     571.2     130     570 7     140     569.2     150     568.2     160
GR    568.2     170     566.2     180     565.2     190     566.2     200     565.2     210
GR    565.2     220     565.7     230     565.1     236     564.7     240     564 6     243
GR    564.2     250     564.2     260     562.2     270     562.2     280     560.2     300
GR    560.2     310     559.2     320     560.2     330     559.7     340     560.7     350
GR    561.2     360     560.2     370     559.8     379     559.7     380     558.2     386
GR    557.2     390     556 2     400     554.2     410     553.2     420     553.2     440
GR    555.2     460     560 2     470     564.7     479     565.2     480     567 2     490
GR    566 2     500     564.2     510     560 2     520     557.8     526     556.2     530
GR    554.2     540     554.2     570     553.2     580     555 2     600     557.2     610
GR    560.2     620     560.5     621     562.6     628     563.2     630     563.2     650
GR    565.2     660     566.2     670     568.2     680     567.7     690     568.2     700
GR    567.2     710     565.2     720     567 2     730     568.2     740     569.2     760
GR    569.2     765     569.2     770     569.0     772     568.2     780     567.2     790
GR    565.2     800     565.2     810     564.7     820     566.2     830     567.2     840
GR    566.7     850     568.7     860     570 2     870     572.2     880     576.2     890
GR    577.7     900     580.2     907     596.6     907     594.0    1000

          1513' U/S FROM U/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1      SEC.P
X1    4.968      91       100     907       1       1       1
GR    590.9       0     595.2     100     577 7     100     576.7     105     574 2     110
GR    572.7     120     571.2     130     570.7     140     569.2     150     568 2     160
GR    568.2     170     566.2     180     565.2     190     566.2     200     565.2     210
GR    565.2     220     565.7     230     565.1     236     598.9     236     598.8     243
GR    564.6     243     564.2     250     564.2     260     562.2     270     562.2     280
GR    560.2     300     560.2     310     559.2     320     560.2     330     559.7     340
GR    560.7     350     561.2     360     560.2     370     559.8     379     601.4     379
GR    601.4     386     558.2     386     557.2     390     556.2     400     554.2     410
GR    553.2     420     553.2     440     555.2     460     560 2     470     564.7     479
GR    601.5     479     601.5     526     557.8     526     556.2     530     554 2     540
GR    554.2     570     553.2     580     555.2     600     557.2     610     560 2     620
GR    560.5     621     601.4     621     601.3     628     562.6     628     563.2     630
GR    563.2     650     565.2     660     566.2     670     568.2     680     567.7     690
GR    568.2     700     567.2     710     565.2     720     567.2     730     568.2     740
GR    569.2     760     569 2     765     599.1     765     599.0     772     569.0     772
GR    568.2     780     567.2     790     565.2     800     565.2     810     564.7     820
GR    566.2     830     567.2     840     566.7     850     568.7     860     570.2     870
GR    572.2     880     576.2     890     577.7     900     580.2     907     596.6     907
GR    594.0    1000

X1    4 975       0       0       0      34      34      34
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X1	4.976	89	100	907	1	1	1			
GR	590.9	0	595.2	100	577.7	100	576.7	105	574.2	110
GR	572.7	120	571.2	130	570.7	140	569.2	150	568.2	160
GR	568.2	170	566.2	180	565.2	190	566.2	200	565.2	210
GR	565.2	220	565.7	230	565.1	236	564.7	240	564.6	243
GR	564.2	250	564.2	260	562.2	270	562.2	280	560.2	300
GR	560.2	310	559.2	320	560.2	330	559.7	340	560.7	350
GR	561.2	360	560.2	370	559.8	379	559.7	380	558.2	386
GR	557.2	390	556.2	400	554.2	410	553.2	420	553.2	440
GR	555.2	460	560.2	470	564.7	479	565.2	480	567.2	490
GR	566.2	500	564.2	510	560.2	520	557.8	526	556.2	530
GR	554.2	540	554.2	570	553.2	580	555.2	600	557.2	610
GR	560.2	620	560.5	621	562.6	628	563.2	630	563.2	650
GR	565.2	660	566.2	670	568.2	680	567.7	690	568.2	700
GR	567.2	710	565.2	720	567.2	730	568.2	740	569.2	760
GR	569.2	765	569.2	770	569.0	772	568.2	780	567.2	790
GR	565.2	800	565.2	810	564.7	820	566.2	830	567.2	840
GR	566.7	850	568.7	860	570.2	870	572.2	880	576.2	890
GR	577.7	900	580.2	907	596.6	907	594.0	1000		
NC	.035	.035	.028	.1	.2					
QT	2	65900	78400							

2480' U/S FROM U/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1 SEC.Q

X1	5.152	70	599	1331	932	932	932			
GR	583.8	0	583.1	100	583.5	200	583.9	300	583.7	400
GR	584.6	500	583.3	587	582.5	599	582.3	600	581.3	610
GR	579.9	620	579.4	630	577.4	650	576.9	660	580.4	670
GR	575.9	680	574.9	690	573.4	700	571.4	730	570.0	740
GR	569.9	750	569.4	760	568.4	780	567.4	780	565.9	800
GR	565.4	810	562.4	830	561.9	840	561.4	850	561.4	870
GR	560.8	880	560.4	890	559.4	910	557.4	930	556.9	940
GR	556.9	950	557.4	960	557.9	970	557.4	980	556.4	1000
GR	556.4	1010	555.9	1020	556.4	1030	556.4	1040	555.9	1050
GR	556.4	1060	556.4	1070	556.9	1080	556.9	1120	556.4	1130
GR	556.4	1160	557.4	1170	557.4	1180	559.9	1230	559.9	1240
GR	560.4	1250	560.4	1270	560.9	1280	560.9	1290	561.4	1300
GR	561.4	1310	563.4	1320	565.4	1325	566.3	1327	578.4	1331
GR	583.4	1331	583.7	1340	583.8	1400	584.6	1500	587.0	1600
X1	5.325	84	280	877	920	920	920			
GR	610.0	0	610.2	100	595.6	100	595.3	105	586.8	125
GR	585.3	150	584.9	168	584.9	172	584.3	200	584.1	250
GR	583.7	277	582.4	278	582.3	280	580.9	285	581.5	287
GR	582.3	290	578.9	291	575.4	292	570.4	300	567.4	310
GR	562.9	320	560.9	330	559.9	340	559.9	350	559.4	360
GR	559.4	380	559.9	390	559.4	400	559.8	407.5	559.9	410
GR	559.8	411.5	559.4	420	558.9	430	558.9	450	559.4	460
GR	560.4	470	560.9	480	561.9	490	562.4	500	562.4	510
GR	561.5	519	561.4	520	559.9	530	556.4	540	555.4	560
GR	555.4	580	554.9	590	553.9	600	554.4	610	553.4	620
GR	552.9	630	552.9	640	553.9	650	553.9	660	553.4	670
GR	553.4	680	554.4	690	554.4	700	554.9	710	555.4	720
GR	556.3	729	556.4	730	556.4	740	555.4	750	555.9	760

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GR    557.4      770      559.9      780      562.9      790      564.9      800      565.9      810
GR    567.9      820      569.9      840      572.9      850      578.9      860      579.4      867
GR    581.9      868      582.3      877      582.9      881      583.0      882      583.4      915
GR    599.0      945      599.1      949      606.5      949      604.4     1000

        D/S FACE OF VETERANS MEMORIAL BRIDGE      SEC.  R
X1    5.326       87      280      877        1        1        1
GR    610.0        0      610.2    100      595.6    100      595.3    105      586.8    125
GR    585.3      150      584.9    168      609.9    168      609.9    172      584.9    172
GR    584.3      200      584.1    250      583.7    277      582.4    278      582.3    280
GR    580.9      285      581.5    287      609.4    287      609.3    291      578.9    291
GR    575.4      292      570.4    300      567.4    310      562.9    320      560.9    330
GR    559.9      340      559.9    350      559.4    360      559.4    380      559.9    390
GR    559.4      400      559.8    407.5    608.9    407.5    608.9    411.5    559.8    411.5
GR    559.4      420      558.9    430      558.9    450      559.4    460      560.4    470
GR    560.9      480      561.9    490      562.4    500      562.4    510      561.5    519
GR    608.7      519      608.6    560      555.4    560      555.4    580      554.9    590
GR    553.9      600      554.4    610      553.4    620      552.9    630      552.9    640
GR    553.9      650      553.9    660      553.4    670      553.4    680      554.4    690
GR    554.4      700      554.9    710      555.4    720      556.3    729      608.6    729
GR    608.6      770      557.4    770      559.9    780      562.9    790      564.9    800
GR    565.9      810      567.9    820      569.9    840      572.9    850      578.9    860
GR    579.4      867      581.9    868      582.3    877      607.8    877      607.7    881
GR    582.9      881      583.0    882      583.4    915      599.0    945      599.1    949
GR    606.5      949      604.4   1000

X1    5.339        0        0        0       68       68       68

NH      3.0      .035      290      028      877      .035     1000
X1    5.340       84      280      877        1        1        1
GR    610.0        0      610.2    100      595.6    100      595.3    105      586.8    125
GR    585.3      150      584.9    168      584.9    172      584.3    200      584.1    250
GR    583.7      277      582.4    278      582.3    280      580.9    285      581.5    287
GR    582.3      290      578.9    291      575.4    292      570.4    300      567.4    310
GR    562.9      320      560.9    330      559.9    340      559.9    350      559.4    360
GR    559.4      380      559.9    390      559.4    400      559.8    407.5    559.9    410
GR    559.8    411.5      559.4    420      558.9    430      558.9    450      559.4    460
GR    560.4      470      560.9    480      561.9    490      562.4    500      562.4    510
GR    561.5      519      561.4    520      559.9    530      556.4    540      555.4    560
GR    555.4      580      554.9    590      553.9    600      554.4    610      553.4    620
GR    552.9      630      552.9    640      553.9    650      553.9    660      553.4    670
GR    553.4      680      554.4    690      554.4    700      554.9    710      555.4    720
GR    556.3      729      556.4    730      556.4    740      555.5    750      555.9    760
GR    557.4      770      559.9    780      562.9    790      564.9    800      565.9    810
GR    567.9      820      569.9    840      572.9    850      578.9    860      579.4    867
GR    581.9      868      582.3    877      582.9    881      583.0    882      583.4    915
GR    599.0      945      599.1    949      606.5    949      604.4   1000

NH      3.0      035      485      .025    1325      .035    1685
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          2990' U/S FROM U/S FACE OF VETERANS MEMORIAL BRIDGE        SEC. S
X1     5.905        86       182      1346      2990      2990      2990
X3        10         0         0         0         0      1365         0         0         0         0
GR     589.8         0     585.6        85     584.2       135     582.9       182     582.2       185
GR     581.3       195     579.8       205     578.8       225     577.8       235     576.8       255
GR     577.3       265     577.3       305     577.8       315     578.3       325     577.8       335
GR     578 3       345     578.3       355     578.8       365     578.3       375     578.3       425
GR     577.3       435     577.3       445     576.8       455     575.3       485     575.3       515
GR     574.8       525     575.3       535     575.3       565     574.3       575     574.3       595
GR     573.8       605     574.3       615     574.3       645     575.3       655     575.3       665
GR     575.8       675     576.3       685     576.3       695     576.8       705     576.3       715
GR     576.3       725     576.8       735     576.3       745     576.3       785     575.3       795
GR     575.3       825     574.3       835     574.3       845     573 3       865     572 3       875
GR     571.8       885     570 3       895     569.8       905     568.3       915     567.3       925
GR     565.3       935     564 3       945     562.3       955     561.3       965     561.3       975
GR     558.3      1005     558.3      1015     557.3      1025     557.3      1085     556.8      1095
GR     556 8      1145     556 3      1155     556.8      1165     556.8      1175     560.3      1245
GR     561.3      1255     565.3      1275     566.8      1285     566.3      1295     568.3      1305
GR     572.3      1315     575.3      1325     577.8      1335     580 6      1340     582.2      1345
GR     582.9      1346     584.8      1365     584.1      1385     582.6      1485     583.2      1585
GR     584.0      1685

QT        2     57650     67300
NH      5 0      .035       473      .035       763      .035      1023      .027      1563      .035
NH     1833
          NORTH END OF MIDDLE GROUND ISLAND        SEC. T
X1     6 222        95       989      1568      1670      1670      1670
X3        10         0         0       933         0         0         0         0         0         0
GR     591 8         0     588.0        33     584.5        83     583.6       132     580.7       133
GR     580.3       138     580.1       153     579.6       173     579.1       183     578.6       203
GR     578.1       233     578.1       253     577.6       263     578.1       293     578.6       303
GR     578.6       313     579.1       323     579.1       343     580.1       363     580.1       383
GR     579.1       393     579.1       463     580 1       473     579.1       493     578 1       503
GR     577.6       513     576.1       523     574.1       563     573.6       583     574.1       603
GR     573 1       623     573.1       643     572.6       663     572.6       673     572.1       703
GR     571.1       713     573.1       723     574.1       733     577 1       743     580.6       763
GR     580.6       793     581.1       803     581.1       813     581.6       823     582 0       833
GR     582.3       834     584.6       863     585.5       933     584.7       978     582.4       938
GR     582.0       989     581.1       993     579.1      1003     578.6      1023     577.1      1033
GR     576.1      1053     576.1      1063     575.1      1083     574.1      1103     573.1      1113
GR     571.1      1123     570.1      1133     569.6      1143     567 1      1163     565 1      1183
GR     563.1      1193     558.1      1213     557.1      1223     555.1      1243     554.6      1253
GR     553 1      1343     554.1      1353     554.1      1363     555 6      1393     555.1      1403
GR     555.1      1413     556.1      1423     555.6      1433     556.6      1443     557.1      1453
GR     562 1      1463     562.6      1473     563 6      1483     565.6      1493     566.1      1503
GR     569.1      1523     570.1      1533     572.1      1543     575.6      1553     579.1      1563
GR     582.0      1568     583 8      1573     584.7      1633     587.2      1733     589.5      1833

NH       5.0      .035       306       030       802      .035      1390      .028      1837      .035
NH      2126
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X1    6.519      95      1390      1837      1573      1573      1573
X3       10       0         0      1106         0         0         0         0         0         0
GR    592 1       0      591.3       106     591.9       206     595.1       306     579.6       306
GR    579.1     311      578.1       316     576.1       326     575.1       346     573.1       366
GR    571.1     406      572.1       426     572.1       436     571.1       456     570.1       466
GR    569.6     476      569.4       480     569.1       486     573.1       506     573.1       526
GR    573.6     536      572.1       546     571.5       552     571.1       556     571.1       566
GR    574.0     596      579.1       616     579.6       626     579.7       628     579.9       632
GR    580.1     636      580.3       646     580.6       656     581.6       676     581.8       686
GR    581.8     726      582.0       730     582 3       736     582.9       756     584.9       802
GR    595.1     802      595.0       806     590 5       906     589.7      1006     590.3      1106
GR    591.2    1206      593.5      1306     597.8      1390     578.1      1390     575.6      1400
GR    570.1    1410      569.1      1420     568.6      1430     567.1      1440     566 1      1450
GR    564.6    1460      558.1      1470     559 1      1480     558 2      1483     556.1      1490
GR    552.1    1510      548.1      1520     548.4      1523     550.1      1540     553.1      1550
GR    553.6    1560      552 1      1570     552.1      1600     551.1      1610     552.1      1620
GR    552.1    1640      553 1      1650     552.1      1660     552.6      1670     551.1      1680
GR    547.1    1690      546.7      1694     546.1      1700     546.1      1710     547.1      1720
GR    549.9    1734      551.1      1740     560.6      1750     562.1      1760     563.1      1770
GR    564.1    1780      565.1      1790     567.1      1800     570.1      1810     561 1      1826
GR    577.6    1837      597 5      1837     594.5      1906     592.8      2006     592.8      2126

NC      035     .035      .028        .1        .2
          D/S FACE OF LAFAYETTE BRIDGE        SEC.  U
X1    6.520      95      1390      1837         1         1         1
X3       10       0         0      1106         0         0         0         0         0         0
GR    592.1       0      591.3       106     595.1       306     579.6       306     579.1       311
GR    578.1     316      576 1       326     575.1       346     573.1       366     570.1       376
GR    570.0     378      597.3       378     597.4       382     569.8       382     569.6       386
GR    569.6     476      600.3       476     600.3       480     569.4       480     569.1       486
GR    573.1     506      573 1       526     573.6       536     572.1       546     571.5       552
GR    601.4     552      601.4       556     571.1       556     571.1       566     574.1       596
GR    579.1     616      579.6       626     579.7       628     600.3       628     600.2       632
GR    579.9     632      580.1       636     580.6       656     581 6       676     581.8       686
GR    581.8     726      597.4       726     597.3       730     582.0       730     582.3       736
GR    582.9     756      584.9       802     595.1       802     595.0       806     590.5       906
GR    589.7    1006      590.3      1106     591.2      1206     593.5      1306     597.8      1390
GR    578.1    1390      575.6      1400     570.1      1410     569.1      1420     567.1      1440
GR    564.6    1460      558.1      1470     559.1      1480     558.2      1483     600.6      1483
GR    601.7    1523      548.4      1523     550.1      1540     553.1      1550     553.6      1560
GR    552.1    1570      552 1      1600     551.1      1610     552.1      1640     553.1      1650
GR    552.1    1660      552.6      1670     551.1      1680     547.1      1690     546 7      1694
GR    601.7    1694      600.8      1734     549.9      1734     551.1      1740     560.6      1750
GR    562.1    1760      563.1      1770     564.1      1780     565.1      1790     567.1      1800
GR    570 1    1810      561.1      1826     577.6      1837     597 5      1837     594.5      1906

X1    6.528       0         0         0        42        42        42
X3       10       0         0      1106         0         0         0         0         0         0
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X1	6 529	95	1390	1837	1	1	1			
X3	10	0	0	1106	0	0	0	0	0	0
GR	592.1	0	591.3	106	591.9	206	595.1	306	579.6	306
GR	579.1	311	578.1	316	576.1	326	575.1	346	573.1	366
GR	570.1	376	570.0	378	569.8	382	569.6	386	570.6	396
GR	571.1	406	572.1	426	572.1	436	571.1	456	570.1	466
GR	569.6	476	569.4	480	569.1	486	573.1	506	573.1	526
GR	573.6	536	572.1	546	571.5	552	571 1	556	571.1	566
GR	574.1	596	579.1	616	579.6	626	579.7	628	579.9	632
GR	581.8	726	582 0	730	582.3	736	582.9	756	584.9	802
GR	595 1	802	595.0	806	590 5	906	589.7	1006	590.3	1106
GR	591.2	1206	593.5	1306	597.8	1390	578.1	1390	575.6	1400
GR	570.1	1410	569.1	1420	568.6	1430	567.1	1440	566.1	1450
GR	564.6	1460	558.1	1470	559.1	1480	558.2	1483	556.1	1490
GR	552.1	1510	548.1	1520	548.4	1523	550.1	1540	553.1	1550
GR	553.6	1560	552.1	1570	552 1	1600	551.1	1610	552.1	1620
GR	552.1	1640	553 1	1650	552.1	1660	552.6	1670	551 1	1680
GR	547.1	1690	546.7	1694	546.1	1700	546.1	1710	547.1	1720
GR	549.9	1734	551.1	1740	560.6	1750	562.1	1760	563.1	1770
GR	564.1	1780	565.1	1790	567.1	1800	570.1	1810	561.1	1826
GR	577.6	1837	597.5	1837	594.5	1906	592.8	2006	592.8	2126
NH	5.0	.035	720	.030	1120	.035	2120	.027	2760	.035
NH	2845									

2578' U/S FROM U/S FACE OF LAFAYETTE BRIDGE SEC. V

X1	7.016	95	2030	2760	2578	2578	2578			
X3	10	0	0	2030	0	0	0	0	0	0
GR	594.2	0	591.5	10	590.4	15	591.0	35	592.1	90
GR	592.6	290	590.6	490	588.5	590	587.1	662	585.4	670
GR	583.5	687	582.4	689	581.9	690	581.0	695	579.5	710
GR	579.0	720	578.0	730	577.0	740	577.0	750	574.0	760
GR	574.0	880	573.5	910	574.0	920	574.0	930	574.0	950
GR	574.0	980	574.5	990	574.5	1010	575.0	1020	575.0	1040
GR	576 0	1050	577 0	1070	577.0	1080	578.0	1100	578.0	1110
GR	579.0	1120	579 0	1160	580.0	1180	580.0	1190	580.6	1200
GR	581.0	1205	581.9	1206	585.2	1210	585.1	1290	584.6	1390
GR	583.2	1490	584.1	1590	583.1	1690	582.6	1890	583.6	2030
GR	581.9	2031	578.0	2040	577.0	2050	577.0	2120	576.0	2140
GR	576.0	2170	575.0	2190	576.0	2210	575.0	2250	575.0	2260
GR	574.0	2280	571.5	2300	569 0	2320	566.5	2340	563.0	2350
GR	561.0	2360	556 0	2370	554.0	2390	554 0	2410	554.0	2420
GR	553.5	2440	553.0	2450	555.0	2470	555.0	2510	555.5	2520
GR	554.0	2550	555.0	2560	555.0	2590	556.5	2600	557.0	2610
GR	563 0	2630	568.0	2640	570.0	2650	571 0	2660	571.0	2670
GR	572.0	2680	573.0	2700	574.5	2710	572.5	2720	572.5	2730
GR	573.0	2740	575.0	2760	584.6	2760	583.9	2790	585.6	2845
NH	5.0	.035	460	.030	840	.035	1840	.026	2380	035
NH	2490									

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          5488' U/S FROM U/S FACE OF LAFAYETTE BRIDGE        SEC. W
X1     7.567        95      1742      2400      2910      2910      2910
X3        10         0         0      1190         0         0         0         0         0
GR     589.0         0     587.6         5     584.5        15     583.1        30     584.7        35
GR     584.9       190     584.6       290     583.0       385     582.2       389     581.6       390
GR     580.6       400     580.8       420     582.0       423     582.5       425     582.7       433
GR     582.0       435     581.1       440     580.1       450     578.1       460     575.6       480
GR     575.6       490     575.1       510     576.1       520     575.1       530     575.1       550
GR     574.1       570     574.1       590     573.1       610     573.1       630     572.6       640
GR     573.6       770     575.6       810     577.1       830     578.1       840     579.6       870
GR     580.8       880     582.0       890     582.8       892     582.3      1090     585.3      1190
GR     584.7      1290     583.5      1390     585.1      1490     586.0      1590     586.0      1690
GR     584.7      1742     582.1      1753     580.6      1760     576.1      1780     574.6      1790
GR     574.1      1800     575.1      1810     575.1      1840     574.6      1850     573.6      1860
GR     570.1      1870     567.1      1890     564.1      1920     564.6      1930     563.1      1940
GR     562.1      1950     558.1      1970     555.1      1990     556.1      2000     556.1      2010
GR     555.1      2020     555.1      2070     554.6      2080     554.6      2090     555.1      2100
GR     555.1      2110     554.1      2120     555.1      2130     555.1      2150     555.6      2160
GR     555.1      2170     555.1      2200     556.1      2210     556.1      2220     558.1      2260
GR     558.1      2270     558.6      2280     559.1      2300     558.1      2310     557.6      2330
GR     558.1      2340     561.1      2350     567.1      2360     573.1      2370     577.6      2380
GR     580.8      2390     582.0      2400     583.3      2407     584.8      2440     585.2      2490

NH       5.0      .035       957      .030      1332      .035      1432      .030      1912      .035
NH      2452
          SOUTH END OF MIDDLE GROUND ISLAND & NORTH END OF SKULL ISLAND  SEC. X
X1     8.099        86      1432      1952      2810      2810      2810
X3        10         0         0      1342         0      1982         0         0         0         0
GR     589.3         0     587.8         7     583.0        19     582.5        27     583.0        32
GR     583.6        52     584.0       152     583.8       252     583.4       352     583.1       452
GR     584.3       552     583.1       652     583.1       752     583.3       852     583.0       951
GR     581.9       952     579.5       957     577.0       962     576.0       972     576.0      1062
GR     575.5      1072     575.5      1092     575.0      1102     575.0      1112     574.5      1122
GR     574.5      1132     574.0      1142     574.0      1152     573.5      1162     573.5      1172
GR     573.0      1182     573.0      1272     574.0      1292     574.0      1302     574.5      1312
GR     576.0      1322     579.0      1332     581.9      1337     583.7      1342     583.3      1425
GR     583.3      1432     576.0      1432     575.0      1437     574.0      1442     570.0      1452
GR     568.0      1462     567.0      1472     566.0      1482     564.0      1492     562.0      1502
GR     562.0      1512     559.0      1532     557.0      1542     556.0      1552     556.0      1562
GR     554.0      1572     553.0      1582     553.5      1592     553.5      1602     553.0      1612
GR     553.0      1622     553.5      1632     553.5      1642     554.0      1652     554.0      1752
GR     556.0      1792     558.0      1802     558.0      1812     564.0      1842     565.0      1852
GR     567.0      1862     576.0      1892     579.0      1912     579.5      1922     580.5      1732
GR     581.0      1942     581.9      1952     582.2      1952     585.6      1982     583.2      2002
GR     590.4      2052     587.3      2072     588.0      2152     588.1      2252     589.8      2352
GR     591.3      2452

QT         2     65900     78400
NH       3.0      .035      1117      .030      1882      .035      3312
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750' U/S FROM MIDDLE GROUND ISLAND SEC. Y

X1	8.241	94	1111	1927	750	750	750			
X3	0	0	0	0	0	1927	0	0	0	0
GR	588.8	0	587.8	9	585.4	19	585.2	112	584.8	212
GR	584.8	312	585.4	412	585.3	512	585.4	612	584.6	712
GR	585.7	812	583.7	912	582.7	1012	583.0	1111	582.2	1112
GR	580.3	1117	577.8	1122	576.3	1132	575.3	1142	574.8	1152
GR	574.8	1162	574.3	1172	574.3	1182	573.3	1192	572.8	1202
GR	573.3	1212	573.3	1232	572.8	1242	572.3	1252	572.3	1262
GR	571.8	1272	571.8	1282	571.3	1292	571.3	1302	570.3	1312
GR	569.8	1322	569.8	1332	569.3	1342	569.3	1352	568.8	1362
GR	568.8	1372	568.3	1382	565.3	1412	565.3	1422	563.3	1432
GR	563.3	1442	564.3	1462	563.8	1472	562.3	1482	561.3	1492
GR	559.3	1502	556.3	1512	554.3	1532	554.8	1542	554.8	1552
GR	555.3	1562	554.8	1572	554.8	1582	555.3	1592	555.3	1672
GR	554.8	1682	554.3	1692	554.3	1712	554.8	1722	555.3	1732
GR	555.3	1762	557.3	1782	560.3	1792	564.3	1812	565.3	1822
GR	571.3	1842	574.3	1852	576.3	1862	578.3	1882	578.8	1892
GR	579.8	1902	580.5	1912	582.2	1920	582.7	1922	588.4	1927
GR	586.9	2012	587.0	2112	587.2	2212	587.8	2312	589.1	2412
GR	589.9	2512	588.7	2612	587.7	2712	587.4	2812	586.0	2912
GR	585.6	3012	584.8	3112	585.0	3212	585.4	3312		
NH	3.0	.035	166	029	1076	.035	3936			
GT	2	67100	80000							

5170' U/S FROM MIDDLE GROUND ISLAND SEC. Z

X1	9.079	95	21	1086	4420	4420	4420			
X3	0	0	0	0	0	1900	0	0	0	0
GR	587.8	0	586.8	8	584.3	11	582.0	20	582.0	21
GR	581.1	26	580.9	36	580.6	46	580.1	56	580.1	116
GR	578.1	156	578.1	166	577.1	186	576.6	206	575.1	236
GR	572.1	256	571.1	266	570.6	276	570.6	296	570.1	306
GR	568.1	326	565.1	336	559.1	346	556.1	356	554.1	376
GR	551.6	396	551.1	406	551.1	466	552.6	486	555.1	536
GR	556.1	546	556.1	556	558.1	566	558.1	576	559.1	586
GR	561.1	596	562.1	606	564.1	616	568.1	626	569.6	636
GR	570.1	646	570.1	656	570.6	666	570.6	676	571.1	686
GR	571.1	726	571.6	736	571.6	746	572.1	756	572.1	776
GR	572.6	786	572.6	806	573.1	816	573.1	846	573.6	856
GR	573.6	876	574.1	886	574.1	906	574.6	916	574.6	936
GR	575.1	946	575.1	1006	575.6	1016	575.6	1026	577.1	1056
GR	578.1	1066	578.6	1076	581.1	1081	582.0	1086	583.9	1087
GR	586.0	1091	582.8	1131	581.7	1186	582.2	1286	582.1	1686
GR	581.8	1786	581.0	1886	580.4	2086	580.7	2286	580.9	2386
GR	581.5	3086	582.0	3286	582.3	3386	582.0	3486	583.0	3586
GR	583.3	3673	585.2	3682	585.2	3778	583.4	3786	581.9	3840
GR	579.6	3844	579.9	3881	582.7	3886	587.8	3906	588.8	3936
NH	5.0	.035	940	.028	1710	.035	2040	.028	3430	.035
NH	3670									

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          4260' D/S FROM CHEBOYGANING CREEK          SEC. AA
X1     9.584        94       660      1743      2800      1700      2670
X3         0         0         0         0         0      2250         0         0         0         0
GR     587.5         0     587.4        10     580.8        20     580.8        40     580.3       140
GR     580.5       240     580.9       340     581.6       440     582.1       510     582.9       540
GR     582.9       640     583.1       660     581.9       681     581.5       690     581.0       740
GR     579.9       790     579.9       840     580.1       880     579.9       900     579.7       910
GR     578.7       930     578.7       940     578.2       950     578.2       960     577.7       970
GR     577.7       980     576.7      1000     576.7      1020     575.7      1040     575.7      1050
GR     574.7      1070     574.7      1080     573.7      1100     571.7      1110     570.7      1120
GR     560.7      1170     558.7      1190     556.7      1200     555.7      1210     555.7      1220
GR     554.7      1230     554.7      1290     555.7      1310     555.7      1330     554.7      1350
GR     554.7      1410     557.7      1420     564.7      1430     571.2      1440     571.7      1450
GR     571.7      1480     572.7      1490     573.7      1510     573.7      1520     574.7      1540
GR     574.7      1620     575.2      1630     575.2      1660     577.7      1710     579.2      1720
GR     579.9      1730     580.7      1735     581.6      1740     581.7      1741     583.0      1743
GR     584.5      1840     585.0      1940     583.8      1955     579.3      1965     579.4      2015
GR     581.2      2025     581.3      2040     580.2      2140     580.2      2340     580.3      2440
GR     580.7      2540     580.8      2640     581.4      2740     581.4      2840     581.1      2940
GR     580.7      3040     581.0      3140     580.7      3240     581.3      3340     585.3      3430
GR     581.8      3448     581.9      3470     581.4      3505     581.2      3545     575.2      3570
GR     581.2      3600     583.0      3605     587.6      3630     588.8      3670

NH       3.0      .035      1617      .030      2352      .035      2407
          800' D/S FROM CHEBOYGANING CREEK          SEC. AB
X1    10.240        64      1575      2358      3050      3600      3460
GR     587.7         0     581.6        17     579.6        20     579.6       235     580.1       432
GR     580.0       742     580.0       957     579.9      1107     580.6      1337     581.6      1557
GR     583.2      1567     582.0      1575     581.5      1577     581.1      1587     579.6      1617
GR     577.6      1637     576.6      1657     576.6      1667     574.6      1677     573.6      1697
GR     569.6      1737     559.6      1787     558.6      1797     558.6      1807     557.6      1817
GR     557.6      1837     556.6      1847     555.1      1857     554.6      1867     554.6      1907
GR     555.1      1917     554.6      1927     554.6      1967     555.6      1977     555.6      1987
GR     557.6      2007     560.6      2017     563.6      2027     566.6      2037     569.1      2047
GR     569.6      2057     570.1      2067     569.1      2077     569.6      2087     568.6      2097
GR     568.6      2127     568.1      2137     568.1      2177     568.6      2187     568.6      2197
GR     569.6      2217     569.6      2237     570.6      2247     570.6      2257     574.6      2297
GR     575.1      2307     576.1      2317     576.6      2327     578.6      2347     579.6      2352
GR     581.5      2357     582.1      2358     587.9      2367     589.6      2407

NC      .035      .035      .028        .1        .2
NH       3.0      .035       310      .025      1050      .035      1370
QT         2     68400     82400
          350' NORTH FROM BAY COUNTY-SAGINAW COUNTY LINE          SEC. AC
X1    10.993        66        70      1071      3100      4100      3980
X3         0         0         0        80         0         0         0         0         0         0
GR     588.6         0     582.7        20     582.9        70     582.0        83     581.7        84
GR     581.3        90     580.8       100     580.8       110     580.3       120     580.3       140
GR     579.8       150     579.8       160     578.8       180     578.8       200     578.3       210
GR     578.3       230     577.8       240     577.8       310     577.3       320     577.3       340
GR     576.8       350     576.8       420     576.3       430     576.3       450     575.3       470
GR     573.8       480     572.8       490     566.8       520     556.8       540     555.3       570
GR     555.8       580     555.8       600     554.8       620     554.8       630     555.3       640
GR     554.8       650     554.8       760     555.8       770     555.8       780     560.8       790
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GR    561.8      800     571.8      810     572 8      830     572.8      860     573.3      870
GR    572.8      880     572.8      900     573.8      920     573.8      940     574 8      960
GR    574.8      970     575.3      980     575.3      990     575.8     1000     575.8     1020
GR    576.8     1040     577.8     1050     578.3     1060     579.3     1065     581.7     1070
GR    582.8     1071     586.4     1082     591.7     1145     591.9     1170     590.4     1270
GR    590.0     1370

NC     .035      .035      028        1       .2
X1   11.433        0        0        0     2325     2325     2325        0      .05        0
X3        0        0        0      210        0     1060        0        0        0        0

NH      3 0      .035      845     .027     1395      035     1495
         3920' SOUTH FROM BAY COUNTY-SAGINAW COUNTY LINE      SEC.  AD
X1   11.802       56      824     1426     1900     2000     1945
X3        0        0        0      380
GR    586.5        0    583.8       16    581.8       25    581.3      125     582.0      225
GR    582.2      325    584.6      375    582.6      425    585.1      525     582.6      625
GR    582.0      675    582.1      785    584.1      810    582.2      824     581.8      825
GR    579.9      835    578.9      845    576.9      855    570.9      865     570.9      875
GR    567.9      885    560.9      895    559.9      905    557.9      915     556.9      925
GR    555.9      945    555.9      995    555 4     1005    555.4     1015     554.9     1025
GR    554.9     1075    555.9     1085    555.9     1145    558.9     1175     570.9     1185
GR    570.9     1215    571.4     1225    571.4     1235    571.9     1245     571.9     1255
GR    573.9     1295    574.9     1305    575.9     1325    575 9     1335     576.9     1355
GR    576.9     1365    577 9     1385    578.9     1395    580.4     1405     580.9     1415
GR    581.4     1420    581.8     1425    582.1     1426    584.6     1431     591.4     1460
GR    592 5     1495

NH      3 0      .035      835      027     1545      035     1670
         4050' U/S FROM SECTION AD        SEC.  AE
X1   12.569       95      784     1616     4050     4050     4050
GR    588.6        0    588.4        5    582.4       18    581.8       20     580.4       45
GR    579.9       65    579.9      125    579.4      145    579.4      185     578.9      205
GR    579.4      225    578.9      245    578.9      265    579.4      285     579.4      345
GR    579.9      365    579.9      385    579.4      405    579 9      425     579.9      545
GR    579.4      565    579 9      585    579.4      605    579.4      685     578.9      705
GR    578.9      725    581.8      744    583.0      745    585.0      753     585.6      775
GR    583.0      784    581.8      785    580.9      790    580.4      795     578.9      805
GR    578.9      815    578 4      825    578.4      835    577.9      845     577.4      855
GR    577.4      865    576.9      875    576.4      885    576.4      895     575.9      905
GR    572.9      935    566 9      965    563.9      975    562.9      985     556 9     1015
GR    556.4     1025    556.4     1035    555.9     1045    555.9     1055     554 9     1075
GR    554.9     1085    553.9     1095    553 9     1115    553.4     1125     553.9     1135
GR    553.9     1175    554.4     1185    554.4     1205    553.9     1215     554.4     1225
GR    554.4     1235    554.9     1245    556.9     1255    556.9     1265     558.9     1275
GR    564.9     1295    568.9     1315    569.9     1325    571 9     1335     575.9     1375
GR    575.9     1395    576.4     1405    576.4     1415    576.9     1425     576.9     1455
GR    577.4     1465    577.4     1485    577.9     1495    577.9     1525     578.4     1535
GR    578.9     1545    578.9     1565    579.4     1575    580.4     1585     580.4     1595
GR    580.9     1605    581.8     1615    582.4     1616    583.4     1645     589 7     1670
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NH      3.0       .035       610       .028       1166       .035       1406
          6115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE (I-75 BRIDGE)    SEC  AF
X1   13 249        58       610      1187       3590       3590       3590
X3       0         0         0       230
GR    588 6        0      581.7        20       581 9        66      584.5        71      585.9        86
GR    586 2       96      585 8       186      586.3       286      586.1       386      585.8       486
GR    585.4      586      585.3       610      564.5       611      561.6       626      560.6       636
GR    559.1      646      558.6       656      558 6       666      557 6       676      557.1       686
GR    556 1      696      555.6       706      555.6       716      555.1       726      554.6       736
GR    555 1      746      555 6       756      555.6       856      555.1       866      555.1       886
GR    554.6      896      554.6       926      556.6       936      562.6       946      563.6       956
GR    565.1      966      566.1       976      566.6       986      566.6       996      567.6      1006
GR    568.6     1026      569.6      1036      571.6      1046      575.6      1086      576.6      1106
GR    576.6     1116      577.6      1126      577.6      1146      579.6      1166      580.1      1176
GR    580.6     1181      581.5      1186      582.1      1187      585.5      1211      587.2      1286
GR    588.6     1351      588.0      1386      589.1      1406

NH      3.0       035       395       .027        975       .035       1630
          3485' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC. AG
X1   13.747        63       365      1013       2630       2630       2630
X3       0         0         0       275
GR    589.1        0      586.4        75      585.9       175      589.3       275      585.9       365
GR    581.5      374      582.0       375      581.1       380      580.3       385      578.1       395
GR    577.1      405      576.6       415      575.1       425      574.6       435      574.6       455
GR    575 1      465      575 1       495      574.1       515      572.1       535      567.1       545
GR    565 1      565      561.1       575      559 1       585      559.1       595      555.1       605
GR    554.6      615      554.6       645      554.1       655      554.1       665      553.1       685
GR    554.1      705      554.1       735      553.6       745      554.6       765      554.6       775
GR    554.1      785      554.1       805      556.1       825      556.1       835      567.1       845
GR    567.1      855      571.1       865      573.1       875      574.1       885      574.6       895
GR    576.1      905      576.1       935      576.6       945      579.6       975      580.1       985
GR    581.1      995      581.3      1005      582.0      1013      583.3      1075      583.6      1150
GR    583.3     1175      582.1      1205      580.6      1275      580.0      1375      579.6      1475
GR    580.6     1575      587.3      1595      588.6      1630

NH      3 0       .035       810       .028       1310       .035       1600
          115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC. AH
X1   14 385        66       799      1335       3370       3370       3370
X3       0         0         0       780          0       1380
GR    587.0        0      585.8       100      585.3       200      584.1       300      584.2       400
GR    583.3      415      581.8       420      581.9       440      588.3       455      589.2       465
GR    587 5      500      589.8       570      595.0       583      594.9       600      594.6       615
GR    589.0      630      587.7       700      584.6       789      583.3       790      581.5       799
GR    581.3      800      580.4       805      579.4       810      577.4       820      572.4       830
GR    560.4      860      558.4       870      557.4       880      557.4       890      556.4       900
GR    557.9      910      559.4       920      557.4       930      557.4       940      558.9       950
GR    560.4      960      556.4       970      554.4       990      554.4      1000      554.9      1010
GR    554.4     1020      554.9      1030      554.4      1040      554.4      1060      553.4      1070
GR    553 4     1080      554.4      1090      555.4      1100      555.4      1130      556.9      1140
GR    557.4     1150      557.4      1170      559.4      1190      559.4      1210      562.4      1220
GR    566.4     1230      567.4      1240      575.4      1280      576.9      1290      578.9      1310
GR    580.4     1320      581.3      1330      581.8      1335      585.6      1400      588.5      1500
GR    590 8     1600
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NC      035      .035      .028       .1        .2
X1   14.406        52         4      590       114       114       114
GR    606 9         0     604.4        0     604.4         4     582.0        35     581.3        45
GR    580 9        50     576.9       60     571.4        70     563.4        90     563.4        95
GR    563.4       110     562.9      120     561.9       130     559.4       140     560.4       150
GR    559.4       160     557.4      170     556.9       175     556.4       180     557.4       190
GR    556.4       200     555.7      215     554.4       240     554.4       290     552.4       310
GR    554.4       330     555.9      340     558.4       350     560.4       370     558.4       380
GR    559.4       385     560.4      390     561.4       400     560.4       410     558.4       420
GR    559.4       425     560.4      430     563.4       440     567.4       460     568.4       470
GR    570.4       480     574.4      500     574.4       505     574 4       510     576.4       520
GR    577.9       530     579.9      540     580.9       550     581 3       553     582.0       560
GR    595 0       575     600.1      590

          D/S FACE OF ZILWAUKEE BRIDGE        SEC.  AI
X1   14 407        53         4      590         1         1         1
GR    606.9         0     604.4        0     604.4         4     582.0        35     581.3        45
GR    580.9        50     576.9       60     571.4        70     563.4        90     604.6        90
GR    604 5        95     563.4       95     563.4       110     562.9       120     561.9       130
GR    559.4       140     560.4      150     559.4       160     557.4       170     556.9       175
GR    602.5       175     601 5      215     555 7       215     554.4       240     554.4       290
GR    552.4       310     554 4      330     555.9       340     558.4       350     560.4       370
GR    558.4       380     559.4      385     601.5       385     601.2       425     559.4       425
GR    560 4       430     563.4      440     567.4       460     568.4       470     570.4       480
GR    574 4       500     574.4      505     600.7       505     600.6       510     574.4       510
GR    576 4       520     577.9      530     579.9       540     580.9       550     581.3       553
GR    582.0       560     595.0      575     600.1       590

X1   14.420         0         0        0        70        70        70

X1   14.421        52         4      590         1         1         1
GR    606.9         0     604.4        0     604.4         4     582.0        35     581.3        45
GR    580.9        50     576.9       60     571.4        70     563.4        90     563 4        95
GR    563.4       110     562.9      120     561.9       130     559.4       140     560.4       150
GR    559.4       160     557.4      170     556.9       175     556.4       180     557.4       190
GR    556.4       200     555.7      215     554 4       240     554 4       290     552.4       310
GR    554.4       330     555.9      340     558.4       350     560.4       370     558.4       380
GR    559 4       385     560.4      390     561 4       400     560.4       410     558 4       420
GR    559.4       425     560 4      430     563 4       440     567.4       460     568.4       470
GR    570 4       480     574.4      500     574.4       505     574.4       510     576.4       520
GR    577.9       530     579.9      540     580.9       550     581.3       553     582.0       560
GR    595.0       575     600.1      590

NC     .035      .035      .028       .1        .2
NH      3.0      .035      1725     .026      2285      .035      2605
          3885' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC  AJ
X1   15.156        82      1567      2370      3884      3884      3884
X3        0         0         0      1567         0      2280
GR    586.6         0     589.5        39     587 6       105     587.5       135     581.6       150
GR    579 9       155     579.6       205     581.6       218     585.2       220     588.2       325
GR    583.2       345     582.2       705     583 1       992     584.6      1077     587.6      1100
GR    583.5      1162     582 8      1465     585.9      1490     586.0      1505     585.2      1555
GR    588 6      1567     586.6      1590     581.9      1604     581.5      1605     580.1      1610
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GR    577.1    1615    575.6    1625    575.6    1635    579.6    1645    579.1    1655
GR    579.1    1665    578.6    1675    578.6    1705    578.1    1715    578.1    1725
GR    577.6    1735    577.6    1745    575.6    1785    574.6    1795    574 6    1805
GR    573.6    1815    572.6    1825    570.6    1835    562 6    1915    562.6    1925
GR    560.6    1945    560.6    1955    559 6    1965    559.1    1975    557.6    1985
GR    557.6    1995    555.6    2015    555.6    2035    555.1    2045    555.1    2055
GR    554.6    2065    554.6    2085    553.6    2095    553.6    2105    554.1    2115
GR    555 1    2125    556.6    2135    556.6    2145    557.6    2155    557.6    2175
GR    558.1    2185    559.6    2195    560.6    2205    564.6    2225    576.6    2265
GR    577.6    2275    578 1    2285    578.1    2295    579.6    2325    579.6    2335
GR    580.3    2345    580.6    2355    581.5    2365    581.6    2370    582.6    2425
GR    584.9    2525    590.1    2605

NH      3.0    .035     2145    .026     2585    .035     2810
X1   15.470      72     2114    2645     1657    1657     1657       0     .310       0
X3        0       0        0    2010
GR    585.7       0    587.9      28    589.2      38    587.2      50    581.9      60
GR    582.7      95    587.8     120    586.6     125    580.3     140    577.5     170
GR    579.5     185    586 4     195    586.7     219    585.5     245    584.8     265
GR    581.4     282    580.9     345    581.0     645    581.2     945    581.6    1090
GR    582.6    1145    583.2    1245    582.9    1345    582.9    1445    584.0    1545
GR    586.8    1645    583.8    1745    583 6    1845    585 0    1945    584.3    2045
GR    585.3    2105    581.8    2114    581.5    2115    579.8    2125    578.6    2135
GR    577.6    2145    561.6    2225    560.6    2235    560.6    2245    559.6    2255
GR    559 6    2265    558.6    2285    558.6    2305    557.6    2315    556.6    2335
GR    556.6    2345    556.1    2355    555.1    2365    554.1    2385    553.1    2395
GR    552.6    2405    552.6    2415    554.6    2425    554.6    2455    555.6    2465
GR    556.6    2485    558.6    2495    561.6    2505    564 6    2525    568.6    2535
GR    570.6    2545    571 6    2555    573 6    2565    573.6    2575    575.6    2585
GR    580.6    2635    581.1    2640    581.5    2645    581 9    2646    582.9    2695
GR    584.1    2745    589.2    2810

        6295' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AK
X1   15.612       0        0        0      750      750      750       0    -.310       0
X3        0       0        0     2100

NH      5.0    .035     1113    .025     1273    .035     1703    .025     2073     035
NH     2293
        9235' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AL
X1   16.169      83     1075     2084     2940     2940     2940
X3        0       0        0     1000        0     2084
GR    589.5       0    587.5       28    582.2       43    582.3       53    588 2       63
GR    589.7      77    582 2      101    581 0      109    582.0      118    587.1      128
GR    587.7     163    587.1      183    586.7      283    586.4      383    585.6      483
GR    585.1     583    585.0      583    585.0      683    585.8      883    585.9      983
GR    585.9    1071    587.6     1075    581.8     1083    578.7     1103    578.7     1113
GR    576 7    1123    575.7     1133    574.2     1143    573.7     1153    573 2     1163
GR    573.2    1173    572.7     1183    572.7     1223    573.7     1243    574.7     1253
GR    578.7    1273    579.7     1278    581.6     1282    581 5     1283    585.9     1288
GR    588.3    1383    592.7     1483    597.1     1583    603.2     1658    582.6     1685
GR    581 8    1692    581.6     1693    578.2     1703    577 2     1713    575 7     1723
GR    573 7    1743    570.7     1753    568.7     1763    565.2     1773    563.2     1783
GR    562 2    1793    559.7     1803    558.7     1813    558.7     1823    558.2     1833
GR    556 7    1843    556.7     1853    555 7     1873    555.7     1893    555.2     1903
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GR     554.2      1913      553.7      1923      553.7      1933      552.7      1953      552.7      1983
GR     553.7      2003      553.7      2023      554.2      2033      555.7      2043      559.7      2053
GR     563.2      2063      577.7      2073      579.7      2078      581 6      2083      582.4      2084
GR     586.9      2093      590.6      2148      590.5      2293

NH       3.0      .035       845       .028      1485       .035      1790
         1455' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AM
X1    16.500        76       832      1491      1750      1750      1750
X3         0         0         0       832         0      1491
GR     589.7         0      587.9        90      587.8       190      588.7       290      588.7       297
GR     588.0       390      589.3       490      589.0       590      589.2       690      588.9       790
GR     588.5       820      582.5       832      581.9       833      579.0       845      576.5       850
GR     575 0       880      575 0       900      574.5       910      574.7       920      574 5       930
GR     574.5       940      574 0       950      574.0       960      573 5       970      573 2       980
GR     572.0       990      571.5      1000      571.5      1020      572.4      1030      574.5      1040
GR     575.0      1050      575.0      1060      575.2      1070      573 0      1080      570.0      1090
GR     569.5      1100      568.2      1110      565.5      1120      565.5      1130      566 0      1140
GR     566.0      1150      565.0      1160      563.7      1170      561.0      1180      559.0      1190
GR     558.0      1200      557.5      1210      556.0      1220      556.0      1240      555.0      1250
GR     554.3      1260      554.5      1270      555.5      1290      555.5      1300      556 0      1310
GR     556.0      1320      555.5      1330      554.9      1340      555.0      1350      555.0      1360
GR     555.5      1370      555 5      1390      556.0      1400      556.0      1410      556 3      1420
GR     557.0      1430      557.0      1440      563.0      1470      574 8      1480      579.0      1485
GR     581.5      1490      582.0      1491      588.2      1500      589.2      1590      589.3      1690
GR     590.9      1790

QT         2     68000     82000
NH       3.0      .035        55       .027       480       .035       600
         95' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE        SEC. AN
X1    16.758        45        54       501      1360      1360      1360
GR     589.8         0      590.4        25      587.6        54      557.3        55      556.3        70
GR     556.3        80      556.3       110      554 3       130      553.8       140      553.8       150
GR     553.3       160      551.3       170      551.3       190      551.3       200      552.3       210
GR     559.8       220      561 8       230      555.0       240      551.8       270      548.8       280
GR     548.8       288      548.1       300      549.3       310      549.3       330      549.8       340
GR     549.8       350      554.3       360      556.8       370      562.8       380      563.8       390
GR     563.8       410      565.3       420      565 3       430      565.8       440      567.8       450
GR     573.8       460      576.4       470      578.8       480      580.2       490      580.8       495
GR     581 7       500      581 9       501      583.4       510      586.1       520      589.3       500

NH       3 0      .035       770       .028      1320       .035      3670
X1    16 775        87       770      1340        95        95        95
X3         0         0         0       770         0      1340
GR     590.4         0      589.0       170      590.4       470      590.8       670      593.4       770
GR     583.5       770      580.7       780      578.6       790      577.1       800      575.6       810
GR     575.0       820      573.3       830      572.8       840      572.3       850      570.5       860
GR     564.9       870      556.2       880      553.6       890      552.2       900      552.5       910
GR     550 6       920      550.7       930      550.1       940      552.1       950      556.3       960
GR     560.5       970      555.7       980      552.8       990      550.1      1000      548.4      1010
GR     548.1      1020      547.8      1030      548 9      1040      549.3      1050      566.8      1060
GR     567.0      1070      565.7      1080      564.1      1090      562.3      1100      561.2      1110
GR     561.7      1120      563.1      1130      564 0      1140      564.4      1150      566.3      1160
GR     567.1      1170      566.3      1180      567.2      1190      568.6      1200      571.4      1210
GR     575.2      1220      576.5      1230      577.1      1240      578.3      1250      579.4      1260
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GR    580.8      1270      581.9      1280      582.4      1290      583.0      1300      582.8      1310
GR    584.5      1320      589.3      1330      594 6      1340      593.2      1370      591.2      1470
GR    589.7      1570      589.3      1670      589.3      1770      589.0      1870      589.1      1970
GR    589.7      2070      590.1      2170      589 8      2270      589.5      2370      589.2      2470
GR    589.5      2570      589.9      2670      590.3      2770      590.4      2870      589.9      2970
GR    589.5      3070      589.4      3170      589.3      3270      589.1      3370      589.3      3470
GR    589.6      3570      589.8      3670

NH      3.0       .035       770       .028      1320       .035      1342
          D/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AO
X1   16 776        95       770      1342         1          1         1
X3        0         0         0       770         0       1342
GR    590.4         0      589 0       170     590.4       470     590.8       670     593.4       770
GR    583.5       770     580.7       780     580.0     783.5     593.9     783.5     594.0     784.5
GR    579.8     784.5     576.9     801.5     594.7     801.5     594.8     802.5     576.7     802.5
GR    575.6       810     575.0     819.5     595.4     819.5     595.4     820.5     574.9     820 5
GR    573.3       830     572.9     837.5     596 1     837.5     596.1     838.5     572.9     838.5
GR    572.3       850     571.3     855.5     596.3     855.5     596.3     856.5     571.1     856.5
GR    570.5       860     564.9       870     596.2       870     596.2       878     557.9       878
GR    556.2       880     553 6       890     552 2       900     552.5       910     550 7       930
GR    550.1       940     552.1       950     555 9       959     596.3       959     596.3       979
GR    556.2       979     555.7       980     552.8       990     548 4      1010     547.8      1030
GR    549.3      1050     566.8      1062     596.1      1062     596.1      1070     567.0      1070
GR    564.1      1090     562.3      1100     561.2      1110     561.7      1120     564.0      1140
GR    564 4      1150     566.3      1160     567.1      1170     566 3      1180     568.6      1200
GR    573.7      1216     596.2      1216     596.2      1224     575.7      1224     577.0    1237.5
GR    596.4    1237.5     596.5    1238.5     577.0    1238.5     578.9    1255 5     596.5    1255.5
GR    596.5    1256.5     579 0    1256.5     581.2    1273.5     596.3    1273.5     596.3    1274.5
GR    581.3    1274.5     582 5    1291.5     595.8    1291.5     595 8    1292 5     582.6    1292.5
GR    582.8    1309.5     595.4    1309.5     595.4    1310.5     582.9    1310.5     584.5      1320
GR    588.1    1327.5     594.8    1327.5     594 8    1328.5     588.6    1328.5     594.6      1342

X1   16 781         0         0         0        27        27        27
X3        0         0         0       770         0       1342

NH      3.0       035       770       .028      1320       .035      3670
X1   16.782        87       770      1340         1          1         1
X3        0         0         0       770         0       1340
GR    590.4         0     589.0       170     590.4       470     590.8       670     593.4       770
GR    583 5       770     580.7       780     578.6       790     577 1       800     575.6       810
GR    575.0       820     573.3       830     572.8       840     572.3       850     570.5       860
GR    564.9       870     556.2       880     553.6       890     552.2       900     552.5       910
GR    550 6       920     550.7       930     550.1       940     552.1       950     556.3       960
GR    560.5       970     555 7       980     552.8       990     550.1      1000     548 4      1010
GR    548.1      1020     547.8      1030     548.9      1040     549.3      1050     566.8      1060
GR    567.0      1070     565.7      1080     564.1      1090     562.3      1100     561.2      1110
GR    561.7      1120     563.1      1130     564.0      1140     564.4      1150     566.3      1160
GR    567.1      1170     566.3      1180     567 2      1190     568.6      1200     571.4      1210
GR    575.2      1220     576.5      1230     577 1      1240     578.3      1250     579.4      1260
GR    580.8      1270     581.9      1280     582.4      1290     583.0      1300     582 8      1310
GR    584.5      1320     589.3      1330     594.6      1340     593 2      1370     591.2      1470
GR    589.7      1570     589 3      1670     589.3      1770     589.0      1870     589.1      1970
GR    589.7      2070     590.1      2170     589.8      2270     589.5      2370     589.2      2470
GR    589.5      2570     589 9      2670     590.3      2770     590.4      2870     589.9      2970
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GR    589.5      3070      589 4      3170      589.3      3270      589 1      3370      589.3      3470
GR    589.6      3570      589.8      3670

NH      3.0       .035       402       .026       907       .035      1512
          2645' U/S FROM U/S FACE OF SIXTH AVENUE BRIDGE        SEC. AP
X1   17.282        55       320       912       2644      2644      2644
X3       0         0         0       320          0       912
GR    591.4         0     591.6        12     589.5       112     588.4       212     585.2       297
GR    581.8       320     580.9       332     578.4       382     578.4       402     577 9       412
GR    577.7       422     576.9       432     576.4       442     575 4       452     570.9       482
GR    570.6       492     570.4       502     570.4       522     568.9       532     568.4       542
GR    566 4       562     562.9       572     561.4       582     560 9       592     560.9       612
GR    559 9       632     559.9       642     559 4       652     558.4       662     558.4       672
GR    557.9       682     556.7       692     556.9       702     556.4       712     557 4       722
GR    556.9       732     556 9       772     556.4       782     556.4       792     555.8       802
GR    555.9       812     555.9       822     556.9       842     560.9       862     561.4       872
GR    565.4       882     570.9       892     577.9       907     583.7       912     586.5      1012
GR    590.6      1112     593 9      1212     595.0      1312     594.4      1412     595.0      1512

NH      3.0       .035       570       .027       980       .035      1710
          175' D/S FROM D/S FACE OF C&O RAILROAD BRIDGE         SEC. AG
X1   17 758        54       540       990       2510      2510      2510
X3       0         0         0       540          0       990
GR    591.2         0     590.7       100     589.9       200     588.3       300     587.9       400
GR    586.7       500     586.9       518     581.7       540     579.8       550     573 8       570
GR    569.8       580     563.8       600     562.8       610     563.8       620     566.3       630
GR    565.4       640     563.8       650     564.3       660     563.3       670     562.8       680
GR    563.8       690     565.8       730     564.8       740     562.8       750     559.3       760
GR    557.8       770     556.8       780     554.8       790     554.2       800     554.3       810
GR    554.3       820     556.3       840     555.8       850     556.8       860     556.3       870
GR    556.3       890     556.8       900     556.8       910     557.3       920     558.9       930
GR    561.8       940     565.3       950     567 8       960     573.3       970     577 3       980
GR    581.3       990     586.9      1000     588 7      1100     592.1      1300     592.3      1400
GR    592.5      1500     591.7      1578     591.4      1600     592.5      1710

NC      035       035      .028        .1        .2
X1   17.790        95      1125      1857       173       173       173
GR    593.9         0     593.7       125     593.3       325     593.1       425     593.0       525
GR    593.1       625     593 3       825     594.3       925     595.8      1025     596.8      1125
GR    579.7      1127     578.8      1135     577.7      1145     577.7      1175     578.2      1182
GR    578.2      1185     578.5      1188     577.2      1195     577.2      1225     576.2      1245
GR    576.2    1245.5     575.7    1254.5     575.7      1255     577 2      1265     577.2      1285
GR    576.2      1305     575.4      1315     574.4      1325     573.7      1335     571.2      1345
GR    570.3    1354.5     570.2      1355     570.6    1363.5     570.7      1365     566.2      1375
GR    568.2      1385     571.1      1395     571.2      1405     570.7      1415     568.2      1424
GR    566.7      1435     566.7      1445     565.2      1455     570.7      1465     570 9    1468.5
GR    571.2      1475     571.0    1477.5     570.2      1485     564.2      1495     566.9      1505
GR    568.2      1515     568.1      1525     565.7      1535     562.4      1545     563.7      1555
GR    562.9      1565     555.5      1585     558.2      1595     558.0    1598.5     557.7      1605
GR    557.7    1607.5     557.7      1615     551 6      1625     551.6      1635     551.2      1645
GR    554.1      1655     557.2      1665     558 2      1675     558.2      1695     557.7      1705
GR    556.2      1715     555.6      1725     555.1      1735     555.2      1745     556.2      1755
GR    556.2      1765     559 6      1773     560.5      1775     560 5      1781     560.5      1785
GR    562.2      1795     566.8      1805     569.7      1815     576 7      1825     578.5      1835
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GR    579.8      1845      580.7      1853      596.9      1857      596.9      1865      596.4      1925
GR    595.7      2025      595.2      2125      594.8      2225      594.3      2325      593.9      2425

        D/S FACE OF C&O RAILROAD BRIDGE        SEC.  AR
X1   17.791        95      1125      1857         1         1         1
BT      26         0      593 9         0       125     593.7         0       325     593.3         0
BT     525     593.0         0       625     593.1         0       825     593 5         0       725
BT   594.3         0      1025     595.8         0      1125     596.8     589.6      1182     596.8
BT   589.6      1188      596 8     589.6    1245.5     596.8     589.7    1254 5     596.8     589.7
BT  1254 5     596.8     591.8    1354.5     596.8     591.8    1477.5     596 8     591.8    1598 5
BT   596.9     591.9    1607.5     596.9     591 9    1607.5     596.9     592.6      1773     596.9
BT   592.6      1773     596.9     592.5      1781     596.9     592 5      1857     596 9     591.7
BT    1865     596 9         0      1925     596.4         0      2025     595.7         0
GR   593.9         0     593.7       125     593.3       325     593 0       525     593.1       825
GR   593.5       825     594.3       925     595.8      1025     596.8      1125     579.7      1125
GR   577.7      1145     577 7      1175     578.2      1182     589.6      1182     589.6      1188
GR   578 5      1188     577.2      1195     577.2      1225     576 2      1245     576.2    1245.5
GR   589.7    1245.5     589.7    1254.5     575.7    1254.5     575.7      1255     577.2      1265
GR   577.2      1285     576.2      1305     575.4      1315     574.4      1325     573.7      1335
GR   571.2      1345     570 3    1354.5     591.8    1354.5     591.8    1363.5     570.6    1363.5
GR   570.7      1365     566 2      1375     568.2      1385     571.1      1395     571.2      1405
GR   570.7      1415     568.2      1424     566.7      1435     566.7      1445     565.2      1455
GR   570.7      1465     570.9    1468.5     591.8    1468.5     591.8    1477.5     571.0    1477.5
GR   570.2      1485     564.2      1495     566.9      1505     568.2      1515     568.1      1525
GR   565.7      1535     562.4      1545     563.7      1555     562 9      1565     555.5      1585
GR   558 2      1595     558.0    1598.5     591.9    1598.5     591.9    1607.5     557.7    1607.5
GR   557.7      1615     551.6      1625     551.6      1635     551.2      1645     554.1      1655
GR   557.2      1665     558.2      1675     558.2      1695     557.7      1705     556.2      1715
GR   555.1      1735     555.2      1745     556.2      1755     556.2      1765     559.6      1773
GR   592.5      1773     592.5      1781     560.5      1781     560 5      1785     562.2      1795
GR   566.8      1805     569.7      1815     576.7      1825     578.5      1835     579.8      1845
GR   580.7      1857     596 9      1857     596.9      1865     596.4      1925     595.7      2025

X1   17.797         0         0         0        32        32        32
X2       0         0         0         0         0         0       1.0         0         0         0

X1   17.798        95      1125      1857         1         1         1
GR   593.9         0     593.7       125     593.3       325     593 1       425     593 0       525
GR   593 1       625     593.3       825     594.3       925     595.8      1025     596.8      1125
GR   579.7      1127     578.8      1135     577.7      1145     577 7      1175     578.2      1182
GR   578.2      1185     578.5      1188     577.2      1195     577.2      1225     576.2      1245
GR   576.2    1245 5     575.7    1254.5     575.7      1255     577.2      1265     577.2      1285
GR   576.2      1305     575.4      1315     574.4      1325     573.7      1335     571.2      1345
GR   570.3    1354 5     570.2      1355     570.6    1363.5     570.7      1365     566.2      1375
GR   568 2      1385     571.1      1395     571.2      1405     570.7      1415     568.2      1424
GR   566.7      1435     566.7      1445     565.2      1455     570.7      1465     570.9    1468.5
GR   571.2      1475     571.0    1477.5     570.2      1485     564 2      1495     566.9      1505
GR   568 2      1515     568.1      1525     565.7      1535     562.4      1545     563 7      1555
GR   562 9      1565     555.5      1585     558.2      1595     558.0    1598.5     557.7      1605
GR   557.7    1607 5     557.7      1615     551.6      1625     551.6      1635     551 2      1645
GR   554.1      1655     557.2      1665     558.2      1675     558.2      1695     557.7      1705
GR   556.2      1715     555.6      1725     555.1      1735     555.2      1745     556.2      1755
GR   556.2      1765     559.6      1773     560.5      1775     560.5      1781     560.5      1785
GR   562.2      1795     566.8      1805     569.7      1815     576.7      1825     578.5      1835
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GR    579.8      1845      580.7      1853      596.9      1857      596 9      1865      596.4      1925
GR    595.7      2025      595.2      2125      594.8      2225      594.3      2325      593.9      2425

NH      3.0      .035       1345      .026       1825      .035       1999
          140' D/S FROM D/S FACE OF I-675 BRIDGE      SEC.  AS
X1   18.134        60       1275      1835      1783      1783       1783
X3        0         0          0      1275         0      1835
GR    588.5         0      590.4        75     590.8       102      590.2       175      590.1       275
GR    589.3       375      589.4       475     588.5       575      588.4       675      588.2       775
GR    588.6       875      589.9       975     588 2      1075      587.2      1175      588.7      1233
GR    582.0      1275      581.5      1280     581.1      1285      580.6      1295      580.6      1305
GR    580.1      1315      580.1      1325     579.6      1335      578.6      1345      577.1      1355
GR    574.6      1365      573 1      1375     572 1      1385      570.1      1395      568.1      1435
GR    568 3      1445      567.6      1455     566 6      1465      566.1      1475      566.1      1505
GR    566.1      1515      566.1      1525     565.6      1535      565.6      1555      562.1      1565
GR    562.1      1575      560.1      1595     560.4      1605      560.1      1615      560.1      1635
GR    558.6      1665      559.6      1675     559.6      1685      559 1      1695      558.1      1705
GR    558.1      1725      560 1      1745     560.1      1775      562.1      1795      574.1      1825
GR    582.0      1835      590.5      1847     591.0      1875      593.0      1975      593.3      1999

NH      3.0      .035       1130      .027       1631      .035       2120
X1   18.160        67       1000      1640       141       141        141
X3        0         0          0      1100         0      1750
GR    591.4         0      590 6       100     590.0       200      589.8       300      588.0       400
GR    587.8       500      587.5       600     587.6       700      587.6       800      587.5       900
GR    586.5      1000      584.2      1100     581 9      1129      581.7      1130      580.8      1135
GR    579.8      1140      576.8      1150     574.8      1160      574.8      1170      572.8      1180
GR    571.3      1190      570.8      1200     569.8      1210      566.8      1220      566.3      1230
GR    565.3      1240      563.3      1250     563.8      1260      565.3      1270      564.8      1280
GR    565.3      1290      565.3      1300     566.3      1310      565.8      1320      564 8      1330
GR    564.8      1340      563.8      1350     561.8      1360      560.3      1370      559.8      1380
GR    558.8      1390      558 3      1400     558.3      1410      557.8      1420      557 8      1470
GR    556 8      1490      556.8      1500     562.8      1520      561.8      1530      562.8      1540
GR    560.8      1550      560.8      1560     562.8      1570      566.8      1580      574.8      1590
GR    577 8      1600      579.8      1610     579.8      1620      581.7      1630      582 5      1631
GR    590.6      1640      591.5      1700     592 5      1800      593.2      1900      593.6      2000
GR    592.7      2100      595.9      2120

NH      3.0       035       1132      .028       1631      .035       1700
          D/S FACE OF I-675 BRIDGE      SEC.  AT
X1   18.161        95       1063      1700          1         1          1
X3        0         0          0      1100         0      1750
GR    591.4         0      590 6       108     619.1       108      619.1       132      590.4       132
GR    590.0       200      589.8       300     588 0       400      587.8       500      587.5       600
GR    586.6       692      619.3       692     619.3       710      587.6       710      587.5       700
GR    587.3       924      619.4       924     619.4       927      587.2       927      586.6       990
GR    619.4       990      619.4       993     586.6       993      586.5      1000      586.9      1060
GR    619.5      1060      619.5      1063     586.9      1063      584 2      1100      581.9      1129
GR    619.5      1129      619 5      1132     581.3      1132      579.8      1140      576.8      1150
GR    574.8      1160      574.8      1170     572.8      1180      571.3      1190      570.8      1200
GR    618.7      1200      618.7      1203     570.5      1203      569.8      1210      566.8      1220
GR    566.3      1230      565.3      1240     563.3      1250      563.8      1260      565.3      1270
GR    617.9      1270      617.9      1273     565.2      1273      564.8      1280      565.3      1290
GR    565.3      1300      566.3      1310     565.8      1320      564.8      1330      564.8      1340
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GR	563.8	1350	561.8	1360	560.3	1370	559.8	1380	616.7	1380
GR	616.7	1383	559.5	1383	558.8	1390	558.3	1400	558.3	1410
GR	557.8	1420	557.8	1470	556.8	1490	556.8	1500	562.8	1520
GR	562.5	1523	615.1	1523	615.1	1526	562.2	1526	561.8	1530
GR	562.8	1540	560.8	1550	560.8	1560	562.8	1570	566.8	1580
GR	574.8	1590	577.8	1600	579.8	1610	579.8	1620	581.7	1630
GR	582.5	1631	613.9	1631	613.9	1697	591.5	1697	591.5	1700
X1	18.180	0	0	0	96	96	96			
X3	0	0	0	1100	0	1750				
NH	3.0	035	1130	.027	1631	.035	2120			
X1	18.181	67	1000	1640	1	1	1			
X3	0	0	0	1100	0	1750				
GR	591.4	0	590.6	100	590.0	200	589.8	300	588.0	400
GR	587.8	500	587.5	600	587.6	700	587.6	800	587.5	900
GR	586.5	1000	584.2	1100	581.9	1129	581.7	1130	580.8	1135
GR	579.8	1140	576.8	1150	574.8	1160	574.8	1170	572.8	1180
GR	571.3	1190	570.8	1200	569.8	1210	566.8	1220	566.3	1230
GR	565.3	1240	563.3	1250	563.8	1260	565.3	1270	564.8	1280
GR	565.3	1290	565.3	1300	566.3	1310	565.8	1320	564.8	1330
GR	564.8	1340	563.8	1350	561.8	1360	560.3	1370	559.8	1380
GR	558.8	1390	558.3	1400	558.3	1410	557.8	1420	557.8	1470
GR	556.8	1490	556.8	1500	562.8	1520	561.8	1530	562.8	1540
GR	560.8	1550	560.8	1560	562.8	1570	566.8	1580	574.8	1590
GR	577.8	1600	579.8	1610	579.8	1620	581.7	1630	582.5	1631
GR	590.6	1640	591.5	1700	592.5	1800	593.2	1900	593.6	2000
GR	592.7	2100	592.9	2120						
NC	.035	.035	.028	.1	.2					
X1	18.267	66	1075	1593	467	467	467			
X3	0	0	0	1075	0	1593				
GR	589.4	0	589.1	75	589.1	175	589.4	275	589.4	375
GR	589.5	475	589.5	575	590.0	675	591.5	775	592.7	875
GR	594.3	975	597.1	1075	585.4	1075	583.9	1085	582.0	1095
GR	581.0	1105	580.6	1115	579.7	1125	578.8	1135	576.8	1145
GR	575.3	1155	572.6	1165	571.8	1175	570.5	1185	567.8	1195
GR	562.9	1205	563.8	1215	562.9	1225	561.8	1235	563.8	1245
GR	563.4	1255	562.7	1265	563.5	1275	559.8	1285	560.9	1295
GR	561.7	1305	563.6	1315	565.0	1325	564.5	1335	562.7	1345
GR	562.7	1355	561.6	1365	557.1	1375	556.8	1385	555.0	1395
GR	552.6	1405	553.9	1415	553.5	1425	553.8	1435	554.1	1445
GR	554.1	1455	554.4	1465	554.8	1475	555.7	1485	556.5	1495
GR	558.5	1505	560.0	1515	559.4	1525	564.7	1535	565.1	1545
GR	567.0	1555	568.6	1565	571.0	1575	576.2	1585	578.6	1593
GR	596.2	1593								

D/S FACE OF JOHNSON STREET BRIDGE SEC. AU

X1	18.268	81	1075	1593	1	1	1			
X3	0	0	0	1075	0	1593				
BT	31	0	589.4	0	75	589.1	0	175	589.1	0
BT	275	589.4	0	375	589.4	0	475	589.5	0	575
BT	589.5	0	675	590.0	0	775	591.5	0	875	592.7
BT	0	975	594.3	0	1075	597.1	592.5	1075	599.0	592.5

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BT     1229     599.7     593.2     1395     599.7     593.2     1395     599.7     588.1     1405
BT    599.7     588.1      1415    599.7     590.0      1425    599.7     591.4      1435    599.7
BT    592.5      1445     599.7    593.1      1455    599.7     593.3      1465    599.7     593.0
BT     1475     599.7     592.2     1485     599.7     591.0      1495    599.7     589.5      1502
BT    599.7     588.1      1512    599 7     588 1      1512    599 7     593.2      1593    598 1
BT    591.5      1593     596.2       0
GR    589.4        0     589.1      75     589.1      175     589.4      275     589.4      375
GR    589.5      475     589.5     575     590.0      675     591.5      775     592.7      875
GR    594.3      975     592.5    1075     585.4     1075     583.9     1085     582.0     1095
GR    581.0     1105     580.6    1115     579.7     1125     578.8     1135     576.8     1145
GR    576 2     1149     592.5    1149     592.5     1155     575.3     1155     572.6     1165
GR    571.8     1175     570.5    1185     567.8     1195     562.9     1205     563.8     1215
GR    562.9     1225     562.5    1229     593 2     1229     593.2     1235     561.8     1235
GR    563.8     1245     563 4    1255     562.7     1265     563.5     1275     559.8     1285
GR    560.9     1295     561.7    1305     562.3     1308     593.2     1308     593.2     1314
GR    563.4     1314     563.6    1315     565.0     1325     564.5     1335     562.7     1345
GR    562.7     1355     561.6    1365     557.1     1375     556.8     1385     555.0     1395
GR    588.1     1395     588.1    1405     552 6     1405     553.9     1415     553.5     1425
GR    553.8     1435     554.1    1445     554.1     1455     554.4     1465     554.8     1475
GR    555.7     1485     556 5    1495     557.9     1502     588.1     1502     588.1     1512
GR    559.6     1512     560.0    1515     559.4     1525     564.7     1535     565.1     1545
GR    567.0     1555     568.6    1565     571.0     1575     576.2     1585     578.6     1593
GR    596.2     1593

X1   18.273        0        0        0       26       26       26
X2        0        0        0        0        0        0        1
X3        0        0        0     1075        0     1593

X1   18.274       66     1075     1593        1        1        1
X3        0        0        0     1075        0     1593
GR    589.4        0     589.1      75     589.1      175     589.4      275     589.4      375
GR    589.5      475     589.5     575     590.0      675     591.5      775     592.7      875
GR    594.3      975     597 1    1075     585.4     1075     583 9     1085     582.0     1095
GR    581.0     1105     580.6    1115     579.7     1125     578.8     1135     576.8     1145
GR    575.3     1155     572.6    1165     571.8     1175     570 5     1185     567.8     1195
GR    562.9     1205     563.8    1215     562.9     1225     561.8     1235     563.8     1245
GR    563.4     1255     562.7    1265     563.5     1275     559.8     1285     560 9     1295
GR    561 7     1305     563.6    1315     565.0     1325     564 5     1335     562.7     1345
GR    562.7     1355     561.6    1365     557.1     1375     556.8     1385     555.0     1395
GR    552.6     1405     553.9    1415     553.5     1425     553.8     1435     554.1     1445
GR    554.1     1455     554 4    1465     554.8     1475     555.7     1485     556.5     1495
GR    558.5     1505     560.0    1515     559.4     1525     564.7     1535     565.1     1545
GR    567.0     1555     568.6    1565     571.0     1575     576.2     1585     578.6     1593
GR    596.2     1593

NH      2.0      .035      418      .028      848
          327' U/S FROM U/S FACE OF JOHNSON STREET BRIDGE        AV
X1   18.335       43      418      848      326      326      326
X3        0        0        0      418        0      848
GR    593 9        0     593.9       18     594.2      118     595.0      218     595.8      318
GR    595 3      398     585.7      413     584.8      417     576.7      418     575.7      428
GR    567 7      468     567.2      478     565.7      488     565.7      528     565.2      538
GR    561.7      548     561.7      558     563.7      568     561.7      588     557.4      598
GR    556.7      608     556.7      618     556.2      628     556.7      638     556.7      648
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GR    557.2      658     556.7      668     556.7      678     555.7      698     555.7      708
GR    555.8      718     555.7      728     556.7      738     558.7      748     559.7      758
GR    559.7      778     559.7      788     560.7      788     560 7      798     561.7      818
GR    569.7      838     571.7      848     591.2      848

NH      3.0     .035       400      028     840.5     .035      1010
X1    18 43       74       400    840.5       507      507       507
X3        0        0         0      400         0      841
GR    593.5        0     593.3      100     594.1      200     596.2      300     599.5      400
GR    585.3      403     576.4    404.9     575.9      405     571.8      410     569.4      420
GR    567.5      430     565.9      440     564.6      450     565.4      460     561.6    467.5
GR    560.4      470     561 6    472.5     560.6    475.5     561.4      480     561.6    480.5
GR    565.4      490     562.9      500     563.4      510     559.4      520     556.4      530
GR    556.4    539.5     556 4      540     558.6    544.5     560.2    547.5     561.4      550
GR    561.9    552 5     559.4      560     561.4      570     562.4      580     564.9      590
GR    564.4      600     564 9      610     569.4      620     569.4      621     569.4      630
GR    569.3      631     568.7      637     568.4      640     565.9      649     565.4      650
GR    555.9      660     556 4      670     555.4      680     555.4      690     556.4      700
GR    556.4      720     558 4      730     564.4      740     564 8      741     568 4      750
GR    568 7      753     569.3      759     569.4      760     566.7      769     566.4      770
GR    565.9      780     565.9      790     565.4      800     567 4      810     568.4      820
GR    571.4      830     575.4      837     576.2    840.5     585 0    843.5     592 5      866
GR    593.2      900     599.6      900     594.1     1000     593.9     1010

NC      035     .035      .028       .1        .2
          D/S FACE OF GENESEE AVENUE BRIDGE        SEC.  AW
X1   18.431       92       400    840.5         1        1        1
X3        0        0         0      400         0      841
GR    593.5        0     593.3      100     594.1      200     596.2      300     599.5      400
GR    584.7      400     584.7      403     582.7      403     582.7    404.9     575.9    404.9
GR    575.9      405     571 8      410     569.4      420     567.5      430     565.9      440
GR    564.6      450     565.4      460     561.6    467.5     585.3    467.5     585.3    472.5
GR    596.9    472.5     596.9    475.5     585 3    475.5     585.3    480.5     561.6    480.5
GR    565.4      490     562 9      500     563.4      510     559.4      520     556.4      530
GR    556.4    539.5     585.4    539.5     585.4    544 5     599 4    541.5     599.4    547.5
GR    585.4    547.5     585.4    552.5     561.9    552.5     559.4      560     561.4      570
GR    562.4      580     564.9      590     564.4      600     564.9      610     569.4      620
GR    569.4      621     583.6      621     583.6      631     585.6      631     585.6      637
GR    598.2      637     598.2      640     583.6      640     583.6      649     565.7      649
GR    565.4      650     555.9      660     556.4      670     555 4      680     555.4      690
GR    556.4      700     556.4      720     558.4      730     564.4      740     564.8      741
GR    583.8      741     583.8      750     596.8      750     596.8      753     585.8      753
GR    585.8      759     583.8      759     583.8      769     566.7      769     566 4      770
GR    565.9      780     565.9      790     565.4      800     567.4      810     568.4      820
GR    571 4      830     575.4      837     585.0      837     585.0    840 5     596.6    840.5
GR    596.6    843.5     585.0    843.5     592.5      866     593.2      900     599.6      900
GR    594.1     1000     593.9     1010

X1   18.444        0         0        0        64       64       64
X3        0        0         0      400         0      841
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X1    18.445        74       400     840.5         1         1         1
X3         0         0         0       400         0       841
GR     593.5         0     593.3       100     594.1       200     596.2       300     599.5       400
GR     585.3       403     576.4     404.9     575.9       405     571.8       410     569.4       420
GR     567.5       430     565.9       440     564.6       450     565.4       460     561.6     467.5
GR     560.4       470     561.6     472.5     560.6     475.5     561.4       480     561.6     480.5
GR     565.4       490     562.9       500     563.4       510     559.4       520     556.4       530
GR     556.4     539.5     556.4       540     558.6     544.5     560.2     547.5     561.4       550
GR     561.9     552.5     559.4       560     561.4       570     562.4       580     564.9       590
GR     564.4       600     564.9       610     569.4       620     569.4       621     569.4       630
GR     569.3       631     568.7       637     568.4       640     565.9       649     565.4       650
GR     555.9       660     556.4       670     555.4       680     555.4       690     556.4       700
GR     556.4       720     558.4       730     564.4       740     564.8       741     568.4       750
GR     568.7       753     569.3       759     569.4       760     566.7       769     566.4       770
GR     565.9       780     565.9       790     565.4       800     567.4       810     568.4       820
GR     571.4       830     575.4       837     576.2     840.5     585.0     843.5     592.5       866
GR     593.2       900     599.6       900     594.1      1000     593.9      1010

NH       3.0      .035       280      .027       699      .035      1300
         820' U/S FROM U/S FACE OF GENESEE AVENUE BRIDGE        SEC. AX
X1    18.598        44       265       700       817       817       817
X3         0         0         0       265         0       700
GR     592.1         0     592.2       100     590.4       200     590.5       246     581.9       265
GR     579.7       270     577.8       280     575.5       290     574.0       300     571.0       330
GR     569.0       340     567.5       370     566.0       380     565.0       390     564.0       400
GR     564.0       410     562.5       440     562.5       470     562.0       480     562.0       490
GR     562.1       500     562.0       510     561.5       520     561.5       530     561.0       540
GR     561.0       570     559.0       590     558.9       600     560.0       620     559.5       630
GR     559.5       630     559.5       640     560.0       650     560.0       660     563.0       670
GR     565.0       680     572.0       690     575.0       699     590.5       700     591.7       700
GR     592.4      1000     594.0      1100     595.3      1215     594.3      1300

NH       3.0      .035       230      .027       630      .035      1188
         360' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2     SEC. AY
X1    18.871        48       190       650      1440      1440      1440
X3         0         0         0       190         0       650
GR     590.4         0     590.2        50     587.2       150     586.8       190     582.8       200
GR     579.9       210     577.9       220     576.9       230     573.9       240     569.9       250
GR     565.9       270     564.8       280     563.9       290     563.9       300     562.9       310
GR     562.9       320     561.9       340     561.4       350     561.4       360     560.9       370
GR     560.9       380     559.9       400     559.9       410     557.9       430     557.9       440
GR     558.9       450     559.4       460     560.1       470     559.9       480     559.9       510
GR     558.9       520     558.9       530     559.4       540     559.4       570     560.9       580
GR     562.9       590     564.9       600     567.6       610     571.4       620     578.2       630
GR     582.8       640     589.4       650     593.0       750     592.8       850     593.2       950
GR     593.9      1050     594.7      1150     595.3      1188

NH       3.0      .035       300      .028       850      .035      1330
X1    18.938        78       300       850       357       357       357
GR     593.6         0     594.5       100     595.5       200     596.4       300     588.2       300
GR     588.3       310     582.3       333     581.2    334.25     579.7    339.75     579.6       340
GR     579.1       350     578.6       360     579.0       370     578.9     375.5     578.9       380
GR     576.2     382.5     568.0       390     567.1       400     565.3       410     565.3       420
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GR    564 1       430     562.4       440     561.9       450     561.6       460     561.0       470
GR    559.1       480     556.6       490     556.5       500     565.0       510     564.9       514
GR    564.7       520     564.3       520     564.3       522     562.7       530     561.4       540
GR    561.5       550     556.6       560     555 8       570     555.2       580     555.5       590
GR    554 9       600     555.0       610     555.3       615     557.2       645     557.5       650
GR    557.4       660     556.9       670     557.3       680     557.5       690     557 9       700
GR    558.8       710     561.4       720     562.1       730     567.8       739     568.4       740
GR    571.2       747     572.4       750     575.0       760     575 6       770     576.2      776 5
GR    576.6       780     577.5     783.5     579.3       790     579.8       800     581.1       810
GR    583 5    814 25     586.6    819.75     586.8       820     588.0       830     590.6       840
GR    591.2       850     596.8       850     596.8       900     596.9      1000     596.6      1100
GR    596.6      1200     596.5      1300     596.3      1330

NC      035      .035      .028        .1        .2
        D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2   SEC.  AZ
X1   18.939        87       300       850         1         1         1
BT       25         0     593.6         0       100     594 5         0       200     595.5         0
BT      300     596.4     591.6     334.2     596.7     591.9     339.7     596.7     591.9     375.5
BT    597.1     592.3     382.5     597 1     592.3       514     597.3     592.5       522     597 3
BT    592.5       615     597.3     592.5       645     597.3     592.5       739     597.2     592.4
BT      747     597.2     592.4     776.5     597.2     592.4     783.5     597.2     592.4     814.2
BT    597.1     592.3     819.7     597.1     592.3       850     596 8     592.0       900     596.8
BT        0      1000     596.9         0      1100     596.6         0      1200     596.6         0
BT     1300     596.5         0      1330     596.3         0
GR    593.6         0     594.5       100     595 5       200     596.4       300     588.2       300
GR    588.3       310     582.3       333     581 2     334.2     591.9     334.2     591.9     339.7
GR    579.7     339.7     579.6       340     579.1       350     578.6       360     579.0       370
GR    578.9     375.5     592.3     375.5     592.3     382.5     576.2     382.5     568.0       390
GR    567.1       400     565.3       410     565.3       420     564.1       430     562.4       440
GR    561.9       450     561.6       460     561.0       470     559.1       480     556.6       490
GR    556 5       500     565.0       510     564 9       514     592.5       514     592.5       522
GR    564.3       522     562.7       530     561.4       540     561.5       550     556 6       560
GR    555.8       570     555.2       580     555.5       590     554.9       600     555.0       610
GR    555.3       615     592.5       615     592.5       645     557.2       645     557.5       650
GR    557.4       660     556.9       670     557.3       680     557.5       690     557.9       700
GR    558.8       710     561.4       720     562.1       730     567.8       739     592.4       739
GR    592.4       747     571.2       747     572.4       750     575.0       760     575.6       770
GR    576.2     776.5     592.4     776.5     592.4     783.5     577.5     783.5     579 3       790
GR    579.8       800     581.1       810     583.5     814.2     592.3     814.2     592.3     819.7
GR    586.6     819.7     586.8       820     588.0       830     590.6       840     591.2       850
GR    596.8       850     596.8       900     596.9      1000     596.6      1100     596.6      1200
GR    596.5      1300     596.3      1330

X1   18.944         0         0         0        24        24        24
X2        0         0         0         0         0         0         1         0         0         0

X1   18.945        78       300       850         1         1         1
X3       10
X5      2.0         0    594.02
GR    593.6         0     594.5       100     595.5       200     596.4       300     588.2       300
GR    588.3       310     582.3       333     581.2    334 25     579.7    339.75     579.6       340
GR    579.1       350     578.6       360     579.0       370     578.9     375.5     578.9       380
GR    576.2     382.5     568.0       390     567.1       400     565.3       410     565.3       420
GR    564.1       430     562.4       440     561 9       450     561.6       460     561 0       470
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GR    559.1      480     556.6      490     556.5      500     565.0      510     564.9      514
GR    564.7      520     564 3      520     564.3      522     562.7      530     561.4      540
GR    561.5      550     556.6      560     555.8      570     555.2      580     555 5      590
GR    554.9      600     555.0      610     555.3      615     557.2      645     557.5      650
GR    557.4      660     556.9      670     557.3      680     557.5      690     557.9      700
GR    558.8      710     561.4      720     562.1      730     567.8      739     568.4      740
GR    571.2      747     572.4      750     575.0      760     575.6      770     576.2    776.5
GR    576.6      780     577.5    783.5     579.3      790     579.8      800     581.1      810
GR    583.5   814.25     586.6   819.75     586.8      820     588.0      830     590.6      840
GR    591.2      850     596 8      850     596.8      900     596.9     1000     596.6     1100
GR    596 6     1200     596 5     1300     596.3     1330

NH      3.0     .035       410      027       880     .035      1233
          165' D/S FROM D/S FACE OF HOLLAND STREET BRIDGE      SEC.  BA
X1   19.432       54       390      900      2577     2577      2577
X3        0        0         0      390         0      900
GR    590.8        0     591.4      100     591.8      200     591.2      300     590.0      390
GR    582.8      400     577.9      410     575.9      430     575.9      440     572.9      450
GR    570.4      460     570.9      470     564.9      480     559.9      490     564.9      540
GR    565.4      550     565 4      560     564.4      580     564.9      590     564.9      600
GR    564.4      610     564 4      640     564.9      650     564.9      660     565.4      670
GR    565.4      680     565.9      690     565.9      700     566.4      710     565 9      720
GR    566.0      730     565.9      740     565.9      750     566.4      760     566.4      770
GR    566.9      780     567 9      790     567.4      800     567.9      810     568 4      820
GR    571.9      830     572.9      840     573.4      850     574.4      860     575.9      870
GR    578.8      880     580.9      890     582.8      895     586.1      900     587.5     1000
GR    589.8     1100     590.6     1157     597.1     1200     596.9     1233

NH      3.0     .035       730     .028      1285      035      1975
X1   19 462       81       730     1333       165      165       165
X3        0        0         0      730         0     1333
GR    601.8        0     597 1       45     597.7      125     594.5      225     592.4      325
GR    593.7      425     597.2      525     590.2      625     589.5      691     589.4      695
GR    589.1      727     582.8      730     577.9      745     575.9      755     573.5      761
GR    571 9      765     568.9      775     566.9      785     565.9      795     566.4      805
GR    567 4      815     566.9      825     566 9      835     566.9      845     566.4      855
GR    565.9      865     564.4      875     563.5      881     562.9      885     563.9      895
GR    564.9      905     565.9      915     565.9      925     565 9      935     565.4      945
GR    565.9      955     565.9      965     564.9      975     564.9      985     566.4      995
GR    563.1     1001     560.9     1005     565.9     1015     565.9     1025     565.9     1035
GR    566.4     1045     564.9     1055     565.9     1065     565.4     1075     565.9     1085
GR    565.9     1095     565.9     1105     562.9     1115     562.9     1121     562 9     1125
GR    563.9     1135     566.9     1145     567.4     1155     567.9     1165     567.9     1175
GR    567.9     1185     567.4     1205     569.4     1215     572.9     1225     573.9     1235
GR    575.1     1241     575 9     1245     578.9     1255     582.1     1265     585.5     1279
GR    587.5     1285     595.5     1323     595.5     1327     595.5     1333     603.8     1333
GR    601.4     1425     599.0     1525     597.0     1625     595.3     1725     594.4     1825
GR    594.1     1975
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NC	.035	.035	.028	.1	.2					
	D/S FACE OF HOLLAND STREET BRIDGE				SEC. BB					
X1	19.463	94	730	1333	1	1	1			
X3	0	0	0	730	0	1333				
BT	16	625	601.1	596.6	691	603.3	598.8	691	603.3	593.8
BT	695	603.5	594.0	761	605.8	596.3	765	605.9	596.4	881
BT	608.3	598.8	885	608.3	598.8	1001	608.0	598.5	1005	607.9
BT	598.4	1121	606.4	596.9	1125	606.4	596.9	1241	604.9	595.4
BT	1245	604.9	595.4	1245	604.9	600.4	1333	603.8	599.3	0
GR	601.8	0	597.1	45	597.7	125	594.5	225	592.4	325
GR	593.7	425	597.2	525	601.1	625	590.2	625	589.5	691
GR	593.8	691	594.0	695	589.4	695	589.1	725	582.8	730
GR	577.9	745	575.9	755	573.5	761	596.3	761	596.4	765
GR	571.9	765	568.9	775	566.9	785	565.9	795	566.4	805
GR	567.4	815	566.9	825	566.9	835	566.9	845	566.4	855
GR	565.9	865	564.4	875	563.5	881	598.8	881	598.8	885
GR	562.9	885	563.9	895	564.9	905	565.9	915	565.9	925
GR	565.9	935	565.4	945	565.9	955	565.9	965	564.9	975
GR	564.9	985	566.4	995	563.1	1001	598.5	1001	598.4	1005
GR	560.9	1005	565.9	1015	565.9	1025	565.9	1035	566.4	1045
GR	564.9	1055	565.9	1065	565.4	1075	565.9	1085	565.9	1095
GR	565.9	1105	562.9	1115	562.9	1121	596.9	1121	596.9	1125
GR	562.9	1125	563.9	1135	566.9	1145	567.4	1155	567.9	1165
GR	567.9	1175	567.9	1185	567.4	1205	569.4	1215	572.9	1225
GR	573.9	1235	575.1	1241	595.4	1241	595.4	1245	575.9	1245
GR	578.9	1255	582.1	1265	585.5	1279	587.5	1285	595.5	1323
GR	595.5	1327	595.5	1333	603.8	1333	601.4	1425	599.0	1525
GR	597.0	1625	595.3	1725	594.4	1825	594.1	1975		
X1	19.476	0	0	0	68	68	68			
X2	0	0	0	0	0	0	1	0	0	0
X3	0	0	0	730	0	1333				
X1	19.477	81	730	1333	1	1	1			
X3	0	0	0	730	0	1333				
GR	601.8	0	597.1	45	597.7	125	594.5	225	592.4	325
GR	593.7	425	597.2	525	590.2	625	589.5	691	589.4	695
GR	589.1	727	582.8	730	577.9	745	575.9	755	573.5	761
GR	571.9	765	568.9	775	566.9	785	565.9	795	566.4	805
GR	567.4	815	566.9	825	566.9	835	566.9	845	566.4	855
GR	565.9	865	564.4	875	563.5	881	562.9	885	563.9	895
GR	564.9	905	565.9	915	565.9	925	565.9	935	565.4	945
GR	565.9	955	565.9	965	564.9	975	564.9	985	566.4	995
GR	563.1	1001	560.9	1005	565.9	1015	565.9	1025	565.9	1035
GR	566.4	1045	564.9	1055	565.9	1065	565.4	1075	565.9	1085
GR	565.9	1095	565.9	1105	562.9	1115	562.9	1121	562.9	1125
GR	563.9	1135	566.9	1145	567.4	1155	567.9	1165	567.9	1175
GR	567.9	1185	567.4	1205	569.4	1215	572.9	1225	573.9	1235
GR	575.1	1241	575.9	1245	578.9	1255	582.1	1265	585.5	1279
GR	587.5	1285	595.5	1323	595.5	1327	595.5	1333	603.8	1333
GR	601.4	1425	599.0	1525	597.0	1625	595.3	1725	594.4	1825
GR	594.1	1975								

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NH      3.0      .035       448      .026       895      .035      2635
X1   20.115        95     386.5       910      3379      3379      3379
X3         0         0         0       386         0       910
GR     604.2         0     603.4        35     608.8       135     598.5       135     596.5     172.5
GR     596.3     175.5     594.3     212.5     594.2     215.5     593.1       235     593.1     252.5
GR     593.0     255.5     593.0     307.5     592.9     310.5     592.9       335     592.9     343.5
GR     592.9     346.5     593 0     383.5     593.0       385     592.9     386.5     590 7     423.5
GR     590.7       425     590 3     426 5     584 6       447     577.5       448     576.5       455
GR     575.3       463     575.0       465     567 0       475     562.0       485     561 8       487
GR     559.0       545     558 5       555     558.0       565     558.0       575     558.5       585
GR     557.5       595     561.9       603     563.0       605     561 0       615     565.0       625
GR     561.8       629     557.0       635     557.0       645     558.5       655     560.0       665
GR     561.5       675     562.0       685     563.0       695     563.0       705     565.2     710.5
GR     566.4     713.5     567.0       715     565.0       725     565.5       735     565.5       755
GR     566.0       765     566.0       785     566.5       795     566 5     795.5     566.7     798.5
GR     567.0       805     568.0       815     570.0       825     570.0       845     572.0       855
GR     574.5       865     578.0       875     579.2     878.5     580.1     881 5     581.3       885
GR     582.9       895     591.7       910     591.5     921.5     591.5     924.5     591.1       955
GR     593.1     961.5     594.0     964 5     604.0       997     604.3      1001     606.7      1001
GR     604.3      1035     600.7      1135     597.9      1235     594.7      1335     593 7      1435
GR     594 2      1535     594 2      1635     594.0      1735     593 7      1835     593.4      1935
GR     593 0      2035     592.8      2135     593.1      2235     593.9      2435     594.9      2635

NC      .035       035      .028        .1        .2
          D/S FACE OF COURT STREET BRIDGE        SEC. BC
X1   20.116        94     386.5       910         1         1         1
X3         0         0         0       386         0       910
GR     604.2         0     603 4        35     608 8       135     598.5       135     596.5     172.5
GR     609.8     172.5     609.9     175.5     596.3     175.5     594.3     212.5     611.0     212 5
GR     611.0     215.5     594 2     215.5     593.1       235     593.1     252.5     612.1     252.5
GR     612.2     255.5     593.0     255.5     593.0     307.5     613.6     307.5     613.7     310.5
GR     592.9     310.5     592.9     343.5     614.6     343.5     614.7     346 5     592.9     346.5
GR     593.0     383.5     615.7     383.5     615.8     386.5     592.9     386 5     590.7     423.5
GR     616.8     423.5     616.9     426.5     590.3     426.5     584.6     448 0     577.5       448
GR     575.3       463     617.9       463     618.6       487     561.8       487     561.0       495
GR     557.5       595     561.9       603     618.5       603     617.7       629     561.8       629
GR     557.0       635     557.0       645     561.5       675     563.0       695     560.0       705
GR     565.2     710.5     615.3     710.5     615.2     713.5     566.4     713.5     567.0       715
GR     565.0       725     566.0       785     566.5       795     566.5     795.5     612.7     795.5
GR     612.7     798.5     566.7     798 5     567.0       805     568.0       815     570.0       825
GR     570.0       845     574.5       865     578.0       875     579.2     878.5     610.3     878.5
GR     610.2     881.5     580.1     881.5     581.3       885     582.9       895     591.7       910
GR     591.5     921.5     609.0     921.5     609.0     924.5     591.5     924.5     591.1       955
GR     593.1     961.5     607.9     961.5     607.8     964.5     594.0     964.5     604.3      1001
GR     606.7      1001     604.3      1035     600.7      1135     594.7      1335     593.7      1435
GR     594.2      1635     593.0      2035     592.8      2135     594.9      2635

X1   20 128         0         0         0        60        60        60
X3         0         0         0       386         0       910
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X1	20 129	95	386.5	910	1	1	1			
X3	0	0	0	386	0	910				
GR	604.2	0	603 4	35	608.8	135	598.5	135	596.5	172.5
GR	596.3	175.5	594.3	212.5	594.2	215.5	593.1	235	593 1	252.5
GR	593.0	255.5	593.0	307.5	592.9	310.5	592.9	335	592.9	343.5
GR	592.9	346.5	593.0	383.5	593.0	385	592.9	386.5	590.7	423 5
GR	590.7	425	590.3	426.5	584.6	447	577 5	448	576.5	455
GR	575.3	463	575.0	465	567.0	475	562.0	485	561.8	487
GR	559.0	545	558.5	555	558.0	565	558.0	575	558.5	585
GR	557.5	595	561.9	603	563.0	605	561.0	615	565.0	625
GR	561.8	629	557.0	635	557.0	645	558.5	655	560.0	665
GR	561.5	675	562.0	685	563.0	695	563.0	705	565.2	710.5
GR	566.4	713.5	567 0	715	565.0	725	565.5	735	565.5	755
GR	566 0	765	566.0	785	566.5	795	566.5	795.5	566.7	798.5
GR	567.0	805	568.0	815	570 0	825	570 0	845	572 0	855
GR	574.5	865	578.0	875	579.2	878.5	580.1	881.5	581.3	885
GR	582.9	895	591 7	910	591 5	921.5	591.5	924.5	591.1	955
GR	593 1	961.5	594.0	964.5	604.0	997	604.3	1001	606.7	1001
GR	604.3	1035	600.7	1135	597.9	1235	594.7	1335	593.7	1435
GR	594.2	1535	594.2	1635	594.0	1735	593.7	1835	593 4	1935
GR	593.0	2035	592.8	2135	593.1	2235	593.9	2435	594.9	2635
NH	3.0	.035	170	.027	809	.035	1275			
	840' U/S FROM U/S FACE OF COURT STREET BRIDGE					SEC. BD				
X1	20.287	53	120	810	839	839	839			
X3	0	0	0	120	0	810				
GR	592.5	0	592.7	10	590.0	120	582.7	140	578.7	150
GR	578.9	160	577.9	170	577.9	180	576.9	190	574.9	200
GR	571.9	210	566.9	220	565.9	230	566.9	250	566.9	300
GR	567.4	310	567.4	320	567.9	330	567.4	340	567.9	350
GR	567.9	380	568.9	390	568.9	400	568.4	410	568.4	420
GR	568.9	430	568.4	440	568.4	470	568 9	480	568.9	530
GR	569.4	540	569.4	560	569.4	570	569.9	570	569.9	580
GR	569.9	600	570.4	610	570.4	620	570.9	630	570.9	710
GR	570.4	720	573.4	750	573 9	760	573.9	770	574.4	780
GR	574.4	800	574.9	809	588 7	810	589.5	910	592.0	1010
GR	592.4	1110	592.3	1210	591.6	1275				
NH	3 0	035	735	028	1360	.035	3855			
X1	20.513	95	735	1360	1199	1199	1199			
X3	10	0	0	0	0	0	0	601.0	601.0	0
GR	595.7	0	595.2	35	595.5	135	595 0	235	594.2	335
GR	593 8	435	595.5	535	600.8	735	593.4	735	593.4	735
GR	582.8	759	576.9	765	575.8	775	575.9	785	574.9	795
GR	574.3	797.5	573.6	800.5	572.5	805	571.0	815	567.1	825
GR	567.5	835	567.4	845	567.7	855	566.9	865	566.2	868.5
GR	565.5	871.5	564.8	875	565.0	885	565 7	895	565.9	905
GR	566 0	915	566.7	935	565.6	940.5	565.0	943.5	564 7	945
GR	564 7	955	565.8	965	566.5	975	566.8	995	566.6	1005
GR	565.9	1011.5	565.6	1014.5	565.5	1015	564.6	1025	565 7	1035
GR	566.5	1045	567.0	1055	566.5	1065	567 3	1075	566 5	1087.5
GR	566.3	1085	566.3	1085 5	566.2	1095	566.1	1105	566.4	1115
GR	567.9	1125	568.8	1135	568.7	1145	567.9	1153.5	567.7	1155

GR	567 6	1156.5	567.3	1165	566.7	1175	567.1	1185	567.5	1205
GR	568.1	1215	569.5	1225	569.5	1225.5	569.5	1228.5	569.6	1235
GR	570 0	1245	571.3	1255	574.0	1265	575.2	1275	575.8	1285
GR	576.6	1295	576.9	1296.5	577.4	1299.5	578 5	1305	581.0	1325
GR	582.8	1333	593 5	1358	593.5	1360	600 8	1360	600.1	1435
GR	599.4	1535	594.3	1835	594.1	1935	591.4	2135	587.6	2435
GR	586.6	2535	589.0	3235	591.1	3535	593.5	3735	594.2	3855
NC	.035	035	.028	.1	.2					
	D/S FACE OF RUST ROAD BRIDGE				SEC. BE					
X1	20.514	95	735	1360	1	1	1			
X3	10	0	0	0	0	0	0	601.0	601.0	0
GR	595.7	0	595.2	35	595.5	135	595.0	235	594.2	335
GR	593.8	435	595.5	535	600.8	735	593.4	735	593.4	737
GR	582 8	759	576.9	765	575.8	775	575.9	785	574.9	795
GR	574.3	797.5	600.8	797 5	600.8	800.5	573.6	800.5	572.5	805
GR	571.0	815	567.1	825	567 4	845	567.7	855	566.9	865
GR	566.2	868.5	600.8	868.5	600.8	871 5	565.5	871.5	564.8	875
GR	565.7	895	566.0	915	566.7	935	565.6	940.5	600.8	940.5
GR	600.8	943.5	565.0	943.5	564.7	945	564.7	955	566.5	975
GR	566.8	995	566.6	1005	565.9	1011 5	600.8	1011.5	600.8	1014.5
GR	565.6	1014.5	564.6	1025	566.5	1045	567.0	1055	566.5	1065
GR	567 3	1075	566.5	1082.5	600.8	1082.5	600.8	1085.5	566.3	1085.5
GR	566.1	1105	566.4	1115	568.8	1135	567.9	1153.5	600.8	1153.5
GR	600.8	1156.5	567.6	1156.5	566.7	1175	567 1	1185	567.5	1205
GR	568.1	1215	569.5	1225	569.5	1225.5	600.8	1225.5	600.8	1228 5
GR	569.5	1228.5	569.6	1235	570.0	1245	571.3	1255	574.0	1265
GR	575.2	1275	576.6	1295	576.9	1296.5	600.8	1296.5	600.8	1299.5
GR	577.4	1299.5	581.0	1325	582.8	1333	593.5	1360	600 8	1360
GR	600.1	1435	599.4	1535	594.5	1835	594.1	1935	592.7	2035
GR	586.4	2535	589.0	3235	591.1	3535	593.5	3735	594 2	3855
X1	20.527	0	0	0	70	70	70			
X3	10	0	0	0	0	0	0	601.0	601 0	0
X1	20 528	95	735	1360	1	1	1			
X3	10	0	0	0	0	0	0	601.0	601.0	0
GR	595.7	0	595.2	35	595.5	135	595.0	235	594.2	335
GR	593.8	435	595.5	535	600.8	735	593 4	735	593.4	735
GR	582.8	759	576.9	765	575 8	775	575.9	785	574.9	795
GR	574.3	797.5	573.6	800.5	572.5	805	571.0	815	567.1	825
GR	567.5	835	567.4	845	567 7	855	566.9	865	566.2	868.5
GR	565.5	871.5	564.8	875	565.0	885	565.7	895	565.9	905
GR	566.0	915	566.7	935	565.6	940.5	565.0	943.5	564.7	945
GR	564.7	955	565.8	965	566 5	975	566.8	995	566.6	1005
GR	565.9	1011 5	565.6	1014.5	565.5	1015	564.6	1025	565.7	1035
GR	566.5	1045	567.0	1055	566.5	1065	567 3	1075	566.5	1082.5
GR	566.3	1085	566.3	1085.5	566.2	1095	566.1	1105	566.4	1115
GR	567 9	1125	568 8	1135	568.7	1145	567.9	1153.5	567.7	1155
GR	567.6	1156 5	567.3	1165	566.7	1175	567.1	1185	567.5	1205
GR	568.1	1215	569.5	1225	569.5	1225.5	569.5	1228.5	569.6	1235
GR	570.0	1245	571.3	1255	574.0	1265	575.2	1275	575.8	1285
GR	576.6	1295	576.9	1296.5	577.4	1299.5	578.5	1305	581.0	1325
GR	582.8	1333	593.5	1358	593.5	1360	600.8	1360	600.1	1435

GR	599.4	1535	594.3	1835	594.1	1935	591.4	2135	587.6	2435
GR	586.6	2535	589.0	3235	591.1	3535	593.5	3735	594.2	3855
NH	3.0	.035	1628	.027	2180	035	2910			
	180' D/S FROM D/S FACE OF CENTER STREET BRIDGE					SEC. BF				
X1	21 059	67	1615	2220	2804	2804	2804			
X3	0	0	0	1615	0	2220				
GR	595 8	0	595 5	65	593.7	165	593 2	265	593.6	365
GR	593.8	465	593.9	565	594.4	665	594.1	765	593.7	865
GR	593.1	965	593.4	1065	593.6	1165	593.0	1265	590.8	1365
GR	587.6	1465	589.0	1565	593.3	1615	581.8	1628	579.9	1635
GR	575.9	1655	571.9	1665	567.9	1675	565.9	1685	565.9	1765
GR	565 4	1775	565.4	1785	565.9	1795	565.9	1845	565.3	1855
GR	564.9	1865	565.4	1875	564.9	1885	565.4	1895	565.4	1915
GR	565 9	1925	565 9	1955	566.4	1965	565.9	1975	566.9	1985
GR	567.4	1995	567.8	2005	568.4	2015	568.4	2025	567.9	2035
GR	568.2	2045	568.4	2055	568.4	2075	568.9	2085	569.9	2095
GR	571.4	2105	576.4	2125	577.9	2135	577.9	2145	579.4	2155
GR	581.4	2160	586.6	2180	594.1	2220	594.5	2265	598.1	2300
GR	591.9	2365	591.6	2465	592.1	2565	592.9	2665	594.0	2765
GR	595.3	2865	595.3	2910						
NH	3.0	.035	1278 5	.025	1835	.035	2870			
X1	21.092	93	1165	1960	179	179	179			
X3	10	0	0	0	0	0	0	602.0	608.0	0
GR	594.3	0	594 7	65	594.2	165	594.0	265	593.7	365
GR	592.5	465	593 5	565	592.9	665	592.1	865	594.2	965
GR	598.8	1065	601.2	1165	592.0	1165	583.6	1195	582.4	1275
GR	582.1	1275.5	576.9	1277	576.9	1278.5	576.7	1285	577.0	1295
GR	574.6	1305	571 2	1315	569.2	1325	568.6	1335	567.5	1345
GR	568 8	1355	568.3	1365	568.9	1375	567.8	1385	567.0	1395
GR	566.5	1403.5	566.4	1405	566.6	1406 5	568.0	1415	568.1	1425
GR	567.7	1435	567.8	1445	567.0	1455	566.7	1465	567.1	1485
GR	567.4	1495	567 3	1505	567.7	1515	567.0	1525	567.1	1532.5
GR	567 1	1535	567.1	1535.5	566.7	1545	566.9	1555	567.0	1565
GR	568.0	1625	567.7	1635	567.9	1645	567.1	1655	566.5	1660.5
GR	566 2	1663.5	566.0	1665	566.6	1675	566.6	1685	565.6	1705
GR	564.9	1715	563.7	1725	564.2	1735	565.7	1745	570.1	1765
GR	572.8	1775	573.1	1785	573.9	1789 5	574.4	1792.5	574.8	1795
GR	577.0	1805	577.2	1815	577.3	1825	577.8	1835	579.5	1845
GR	581.8	1855	585.3	1870	586.1	1881.5	586.3	1884.5	587.1	1895
GR	587.9	1930	597.3	1960	607.6	1960	607 6	1965	605.8	2065
GR	603.0	2165	601 6	2265	601.5	2365	599.0	2465	593.7	2565
GR	593.3	2665	593.4	2765	593.6	2870				
NC	.035	.035	028	.1	.2					
	D/S FACE OF CENTER STREET BRIDGE				SEC. BG					
X1	21.093	94	1165	1960	1	1	1			
X3	10	0	0	0	0	0	0	602.0	608.0	0
GR	594.3	0	594.7	65	593.5	465	593.5	565	592 1	865
GR	594 2	965	598.8	1065	601.2	1165	592.0	1165	583.6	1195
GR	582.4	1275	582.1	1275.5	602.6	1275.5	602.6	1278.5	576.9	1278.5
GR	576.7	1285	577 0	1295	574.6	1305	571.2	1315	569.2	1325
GR	568.6	1335	567 5	1345	568.8	1355	568 3	1365	568.9	1375

(C)

Bay here

GR	567.8	1385	567.0	1395	566.5	1403.5	603.6	1403.5	603.6	1406.5
GR	566.6	1406.5	568.0	1415	568.1	1425	567.7	1435	567.8	1445
GR	567.0	1455	566.7	1465	567.1	1485	567.4	1495	567.3	1505
GR	567.7	1515	567.0	1525	567.1	1532.5	604.7	1532.5	604.7	1535.5
GR	567.1	1535.5	566.7	1545	567.3	1575	566.8	1585	567.9	1645
GR	567.1	1655	566.5	1660.5	605.8	1660.5	605.8	1663.5	566.2	1663.5
GR	566.0	1665	566.6	1675	566.6	1685	565.6	1705	564.9	1715
GR	563.7	1725	564.2	1735	565.7	1745	570.1	1765	572.8	1775
GR	573.1	1785	573.9	1789.5	606.9	1789.5	606.9	1792.5	574.4	1792.5
GR	574.8	1795	577.0	1805	577.3	1825	577.8	1835	579.5	1845
GR	581.8	1855	585.3	1870	586.1	1881.5	607.5	1881.5	607.5	1884.5
GR	586.3	1884.5	587.1	1895	587.9	1930	597.3	1960	607.6	1960
GR	607.6	1965	605.8	2065	603.0	2165	601.6	2265	601.5	2365
GR	599.0	2465	593.7	2565	593.3	2665	593.6	2870		
X1	21.108	0	0	0	80	80	80			
X3	10	0	0	0	0	0	0	602.0	608.0	0
X1	21.109	93	1165	1960	1	1	1			
X3	10	0	0	0	0	0	0	602.0	608.0	0
GR	594.3	0	594.7	65	594.2	165	594.0	265	593.7	365
GR	592.5	465	593.5	565	592.9	665	592.1	865	594.2	965
GR	598.8	1065	601.2	1165	592.0	1165	583.6	1195	582.4	1275
GR	582.1	1275.5	576.9	1277	576.9	1278.5	576.7	1285	577.0	1295
GR	574.6	1305	571.2	1315	569.2	1325	568.6	1335	567.5	1345
GR	568.8	1355	568.3	1365	568.9	1375	567.8	1385	567.0	1395
GR	566.5	1403.5	566.4	1405	566.6	1406.5	568.0	1415	568.1	1425
GR	567.7	1435	567.8	1445	567.0	1455	566.7	1465	567.1	1485
GR	567.4	1495	567.3	1505	567.7	1515	567.0	1525	567.1	1532.5
GR	567.1	1535	567.1	1535.5	566.7	1545	566.9	1555	567.0	1565
GR	568.0	1625	567.7	1635	567.9	1645	567.1	1655	566.5	1660.5
GR	566.2	1663.5	566.0	1665	566.6	1675	566.6	1685	565.6	1705
GR	564.9	1715	563.7	1725	564.2	1735	565.7	1745	570.1	1765
GR	572.8	1775	573.1	1785	573.9	1789.5	574.4	1792.5	574.8	1795
GR	577.0	1805	577.2	1815	577.3	1825	577.8	1835	579.5	1845
GR	581.8	1855	585.3	1870	586.1	1881.5	586.3	1884.5	587.1	1895
GR	587.9	1930	597.3	1960	607.6	1960	607.6	1965	605.8	2065
GR	603.0	2165	601.6	2265	601.5	2365	599.0	2465	593.7	2565
GR	593.3	2665	593.4	2765	593.6	2870				
NC	.030	030	.028	.1	.2					
	3240' U/S FROM U/S FACE OF CENTER STREET BRIDGE					SEC. BH				
X1	21.722	56	1781	2478	3239	3239	3239			
X3	0	0	0	530	0	2300				
GR	577.0	0	581.6	20	582.0	38	581.7	238	581.9	438
GR	581.7	638	582.4	838	581.3	1038	582.9	1238	584.1	1438
GR	584.6	1638	585.2	1738	589.2	1751	589.0	1781	582.2	1797
GR	577.3	1808	576.3	1818	574.3	1828	571.3	1838	568.8	1848
GR	567.3	1858	566.8	1868	566.8	1898	566.3	1908	566.3	1918
GR	566.8	1928	566.8	1968	567.3	1978	567.3	2008	566.8	2018
GR	566.8	2038	566.3	2048	566.3	2068	565.3	2088	565.3	2118
GR	566.3	2128	567.8	2158	570.8	2178	573.3	2188	575.3	2208
GR	575.8	2218	578.3	2228	579.3	2238	582.6	2239	585.7	2338
GR	586.7	2438	587.7	2478	593.0	2503	593.1	2553	586.4	2598

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GR     587.9       2638       589.6       2663       589.5       2738       589.4       2838       591.3       2938
GR     591.0       2978

NC      .030        .030       .028         .1          .2
          INTERSECTION OF TITTABAWASSEE RIVER AND SAGINAW RIVER   SEC. BI
X1    22.186          69       1815       2387       2450       2450       2450
X3         0           0          0          0          0       3200
GR     577.3           0      581.4         15      582.0        187      583.2        387      583.1        587
GR     582.5         787      582.8        987      584.1       1187      584.3       1387      585.7       1587
GR     585.6        1787      589.9       1795      591.4       1815      582.2       1823      578.3       1837
GR     576.3        1847      574.8       1857      574.3       1867      574.3       1877      573.3       1897
GR     573.3        1907      572.3       1917      572.3       1927      570.3       1947      569.3       1967
GR     568.3        1977      567.3       1997      566.3       2007      564.3       2047      564.3       2057
GR     563.3        2077      563.3       2107      563.8       2117      563.8       2127      565.3       2157
GR     565.3        2167      567.3       2207      568.3       2217      570.3       2257      570.3       2277
GR     571.3        2287      571.8       2297      573.3       2307      575.3       2327      575.8       2337
GR     576.8        2347      578.3       2357      578.8       2367      582.2       2377      585.4       2387
GR     585.5        2487      584.5       2587      585.7       2787      585.9       2987      586.1       3187
GR     586.2        3387      586.3       3587      586.2       3787      586.4       3987      586.2       4187
GR     586.0        4387      586.0       4587      585.9       4787      585.8       4987      586.7       5187
GR     587.0        5387      586.9       5587      588.0       5787      589.6       5922
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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= 0.100 CEHV= 0.200
1490 NH CARD USED
*SECNO 0.023
1530 MANNINGS N VALUES FOR CHANNEL COMPOSITED
120' U/S FROM THE MOUTH OF SAGINAW RIVER SEC. A

0.023	26 44	579.34	0.00	579 34	579.58	0.24	0.00	0.00	582.10
66100.0	0.0	66100.0	0.0	0.0	16696.0	0.0	0.0	0.0	584.70
0.00	0 00	3.96	0 00	0.000	0.026	0 000	0.000	552.90	98.71
0.000157	120.	120	120.	0	0	0	0.00	1297.10	1395.81

1490 NH CARD USED
*SECNO 0.335
1770' U/S FROM THE MOUTH OF SAGINAW RIVER SEC. B

0 335	28.75	579.55	0.00	0.00	579.86	0.31	0.27	0.01	582.00
66100 0	0.0	66100.0	0.0	0 0	14834.2	0.0	597.2	43.8	585.10
0.10	0.00	4.46	0.00	0.000	0.025	0 000	0 000	550.80	384.93
0.000165	1650.	1650.	1650.	2	0	0	0.00	1015 82	1400.75

1490 NH CARD USED
*SECNO 1.189
6280' U/S FROM THE MOUTH OF SAGINAW RIVER SEC. C

1.189	27.15	580.45	0.00	0.00	580.71	0.27	0.85	0.00	582.50
66100.0	0.0	66100.0	0 0	0.0	15931.6	0.0	2189.8	175.1	582.30
0.40	0 00	4.15	0 00	0.000	0.025	0 000	0.000	553.30	317.07
0 000217	4510.	4510.	4510.	2	0	0	0.00	1520.24	1837.31

1490 NH CARD USED
*SECNO 1.761
9300' U/S FROM THE MOUTH OF SAGINAW RIVER SEC. D

1.761	34.59	580.89	0.00	0.00	581.30	0.41	0.56	0.03	584.80
66100.0	0.0	66100.0	0.0	0.0	12842.0	0.0	3187.3	251.6	585.60
0.57	0 00	5.15	0 00	0 000	0.025	0.000	0.000	546 30	307.72
0 000159	3020.	3020.	3020.	2	0	0	0.00	687.59	995.31

1490 NH CARD USED

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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 2.223
        3090' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE          SEC. E
   2.223      30.32     581.32      0.00       0.00     581.67      0.35       0 37       0.01     583.30
 66100.0       0.0    66100.0       0.0        0.0    13897.1       0 0     3936.2      292.6     582.20
    0.71      0 00       4.76      0.00      0.000      0.026     0.000      0.000     551.00     506.78
0.000144     2440.      2440.     2440.          2          0         0       0.00     7/3.98    1280.76

1490 NH CARD USED
*SECNO 2.576
        1230' D/S FROM D/S FACE OF D&M RAILROAD BRIDGE          SEC. F
   2.576      32 22     581.62      0.00       0.00     581 87      0.26       0.19       0.01     582.60
 66100.0       0.0    66100.0       0.0        0.0    16223.7       0.0     4579.2      324.7     582.20
    0.84      0.00       4.07      0.00      0.000      0.025     0.000      0.000     549.40      66.51
0 000076      1860      1860.     1860.          1          0         0       0.00     733 28     799.79

CCHV=    0.100 CEHV=    0.200
*SECNO 2.808
        D/S FACE OF D&M RAILROAD BRIDGE          SEC. G
   2.808      33 80     581.70      0.00       0.00     582.00      0.30       0 12       0.01     592.60
 66100.0       0.0    66100.0       0.0        0.0    15025.4       0.0     5021.1      344.8     592.50
    0.91      0.00       4.40      0.00      0.000      0.029     0.000      0.000     547.90     400.00
0.000125      1232      1232.     1232          2          0         0       0.00     683 00    1083.00

CCHV=    0.100 CEHV=    0.200
*SECNO 2.809

3265 DIVIDED FLOW

   2.809      33.75     581 65      0.00       0 00     582.01      0.37       0.00       0.01     592.60
 66100.0       0.0    66100.0       0.0        0.0    13572.8       0 0     5021.5      344.8     592.50
    0 91      0 00       4 87      0.00      0 000      0 028     0.000      0.000     547.90     400.00
0.000209         1          1.        1.          2          0         0       0.00     623.00    1083.00

*SECNO 2.813

3265 DIVIDED FLOW

   2.813      33.75     581.65      0.00       0.00     582.02      0.37       0.00       0.00     592.60
 66100.0       0.0    66100.0       0.0        0.0    13574.5       0.0     5026.8      345.0     592.50
    0.92      0.00       4.87      0.00      0.000      0.028     0.000      0.000     547.90     400.00
0.000209       17.        17.       17          0          0         0       0.00     623 00    1083 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

CCHV=     0.100 CEHV=     0.200
*SECNO 2 814
     2.814      33.82     581.72       0.00       0.00     582.02       0.30       0 00       0 01     592.60
   66100.0        0.0    66100.0        0.0        0.0   15042.5        0.0     5027.1      345.0     592 50
      0.92       0.00       4.39       0.00      0.000      0.029      0.000      0.000     547.90     400.00
  0.000125         1.         1.         1.          2          0          0       0.00     683.00    1083.00

1490 NH CARD USED
*SECNO 2.947
         710' U/S FROM U/S FACE OF D&M RAILROAD BRIDGE          SEC.  H
     2.947      30.09     581.89       0.00       0.00     582.11       0.22       0.08       0.01     581.80
   66100.0        0.0    66100.0        0.0        0.0   17413.0        0.0     5291.2      359.4     581.70
      0.97       0.00       3.80       0.00      0 031      0.025      0.031      0.000     551.80      34.37
  0.000102       709.       709.       709.          2          0          0       0 00    1081.15    1115.52

1490 NH CARD USED
*SECNO 3 350
         1323' D/S FROM D/S FACE OF BELINDA STREET BRIDGE          SEC.  I
     3.350      30.51     582.11       0.00       0 00     582.37       0.26       0.25       0.01     582.10
   66100.0        0 0    66100.0        0.0        0.0   16181.6        0.2     6112.6      413 7     581.90
      1.11       0.01       4 08       0.13      0.031      0.025      0.031      0.000     551.60      55.87
  0.000139      2130.      2130.      2130          1          0          0       0.00    1138.56    1194.43

1490 NH CARD USED
*SECNO 3.600
     3.600      38.23     582.23       0.00       0.00     582.52       0.29       0 14       0.01     582.90
   66100 0        0 0    66100.0        0.0        0.0   15349.5        0.0     6591.1      441.1     583.40
      1.20       0.00       4.31       0 00      0.000      0.025      0.000      0.000     544.00     519.08
  0 000086      1322.      1322.      1322.          2          0          0       0.00     672.35    1191.44

CCHV=     0.100 CEHV=     0.200
*SECNO 3.601

3265 DIVIDED FLOW

3302 WARNING.  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.67

         D/S FACE OF BELINDA STREET BRIDGE          SEC  J
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 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

   3.601     38.13     582.13      0.00       0 00     582.55      0.42       0.00       0.03     582.90
 66100.0      0.0    66100.0      0.0        0 0     12769.9      0.0     6591.4     441.2     583.40
    1.20     0 00       5.18      0.00      0 000      0.025     0.000      0.000     544.00     520.59
0.000193      1.         1.        1.         2          0         0       0.00     581.10    1190.68

*SECNO 3.615

3265 DIVIDED FLOW

   3 615     38.14     582.14      0.00       0.00     582.56      0.42       0.01       0 00     582.90
 66100.0      0.0    66100 0      0.0        0.0     12775 8      0.0     6612.9     442.1     583.40
    1.20     0.00       5.17      0.00      0.000      0.025     0.000      0.000     544 00     520 50
0.000193      74.        74.       74.         0          0         0       0.00     581.26    1190 76

1490 NH CARD USED
*SECNO 3.616

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1 50

   3 616     38 29     582.29      0.00       0.00     582 57      0.29       0.00       0.01     582 90
 66100.0      0.0    66100.0      0.0        0 0     15384.0      0.0     6613.3     442.2     583.40
    1.20     0.00       4.30      0.00      0.000      0 025     0.000      0.000     544.00     517 53
0.000086      1.         1.        1.         2          0         0       0.00     674 30    1191.83

1490 NH CARD USED
*SECNO 3 646
        163' U/S FROM U/S FACE OF BELINDA STREET BRIDGE          SEC. K
   3.646     33.40     582.30      0.00       0.00     582.59      0.29       0.01       0.00     581.80
 66100.0      0.1    66099.9      0.0        0.5     15414 4      0.0     6670.7     444.8     583.50
    1.21     0.18       4.29      0.00      0.031      0.025     0.000      0.000     548.90     397.86
0.000095     163.       163.      163.         0          0         0       0.00     744.44    1142 30

1490 NH CARD USED
*SECNO 3.689
   3.689     34.88     582.28      0.00       0.00     582 62      0.34       0.02       0.01     593.20
 66100.0      0.0    66100.0      0.0        0.0     14034.1      0.0     6748.8     448.4     593.90
    1.23     0 00       4.71      0.00      0.000      0.026     0.000      0.000     547.40     418.81
0.000107     231.       231.      231          2          0         0       0.00     606.19    1025.00
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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

CCHV=    0.100 CEHV=    0.200
*SECNO 3.690

3265 DIVIDED FLOW

        395' U/S FROM U/S FACE OF BELINDA STREET BRIDGE      SEC  L
   3.690      34.84     582 24      0.00       0 00     582.63      0.39       0.00       0.01     593.20
 66100 0       0.0    66100 0       0.0        0.0    13208.0       0 0     6749 1      448.4     593 90
    1.23      0 00       5.00      0.00      0.000      0.025     0.000      0.000     547.40     422 00
0.000159        1.         1.        1.          2          0         0       0.00     557.00    1025.00

*SECNO 3.697

3265 DIVIDED FLOW

   3.697      34 85     582.25      0.00       0.00     582.64      0.39       0.01       0.00     593.20
 66100.0       0.0    66100 0       0.0        0.0    13210.6       0.0     6759 9      448.9     593.90
    1 23      0.00       5 00      0.00      0.000      0.025     0.000     0 000     547.40     422.00
0.000159       36.        36.       36          0          0         0       0.00     557.00    1025.00

*SECNO 3.698
   3.698      34.90     582.30      0.00       0 00     582.64      0.34       0.00       0.00     593.20
 66100 0       0.0    66100.0       0.0        0.0    14046.1       0.0     6760 2      448.9     593.90
    1 23      0 00       4.71      0.00      0.000      0.025     0.000      0.000     547.40     418.68
0.000104        1.         1.        1.          2          0         0       0.00     606.32    1025.00

1490 NH CARD USED
*SECNO 4.366
        1650' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD        SEC  M
   4.366      34.52     582.72      0.00       0.00     582 98      0.26       0 33       0.01     583.70
 66100.0       0.0    66100.0       0.0        0.0    16195 5       0.0     7992.5      504 7     583.40
    1 47      0.00       4.08      0 00      0.000      0.025     0.000      0.000     548.20     299.22
0.000083     3550.      3550.     3550          2          0         0       0.00     763 17    1062.39

CCHV=    0.100 CEHV=    0.200
*SECNO 4.677
   4.677      37.33     582.83      0 00       0.00     583.14      0.31       0.15       0.01     592.20
 66100.0       0.0    66100.0       0.0        0.0    14834.6       0.0     8579.8      531.6     592 50
    1.57      0.00       4.46      0.00      0.000      0.025     0.000      0.000     545.50     300.00
0.000096     1649.      1649.     1649.          2          0         0       0.00     657.00     957.00
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELFV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA       R-BANK ELEV
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WIN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

*SECNO 4.678

3265 DIVIDED FLOW

        D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1        SEC. N
    4 678     37.29     582 79      0.00      0.00    583.15      0.36      0.00      0.01    592.20
  66100.0       0.0   66100.0       0.0       0.0   13785 3       0.0    8580.1     531.6    592.50
     1.57      0.00      4.79      0.00     0 000     0.025     0.000     0.000    545.50    300.00
 0.000158         1         1.        1.         2         0         0      0.00    612.00    957.00

*SECNO 4.682

3265 DIVIDED FLOW

    4.682     37 29     582.79      0.00      0.00    583.15      0 36      0.00      0.00    592.20
  66100.0       0.0   66100.0       0.0       0.0   13786.8       0.0    8586.5     531.8    592.50
     1.57      0.00      4.79      0.00     0.000     0.025     0.000     0.000    545.50    300.00
 0.000158       20.       20.       20.         0         0         0      0.00    612.00    957.00

*SECNO 4.683
    4.683     37.35     582.85      0.00      0 00    583.16      0.31      0.00      0.00    592.20
  66100.0       0 0   66100.0       0.0       0.0   14846.8       0.0    8586.8     531.9    592.50
     1.57      0.00      4.45      0.00     0.000     0.025     0.000     0.000    545.50    300.00
 0.000096         1.        1.        1.         2         0         0      0.00    657.00    957.00

*SECNO 4.835

3265 DIVIDED FLOW

        810' U/S FROM U/S FACE OF PENN CENTRAL RAILRAD BRIDGE #1        SEC. O
    4 835     32 01     583.01      0.00      0.00    583.23      0.23      0.07      0.01    582.20
  66100.0       0.7   66099.3       0.0       3.6   17310.0       0.0    8885.4     545.7    582.80
     1.63      0 18      3.82      0.00     0.031     0.025     0.031     0.000    551 00     81.47
 0 000073      809.      809.      809.         2         0         0      0.00    836.39    946.48

CCHV=    0.100 CEHV=    0.200
*SECNO 4.967
    4.967     29 83     583.03      0.00      0.00    583 30      0.28      0.06      0.01    595.20
  66100 0       0.0   66100.0       0.0       0.0   15681 2       0.0    9151.3     559.0    596.60
     1.68      0.00      4.22      0.00     0.000     0.026     0.000     0.000    553.20    100.00
 0.000108      702.      702.      702.         2         0         0      0.00    807 00    907.00
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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

*SECNO 4.968

3265 DIVIDED FLOW

1513' U/S FROM U/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1 SEC.P

4 968	29.78	582.98	0.00	0.00	583.32	0.34	0.00	0.01	595.20
66100.0	0.0	66100.0	0.0	0.0	14223.4	0.0	9151.7	559.0	596 60
1.68	0.00	4.65	0.00	0.000	0.026	0.000	0.000	553.20	100.00
0.000180	1.	1.	1.	2	0	0	0.00	732.00	907.00

*SECNO 4.975

3265 DIVIDED FLOW

4.975	29.79	582.99	0.00	0.00	583.32	0.34	0.01	0.00	595.20
66100 0	0.0	66100.0	0.0	0.0	14227 0	0.0	9162.8	559.6	596.60
1.68	0 00	4.65	0.00	0.000	0 026	0.000	0.000	553.20	100.00
0.000180	34.	34	34	0	0	0	0.00	732.00	907.00

*SECNO 4.976

4.976	29.85	583.05	0 00	0.00	583.33	0.28	0.00	0.01	595.20
66100 0	0 0	66100.0	0.0	0.0	15701.4	0.0	9163.1	559.6	596.60
1.68	0 00	4.21	0.00	0.000	0.026	0.000	0.000	553.20	100.00
0.000108	1.	1.	1.	2	0	0	0.00	807.00	907.00

CCHV= 0.100 CEHV= 0.200
*SECNO 5.152

3265 DIVIDED FLOW

2480' U/S FROM U/S FACE OF PENN CENTRAL RAILROAD BRIDGE #1 SEC.Q

5.152	27.22	583.12	0.00	0.00	583 44	0.31	0.10	0.01	582.50
65900.0	0.7	65899.3	0 0	3.0	14636.3	0.0	9487.7	576.2	583.40
1.74	0.22	4.50	0.00	0.031	0.025	0.000	0.000	555.90	96.75
0.000111	932.	932.	932.	2	0	0	0.00	750.27	1331.00

*SECNO 5.325

5.325	30.28	583.18	0.00	0.00	583 55	0.37	0.10	0.01	582.30
65900.0	0 8	65898.3	1.0	1.9	13557.7	3.9	9785.5	590.7	582.30
1.79	0.41	4 86	0.25	0.031	0.025	0.031	0.000	552.90	277.40
0.000109	920.	920.	920.	2	0	0	0 00	619.65	897.05

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 SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         DLOSS      L-BANK ELEV
 Q          GLOB       GCH        GROB       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 5.326

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.69

        D/S FACE OF VETERANS MEMORIAL BRIDGE          SEC.  R
    5.326      30.15     583.05       0.00       0.00     583.58       0.53       0.00       0.03     582.30
  65900.0        0.8   65899.2        0.0        1.6   11239.2        0.2     9785.8      590.7     607.80
     1.79       0.53       5.86       0.01      0.031      0.025      0.031      0.000     552.90     277.50
 0.000232         1.         1.          1          2          0          0       0.00     514.54     886.04


*SECNO 5.339

3265 DIVIDED FLOW

    5.339      30.17     583.07       0.00       0.00     583.60       0.53       0.02       0.00     582.30
  65900.0        0.9   65899.1        0.0        1.6   11245.0        0.3     9803.4      591.5     607.80
     1.79       0.54       5.86       0.10      0.031      0.025      0.031      0.000     552.90     277.49
 0.000231        68.        68.        68.          0          0          0       0.00     515.50     886.99


1490 NH CARD USED
*SECNO 5.340

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.48

    5.340      30.35     583.25       0.00       0.00     583.62       0.36       0.00       0.02     582.30
  65900.0        0.9   65897.8        1.3        2.1   13597.7        5.5     9803.6      591.5     582.30
     1.79       0.42       4.85       0.24      0.031      0.025      0.031      0.000     552.90     277.35
 0.000106         1.         1.          1          2          0          0       0.00     625.36     902.70


1490 NH CARD USED
*SECNO 5.905

3470 ENCROACHMENT STATIONS=        0.0    1365.0  TYPE=       1  TARGET=      1364.999
        2990' U/S FROM U/S FACE OF VETERANS MEMORIAL BRIDGE          SEC   S
    5.905      27.43     583.73       0.00       0.00     584.02       0.29       0.40       0.01     582.90
  65900.0        4.4   65894.4        1.2       12.6   15256.0        3.5    10794.7      654.3     582.90
     1.99       0.35       4.32       0.35      0.031      0.025      0.031      0.000     556.30     151.85
 0.000174      2990.      2990.      2990.          2          0          0       0.00    1202.48    1354.34
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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

1490 NH CARD USED
*SECNO 6.222

3470 ENCROACHMENT STATIONS=      933.0    1833 0  TYPE=      1  TARGET=     -933.000
        NORTH END OF MIDDLE GROUND ISLAND        SEC. T
    6.222     30.81    583.91      0 00      0.00    584.30      0.40      0 26      0.02    582.00
  57650 0       3.5   57643.8       2.7       6.6   11405.8       5.4   11306 3     688.8    582.00
     2.08      0.52      5.05      0.50     0.031     0.025     0.031     0 000    553.10    981.45
 0.000136     1670.     1670.     1670.         2         0         0      0.00    598.64   1580.09

1490 NH CARD USED
*SECNO 6 519

3470 ENCROACHMENT STATIONS=     1106.0    2126 0  TYPE=      1  TARGET=    -1106.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       597.80 ELREA=       597.50

    6.519     38.02    584.12      0.00      0.00    584.48      0.36      0.17      0.00    597.80
  57650.0       0 0   57650.0       0.0       0.0   11967.6       0.0   11728.6     707.7    597.50
     2 17      0.00      4.82      0.00     0 000     0 025     0.000     0.000    546.10   1390.00
 0.000092     1573.     1573.     1573         2         0         0      0.00    447.00   1837.00

CCHV=    0.100 CEHV=    0.200
*SECNO 6.520

3265 DIVIDED FLOW

3302 WARNING.  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.60

3470 ENCROACHMENT STATIONS=     1106.0    1906.0  TYPE=      1  TARGET=    -1106.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       597.80 ELREA=       597 50

        D/S FACE OF LAFAYETTE BRIDGE        SEC. U
    6.520     37.22    583.92      0.00      0.00    584 53      0.61      0 00      0 05    597.80
  57650.0       0.0   57650.0       0.0       0.0    9194.2       0.0   11728.8     707.7    597.50
     2.17      0.00      6.27      0.00     0 000     0.025     0.000     0.000    546.70   1390 00
 0.000254        1.         1         1         2         0         0      0.00    367 00   1837.00
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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

*SECNO 6.528

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=     1106.0    1906.0  TYPE=      1  TARGET=    -1106 000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       597.80 ELREA=       597.50

    6.528     37.23    583.93      0 00      0.00    584.54      0.61      0.01      0.00    597 80
 57650.0       0.0   57650 0       0.0       0 0    9196.9       0.0  11737.7     708.0    597.50
    2.17      0 00      6 27      0.00     0.000     0.025     0.000     0.000    546.70   1390.00
0.000254       42.        42       42.         0         0         0      0.00    367.00   1837.00

*SECNO 6.529

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.67

3470 ENCROACHMENT STATIONS=     1106.0    2126.0  TYPE=      1  TARGET=    -1106.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       597.80 ELREA=       597.50

    6 529     38.11    584.21      0.00      0.00    584.57      0.36      0.00      0.03    597.80
 57650.0       0.0   57650.0       0.0       0.0   12007.2       0.0  11737.9     708.0    597.50
    2.17      0.00      4.80      0.00     0.000     0.025     0 000     0.000    546 10   1390 00
0 000091        1.        1.        1.         2         0         0      0.00    447.00   1837.00

1490 NH CARD USED
*SECNO 7.016

3470 ENCROACHMENT STATIONS=     2030.0    2845.0  TYPE=      1  TARGET=    -2030.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       583.60 ELREA=       584 60

        2578' U/S FROM U/S FACE OF LAFAYETTE BRIDGE        SEC.  V
    7.016     31.54    584 54      0.00      0.00    584.85      0.31      0.28      0.00    583.60
 57650 0       0.0   57650.0       0 0       0.0   12937.7       0.0  12476.1     742.9    584.60
    2.33      0.00      4.46      0.00     0.000     0.025     0.000     0.000    553 00   2030.00
0.000128     2578.     2578.     2578.         2         0         0      0 00    730.00   2760.00
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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

1490 NH CARD USED
*SECNO 7 567

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1190.0    2490.0  TYPE=      1  TARGET=    -1190.000
        5488' U/S FROM U/S FACE OF LAFAYETTE BRIDGE        SEC.  W
    7.567     30.79    584.89      0.00      0.00    585.13      0.24      0 27      0.01    584.70
  57650.0      46.0   57583 5      20.4     142.6  14578.7      43.8   13401.4     798.5    582.00
     2.54      0 32      3.95      0.47     0.031     0.025     0.031     0.000    554.10   1258 73
 0.000072     2910.     2910.     2910.         2         0         0      0.00    934.45   2450.95


1490 NH CARD USED
*SECNO 8.099

3470 ENCROACHMENT STATIONS=     1342.0    1982.0  TYPE=      1  TARGET=      640.000
        SOUTH END OF MIDDLE GROUND ISLAND & NORTH END OF SKULL ISLAND  SEC.  X
    8 099     32.06    585.06      0.00      0.00    585.40      0.34      0 25      0.02    583.30
  57650 0      95.3   57531.9      22.8     141 8  12301.6      36 1   14280.2     849.1    582.20
     2.70      0 67      4.68      0.63     0.031     0.027     0.031     0.000    553.00   1342.00
 0.000113     2810.     2810.     2810.         2         0         0      0.00    635.23   1977.23


1490 NH CARD USED
*SECNO 8.241

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=        0.0    1927 0  TYPE=      1  TARGET=     1926.999
        750' U/S FROM MIDDLE GROUND ISLAND        SEC.  Y
    8.241     30.94    585.24      0.00      0 00    585.49      0.25      0.08      0.01    583 00
  65900 0     410.6   65489.4       0 0     626 1  16224.3       0.0   14532.7     867.6 100000.00
     2.76      0.66      4.04      0.00     0 031     0.027     0.000     0.000    554.30     95.06
 0.000103      750.      750.      750.         2         0         0      0.00   1516 13   1924.22


1490 NH CARD USED
*SECNO 9.079
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELFV
   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


3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=        0.0    1900.0  TYPE=      1  TARGET=     1899.999
        5170' U/S FROM MIDDLE GROUND ISLAND          SEC. Z
     9.079     34.66    585 76      0.00      0.00    585.95      0.20      0.46      0.01    582.00
   67100 0      25.8   63645.9    3428.3      28.5   17477.7    2959.8   16425.9    1040.3    582.00
      3.11      0.91      3.64      1.16     0 031     0.027     0.031     0 000    551.10      9.25
  0.000105     4420.     4420.     4420.         2         0         0      0.00   1887.24   1900.00


1490 NH CARD USED
*SECNO 9.584

3470 ENCROACHMENT STATIONS=        0.0    2250.0  TYPE=      1  TARGET=     2249.999
        4260' D/S FROM CHEBOYGANING CREEK          SEC. AA
     9.584     31.37    586 07      0.00      0.00    586.26      0 19      0.30      0.00    583.10
   67100.0    4665 9   58774.4    3659.8    3042.2   15859.2    2068.6   17644.4    1153.0    583.00
      3 32      1.53      3.71      1.77     0.031     0.027     0.027     0.000    554.70     12.02
  0.000128     2800.     2670.     1700          2         0         0      0.00   2237.98   2250.00


1490 NH CARD USED
*SECNO 10.240
        800' D/S FROM CHEBOYGANING CREEK          SEC. AB
    10.240     31 84    586.44      0.00      0.00    586.60      0.16      0.34      0 00    582 00
   67100.0   14159 3   52931.5       9.2    9845.8   15166.5      14.7   19413.9    1326.1    582.10
      3.63      1.44      3.49      0 63     0.031     0.027     0.031     0.000    554.60      3.48
  0.000080     3050.     3460.     3600.         1         0         0      0.00   2361.27   2364.75


CCHV=    0.100 CEHV=    0.200
1490 NH CARD USED
*SECNO 10.993

3470 ENCROACHMENT STATIONS=       80 0    1370.0  TYPE=      1  TARGET=      -80.000
        350' NORTH FROM BAY COUNTY-SAGINAW COUNTY LINE          SEC. AC
    10.993     31.93    586 73      0.00      0.00    587.01      0.28      0 38      0.02 100000 00
   68400.0       0 0   68380.1      19.9       0.0   16112.7      24.1   21195.0    1464.1    582 80
      3.88      0.00      4.24      0.83     0.000     0.025     0 031     0.000    554.80     80.00
  0.000126     3100.     3980.     4100.         2         0         0      0.00   1005.93   1085.93
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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

CCHV=    0.100 CEHV=    0.200
*SECNO 11 433

3470 ENCROACHMENT STATIONS=      210.0    1060.0  TYPE=      1  TARGET=      850.000
    11.433     32.15    587.00      0.00      0.00    587.31      0.31      0.29      0.01 100000.00
   68400 0       0.0   68400.0      0.0       0.0   15341 8       0.0   22035.1    1513.6 100000.00
      4 03      0.00      4.46      0.00     0.000     0 025    0.000     0 000    554.85    210.00
  0.000126    2325.     2325.     2325.         2         0        0      0.00    850.00   1060.00

1490 NH CARD USED
*SECNO 11.802

3470 ENCROACHMENT STATIONS=      380.0    1495.0  TYPE=      1  TARGET=     -380.000
         3920' SOUTH FROM BAY COUNTY-SAGINAW COUNTY LINE          SEC.  AD
    11.802     32.28    587.18      0 00      0.00    587.57      0.40      0.25      0.02    582.20
   68400.0    2492.4   65875.5      32.2    1797.0   12812 4      33.3   22703.6    1556.1    582.10
      4.13      1.39      5 14      0.97     0.031     0.025    0.031     0.000    554 90    380.00
  0.000130    1900.     1945.     2000         2         0        0      0.00   1061 99   1441.99

1490 NH CARD USED
*SECNO 12.569
         4050' U/S FROM SECTION AD          SEC.  AE
    12.569     34.40    587.80      0 00      0 00    587.98      0.18      0.39      0.02    583.00
   68400.0    9845.2   58363.5      191 3    6084.3   16198.2     180.7   24428.6    1682.4    582.40
      4.47      1.62      3.60      1.06     0.031     0.025    0.031     0.000    553.40      6.29
  0.000073    4050.     4050.     4050.         2         0        0      0.00   1656.18   1662.48

1490 NH CARD USED
*SECNO 13.249

3470 ENCROACHMENT STATIONS=      .230.0    1406.0  TYPE=      1  TARGET=     -230.000
         6115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE (I-75 BRIDGE)    SEC.  AF
    13.249     33.37    587.97      0.00      0.00    588.32      0.35      0.30      0.03    585.30
   68400.0    588.6   67610.9     200.5     780 3   14256.8     235.4   25983.6    1795.6    582.10
      4.69      0.75      4.74      0.85     0.031     0.025    0 031     0.000    554.60    230 00
  0.000097    3590.     3590.     3590.         2         0        0      0.00   1091 76   1321 76

1490 NH CARD USED
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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 ELFV
    TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
    SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST


*SECNO 13.747

3470 ENCROACHMENT STATIONS=       275.0     1630.0  TYPE=       1  TARGET=      -275.000
         3485' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC.  AG
    13.747     35.20     588.30      0.00      0 00    588.57      0.27      0 25      0.01    585.90
   68400.0      39.3   61455.8    6904 9       76.2   13984.2    4059.6   26991 6    1868.5    582.00
      4.86      0.52      4.39      1.70     0.031     0 025     0.031     0.000    553.10    301.50
  0.000094     2630.      2630     2630.         2         0         0      0.00   1320.40   1621.90


1490 NH CARD USED
*SECNO 14.385

3470 ENCROACHMENT STATIONS=       780.0     1380 0  TYPE=       1  TARGET=       600.000
         115' D/S FROM D/S FACE OF ZILWAUKEE BRIDGE          SEC   AH
    14.385     35.14     588.54      0.00      0.00    588.90      0.36      0.31      0.02    581.50
   68400.0     114.9   67968.7     316.4      93.9   14157.9     244.2   28253.3    1942.8    581.80
      5 06      1.22      4.80      1 30     0 031     0.026     0.031     0.000    553.40    780.00
  0.000089     3370.      3370.     3370.         2         0         0      0 00    600.00   1380 00


CCHV=     0.100 CEHV=     0.200
*SECNO 14.406
    14 406     36.11     588.51      0.00      0.00    588.92      0.40      0.01      0.01    604.40
   68400 0       0.0   68400.0       0.0       0.0   13400.7       0.0   28289.8    1944.2    600 10
      5.07      0.00      5.10      0.00     0 000     0.025     0.000     0.000    552.40     25.99
  0.000107      114.      114.      114.         2         0         0      0.00    541.53    567.52


*SECNO 14.407

3265 DIVIDED FLOW


3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.61

         D/S FACE OF ZILWAUKEE BRIDGE          SEC.  AI
    14.407     35.93     588 33      0.00      0.00    588.96      0.63      0.00      0.05    604.40
   68400.0       0 0   68400.0       0.0       0.0   10708.9       0.0   28290.1    1944.3    600.10
      5 07      0.00      6.39      0.00     0 000     0.025     0.000     0.000    552.40     26.24
  0.000287        1.        1.        1.         2         0         0      0.00    451.07    567.30
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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        EL MIN     SSTA
 SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

*SECNO 14.420

3265 DIVIDED FLOW

   14.420     35.95     588.35      0.00       0.00     588.98      0.63       0.02       0.00     604 40
 68400.0       0.0    68400.0       0 0        0.0    10715.1       0.0    28307.3     1945.0     600.10
    5 07      0.00       6.38      0.00      0.000      0.025     0.000      0.000     552.40      26.22
 0.000287      70.        70.       70.          0          0         0       0 00     451.10     567.32

*SECNO 14.421

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.65

   14 421     36.21     588.61      0.00       0.00     589.01      0 40       0.00       0.02     604.40
 68400 0       0.0    68400.0       0 0        0.0    13450.8       0.0    28307.6     1945.0     600 10
    5.07      0.00       5 09      0.00      0 000      0 025     0.000      0.000     552.40      25 86
 0.000106       1.         1.        1.          2          0         0       0.00     541.77     567.62

CCHV=    0.100 CEHV=    0 200
1490 NH CARD USED
*SECNO 15.156

3470 ENCROACHMENT STATIONS=     1567.0    2280.0  TYPE=      1  TARGET=      713.000
        3885' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE        SEC.  AJ
   15 156     35 51     589.11      0.00       0.00     589.41      0.31       0.40       0.01     588.60
 68400.0       0.0    68400.0       0.0        0.0    15418.3       0.0    29594.6     2000.9  100000.00
    5.31      0.00       4.44      0.00      0.000      0.025     0.000      0.000     553.60    1567.00
 0.000098     3884.      3884.     3884          2          0         0       0.00     713.00    2280.00

1490 NH CARD USED
*SECNO 15.470

3470 ENCROACHMENT STATIONS=     2010.0    2810.0  TYPE=      1  TARGET=    -2010.000
   15.470     36.29     589.20      0.00       0.00     589.60      0.40       0.17       0.02     582.11
 68400.0      559.4    66769.3    1071.3      449.8    13029 8      741.0    30158 3     2029.6     581.81
    5.40       1.24       5.12      1.45      0 031      0.025     0.031      0.000     552.91    2010.00
 0.000104     1657.      1657.     1657.          2          0         0       0.00     796.05    2806.05
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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 15.612

3470 ENCROACHMENT STATIONS=     2100.0    2810.0  TYPE=      1  TARGET=    -2100.000
        6295' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE          SEC.  AK
   15 612     36 68    589.28      0.00      0 00    589.68      0.39      0 08      0.00    581 80
  68400.0      90.5   67128.8    1180 7      71.6   13234.7     804.0   30402.2    2042.6    581.50
     5.44      1 26      5.07      1.47     0.031     0 025     0.031     0.000    552.60   2100.00
 0.000100      750.      750.      750.         0         0         0      0.00    710 00   2810.00


1490 NH CARD USED
*SECNO 16.169

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1000.0    2084.0  TYPE=      1  TARGET=     1084.000
        9235' U/S FROM U/S FACE OF ZILWAUKEE BRIDGE          SEC.  AL
   16.169     36.98    589.68      0.00      0.00    590.01      0.34      0.33      0.01    587.60
  68400.0     345.2   68054 8       0.0     279.8   14594.1       0.0   31380.4    2094.3 100000.00
     5.62      1.23      4.66      0.00     0.031     0.025     0.000     0.000    552 70   1000.00
 0.000126     2940.     2940.     2940.         2         0         0      0.00    822.54   2084.00

1490 NH CARD USED
*SECNO 16.500

3470 ENCROACHMENT STATIONS=      832.0    1491.0  TYPE=      1  TARGET=      659.000
        1455' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AM
   16 500     35.61    589.91      0.00      0.00    590.19      0.28      0 17      0 01    582.50
  68400.0       0.0   68400.0       0.0       0.0   16212.4       0.0   32004.8    2124.1 100000.00
     5.74      0.00      4.22      0.00     0.000     0.025     0.000     0 000    554.30    832.00
 0.000077     1750.     1750.     1750         2         0         0      0.00    659.00   1491.00


1490 NH CARD USED
*SECNO 16.758

3265 DIVIDED FLOW

3280 CROSS SECTION     16 76 EXTENDED      0.66 FEET

        95' D/S FROM D/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AN
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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

 16.758     41.86      589.96     0.00       0.00       590.30     0 35       0 10       0.01       587.60
68000.0     12.7       67707.1    280.2      29.3       14312.6    298.3      32486.4    2143.4     581.90
   5 82     0.43       4.73       0.94       0.031      0.025      0.031      0.000      548.10     0.00
0.000071    1360.      1360.      1360.      2          0          0          0.00       576.91     600.00

1490 NH CARD USED
*SECNO 16.775
3280 CROSS SECTION      16.77 EXTENDED      0.12 FEET

3470 ENCROACHMENT STATIONS=      770.0     1340 0  TYPE=      1  TARGET=      570.000
 16.775     42.12      589.92     0.00       0.00       590 32     0.40       0.01       0.01       593 40
68000.0     0.0        68000.0    0.0        0.0        13435.4    0.0        32517.0    2144.6     100000.00
   5.82     0 00       5.06       0.00       0.000      0.025      0.000      0.000      547.80     770.00
0.000116    95.        95.        95.        2          0          0          0.00       561.18     1331.18

1490 NH CARD USED
*SECNO 16.776

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0 60

3470 ENCROACHMENT STATIONS=      770.0     1342.0  TYPE=      1  TARGE!=      572.000
        D/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AO
 16.776     42.05      589.85     0.00       0 00       590.34     0.49       0.00       0.02       593.40
68000.0     0.0        68000.0    0.0        0.0        12118.4    0.0        32517.3    2144 6     100000.00
   5.82     0.00       5 61       0.00       0.000      0 025      0.000      0.000      547.80     770.00
0.000317    1.         1.         1.         2          0          0          0.00       506.31     1331.31

*SECNO 16.781

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=      770.0     1342.0  TYPE=      1  TARGET=      572.000
 16 781     42 06      589 86     0 00       0.00       590 35     0.49       0.01       0.00       593.40
68000.0     0.0        68000.0    0.0        0.0        12121.3    0.0        32524.8    2144 9     100000.00
   5.82     0.00       5.61       0.00       0.000      0.025      0.000      0.000      547.80     770.00
0 000317    27.        27.        27.        0          0          0          0.00       506.33     1331.33
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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       EI MIN    SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 16.782
3280 CROSS SECTION     16.78 EXTENDED      0.16 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.66

3470 ENCROACHMENT STATIONS=      770.0    1340.0  TYPE=      1  TARGET=      570.000
   16.782     42.16     589 96      0.00      0 00    590.36      0.40      0.00      0.01    593.40
 68000.0       0.0    68000.0       0.0       0.0   13456.6       0.0   32525.1    2145.0 100000.00
    5.82      0.00      5.05      0.00     0.000     0.025     0.000     0.000    547.80    770.00
 0.000115       1.        1.        1.         2         0         0      0.00    561.25   1331.25

1490 NH CARD USED
*SECNO 17.282

3470 ENCROACHMENT STATIONS=      320.0     912.0  TYPE=      1  TARGET=      592.000
        2645' U/S FROM U/S FACE OF SIXTH AVENUE BRIDGE          SEC.  AP
   17 282     34.49     590 29      0.00      0 00    590.64      0.35      0.27      0.00    581.80
 68000.0       0.0    68000.0       0.0       0.0   14378.4       0.0   33369 9    2180.0 100000.00
    5.98      0.00      4.73      0.00     0.000     0.025     0 000     0.000    555 80    320.00
 0.000093     2644      2644.     2644.        2         0         0      0.00    592.00    912 00

1490 NH CARD USED
*SECNO 17.758

3470 ENCROACHMENT STATIONS=      540.0     990.0  TYPE=      1  TARGET=      450.000
         175' D/S FROM D/S FACE OF C&O RAILROAD BRIDGE           SEC.  AQ
   17.758     36 25    590.45      0.00      0.00    590.92      0.47      0.26      0.02    581.70
 68000.0       0.0    68000.0       0.0       0.0   12337.6       0.0   34139.6    2210.0 100000.00
    6.10      0.00      5.51      0.00     0.000     0.025     0.000     0.000    554.20    540 00
 0.000113     2510      2510.     2510         2         0         0      0.00    450.00    990.00

CCHV=    0.100 CEHV=    0.200
*SECNO 17 790
   17.790     39.50    590.70      0 00      0.00    590.96      0.25      0.02      0.02    596.80
 68000.0       0.0    68000.0       0.0       0.0   16893.5       0.0   34197.7    2212.3    596.90
    6.12      0.00      4.03      0.00     0.000     0.025     0.000     0.000    551.20   1125 71
 0.000075     173.      173.      173.         2         0         0      0.00    729.76   1855.47
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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

*SECNO 17.791

3265 DIVIDED FLOW

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 0 70

3370 NORMAL BRIDGE, NRD= 26 MIN ELTRD= 593.00 MAX ELLC= 592.60

D/S FACE OF C&O RAILROAD BRIDGE SEC. AR

17.791	39.47	590 67	0.00	0.00	590.96	0.29	0.00	0.01	596.80
68000.0	0.0	68000.0	0.0	0.0	15692.2	0.0	34198.0	2212.3	596.90
6.12	0.00	4.33	0.00	0.000	0.025	0.000	0.000	551.20	1125.00
0 000154	1.	1.	1	2	0	0	-135.04	697.00	1857.00

*SECNO 17 797

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 26 MIN ELTRD= 593.00 MAX ELLC= 592.60

17.797	39.48	590.68	0.00	0.00	590.97	0.29	0.00	0.00	596.80
68000.0	0.0	68000.0	0.0	0.0	15694 2	0.0	34209.6	2212.8	596 90
6.12	0.00	4.33	0.00	0 000	0.025	0.000	0.000	551.20	1125.00
0.000154	32.	32.	32.	0	0	0	-135.52	697.00	1857.00

*SECNO 17.798

3302 WARNING: CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE, KRATIO = 1.43

17.798	39.52	590 72	0.00	0.00	590.97	0.25	0.00	0.00	596.80
68000.0	0.0	68000.0	0.0	0.0	16906.3	0.0	34209.9	2212.9	596.90
6.12	0.00	4.02	0.00	0.000	0.025	0.000	0.000	551.20	1125.71
0.000075	1	1.	1.	2	0	0	0.00	729.76	1855.47

1490 NH CARD USED
*SECNO 18.134

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 SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     L-BANK ELEV
 Q         GLOB      GCH       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


3470 ENCROACHMENT STATIONS=     1275.0    1835.0  TYPE=      1  TARGET=      560.000
        140' D/S FROM D/S FACE OF I-675 BRIDGE        SEC.  AS
   18.134     32.67    590.77      0.00      0.00    591.16      0.39      0.16      0.03    582.00
  68000.0       0.0   68000.0       0.0       0.0   13529.5       0.0   34832.8    2239 3 100000.00
     6 22      0.00      5.03      0.00     0.000     0.025     0.000     0.000    558 10   1275.00
 0.000106     1783.     1783.     1783.         2         0         0      0.00    560 00   1835.00


1490 NH CARD USED
*SECNO 18.160

3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
   18 160     33.95    590.75      0.00      0.00    591.18      0.43      0.02      0.01 100000.00
  68000.0       0.0   67999.9       0.1       0.0   12956.5       0.8   34875.7    2241.1    590.60
     6.22      0.00      5.25      0 09     0.000     0.025     0.031     0.000    556.80   1100 00
 0.000118      141.       141      141.         2         0         0      0.00    550 26   1650 26


1490 NH CARD USED
*SECNO 18.161

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
        D/S FACE OF I-675 BRIDGE          SEC.  AT
   18.161     33.93    590.73      0.00      0.00    591.19      0.45      0.00      0.01 100000.00
  68000.0       0.0   68000.0       0.0       0 0   12564.9       0.0   34876.0    2241.1    591.50
     6 22      0.00      5.41      0.00     0.000     0.026     0.000     0.000    556.80   1100.00
 0.000209        1.        1.        1.         2         0         0      0.00    516.00   1631.00


*SECNO 18.180

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
   18.180     33 95    590.75      0.00      0 00    591 21      0.45      0.02      0 00 100000.00
  68000.0       0.0   68000.0       0 0       0.0   12573.0       0.0   34903.7    2242.2    591.50
     6.23      0.00      5.41      0.00     0.000     0.026     0.000     0 000    556.80   1100 00
 0.000209       96.       96.       96.         0         0         0      0.00    516.00   1631.00
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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       EL MIN    SSTA
 SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

1490 NH CARD USED
*SECNO 18.181

3470 ENCROACHMENT STATIONS=     1100.0    1750.0  TYPE=      1  TARGET=      650.000
   18.181      33.98     590.78      0.00      0.00    591 21      0.43      0.00      0.00 100000.00
  68000.0       0.0    67999.9       0.1       0.0   12972.5       1.1   34904.0    2242.2     590.60
    6.23      0.00       5.24      0.10     0.000     0.025     0.031     0.000    556.80    1100.00
 0.000117        1.         1.         1         2         0         0      0.00    552.23    1652 23

CCHV=    0.100 CEHV=    0.200
*SECNO 18.267

3470 ENCROACHMENT STATIONS=     1075.0    1593.0  TYPE=      1  TARGET=      518.000
   18.267      38.27     590.87      0.00      0.00    591.26      0.39      0.05      0.00     597.10
  68000 0        0 0   68000.0       0.0       0.0   13493 7       0.0   35045.9    2248.0 100000.00
    6 26      0.00       5.04      0.00     0.000     0.025     0.000     0.000    552.60    1075.00
 0.000101      467.       467.      467.         1         0         0      0.00    518.00    1593 00

*SECNO 18.268

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.65

3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   589.10 MAX ELLC=   593.30

3470 ENCROACHMENT STATIONS=     1075.0    1593.0  TYPE=      1  TARGET=      518.000
         D/S FACE OF JOHNSON STREET BRIDGE          SEC.  AU
   18.268      38.21     590.81      0 00      0.00    591 28      0.47      0.00      0.02     592.50
  68000.0       0.0    68000.0       0.0       0.0   12302.9       0.0   35046.2    2248 0 100000.00
    6.26      0.00       5.53      0.00     0.000     0.025     0.000     0.000    552.60    1075.00
 0.000236        1.         1.         1         2         0         0    -93.73    500.00    1593.00

*SECNO 18.273

3265 DIVIDED FLOW
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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


3370 NORMAL BRIDGE, NRD=  31 MIN ELTRD=   589.10 MAX ELLC=   593.30

3470 ENCROACHMENT STATIONS=      1075.0    1593.0  TYPE=       1  TARGET=      518.000
   18.273     38.21    590.81      0.00      0.00    591.29      0.47      0.01      0.00    592.50
 68000.0       0.0  68000.0       0.0       0.0   12304.9       0.0   35053.5    2248.3 100000.00
    6.26      0.00      5.53      0.00     0.000     0.025     0.000     0.000    552.60   1075.00
0.000236       26.       26.       26.         0         0         0    -93.95    500.00   1593.00

*SECNO 18.274

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.53

3470 ENCROACHMENT STATIONS=      1075.0    1593.0  TYPE=       1  TARGET=      518.000
   18.274     38.30    590.90      0.00      0.00    591.29      0.39      0.00      0.01    597.10
 68000.0       0.0  68000.0       0.0       0.0   13512.8       0.0   35053.8    2248.3 100000.00
    6.26      0.00      5.03      0.00     0.000     0.025     0.000     0.000    552.60   1075.00
0.000101        1.        1.        1.         2         0         0      0.00    518.00   1593.00


1490 NH CARD USED
*SECNO 18.335

3470 ENCROACHMENT STATIONS=       418.0     848.0  TYPE=       1  TARGET=      430.000
         327' U/S FROM U/S FACE OF JOHNSON STREET BRIDGE          AV
   18.335     35.18    590.88      0.00      0.00    591.34      0.47      0.03      0.01    576.70
 68000.0       0.0  68000.0       0.0       0.0   12387.7       0.0   35150.7    2251.8 100000.00
    6.27      0.00      5.49      0.00     0.000     0.025     0.000     0.000    555.70    418.00
0.000110      326.      326.      326         2         0         0      0.00    430.00    848.00


1490 NH CARD USED
*SECNO 18.430

3470 ENCROACHMENT STATIONS=       400.0     841.0  TYPE=       1  TARGET=      441.000
   18.430     35.51    590.91      0.00      0.00    591.41      0.51      0.06      0.01    599.50
 68000.0       0.0  67997.8       2.2       0.0   11920.0       7.0   35292.2    2256.9    576.20
    6.30      0.00      5.70      0.32     0.000     0.025     0.031     0.000    555.40    401.82
0.000125      507.      507.      507.         2         0         0      0.00    439.18    841.00
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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

CCHV=    0.100 CEHV=    0 200
*SECNO 18.431

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0 60

3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
        D/S FACE OF GENESEE AVENUE BRIDGE        SEC  AW
   18.431     35.36    590 76      0.00      0.00    591.45      0.69      0.00      0.04    599.50
  68000.0       0.0   68000.0       0 0       0.0   10213.9       0 0   35292.5    2256.9    596.60
     6.30      0.00      6.66      0.00     0.000     0.025     0.000     0.000    555.40    400.00
 0.000352        1.        1.        1.         2         0         0      0.00    428.50    840.50

*SECNO 18 444

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
   18.444     35.38    590.78      0.00      0.00    591.47      0.69      0.02      0.00    599.50
  68000.0       0.0   68000.0       0 0       0.0   10220.4       0.0   35307.5    2257.5    596.60
     6.30      0.00      6 65      0 00     0.000     0 025     0.000     0.000    555.40    400 00
 0.000351       64.       64.       64.         0         0         0      0.00    428.50    840.50

*SECNO 18.445

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1 68

3470 ENCROACHMENT STATIONS=      400.0     841.0  TYPE=      1  TARGET=      441.000
   18 445     35.59    590.99      0.00      0.00    591.49      0.50      0.00      0.02    599.50
  68000 0       0.0   67997.8       2.2       0.0   11955.6       7.0   35307 7    2257.5    576.20
     6.30      0.00      5.69      0.32     0.000     0.025     0.031     0 000    555.40    401.80
 0.000124        1.        1.        1.         2         0         0      0.00    439.20    841 00

1490 NH CARD USED
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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 18.598

3470 ENCROACHMENT STATIONS=      265.0     700.0  TYPE=      1  TARGET=      435 000
         820' U/S FROM U/S FACE OF GENESEE AVENUE BRIDGE          SEC.  AX
    18.598     32.15     591.05       0.00       0.00     591.61       0.55       0.11       0.01     581.90
   68000.0       0.0   68000.0        0.0        0.0    11388.9        0.0    35526.7     2265.7  100000.00
      6 34      0.00       5.97       0.00      0.000      0.025      0.000      0.000     558.90     265.00
  0.000140      817       817.       817.          2          0          0       0.00     435.00     700 00

1490 NH CARD USED
*SECNO 18.871

3470 ENCROACHMENT STATIONS=      190.0     650 0  TYPE=      1  TARGET=      460.000
         360' D/S FROM D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2    SEC.AY
    18.871     33 41     591.31       0.00       0.00     591.80       0.49       0.19       0 01     586.80
   68000.0       0.0   68000.0        0.0        0.0    12129.2        0.0    35915.5     2280.5  100000.00
      6.41      0.00       5.61       0.00      0.000      0.025      0.000      0.000     557.90     190.00
  0.000122     1440.      1440.      1440          2          0          0       0.00     460.00     650.00

1490 NH CARD USED
*SECNO 18 938
    18.938     36.54     591.44       0.00       0.00     591.85       0.41       0.04       0.01     596.40
   68000.0       0.0   68000.0        0.0        0.0    13210.4        0.0    36019.3     2284.7     596.80
      6.43      0 00       5.15       0.00      0 000      0.025      0.000      0.000     554.90     300.00
  0.000114      357       357.       357.          2          0          0       0.00     550.00     850.00

CCHV=     0.100 CEHV=     0.200
*SECNO 18.939

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0 65

3370 NORMAL BRIDGE, NRD=  25 MIN ELTRD=   593.60 MAX ELLC=   592.50

         D/S FACE OF PENN CENTRAL RAILROAD BRIDGE #2   SEC.  AZ
    18.939     36.43     591.33       0.00       0.00     591.88       0.55       0 00       0.03     596.40
   68000.0       0.0   68000.0        0 0        0.0    11422.8        0.0    36019.6     2284.7     596.80
      6 43      0.00       5.95       0.00      0.000      0.025      0.000      0.000     554.90     300.00
  0.000272        1.         1.         1.          2          0          0       0.00     479.00     850.00
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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

*SECNO 18.944

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD=  25 MIN ELTRD=   593.60 MAX ELLC=   592 50

   18 944     36.44    591.34      0.00      0.00    591.89      0.55      0.01      0.00    596 40
 68000.0       0.0   68000.0       0 0       0.0   11425.0       0.0   36025.9    2284.9    596.80
    6 43      0.00      5.95      0.00     0.000     0.025     0.000     0.000    554.90    300.00
 0.000272      24.       24.       24.         0         0         0      0 00    479.00    850.00

*SECNO 18.945

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.54

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       596.40 ELREA=       596.80

   18.945     36.59    591.49      0.00      0.00    591.90      0.41      0.00      0.01    596.40
 68000.0       0.0   68000 0       0 0       0.0   13238 2       0.0   36026.1    2284.9    596.80
    6.43      0.00      5.14      0.00     0.000     0.025     0.000     0.000    554.90    300.00
 0.000115       1.        1.         1         2         0         0      0.00    550.00    850 00

1490 NH CARD USED
*SECNO 19.432

3470 ENCROACHMENT STATIONS=      390.0     900.0  TYPE=      1  TARGET=      510.000
         165' D/S FROM D/S FACE OF HOLLAND STREET BRIDGE        SEC. BA
   19.432     31 84    591.74      0.00      0.00    592.26      0.52      0.34      0.02    590.00
 68000.0       0.0   68000.0       0.0       0 0   11787.2       0.0   36766.4    2316.3 100000 00
    6.55      0.00      5.77      0.00     0.000     0.025     0.000     0.000    559.90    390.00
 0.000150     2577.     2577.     2577.         2         0         0      0.00    510.00    900.00

1490 NH CARD USED
*SECNO 19.462

3470 ENCROACHMENT STATIONS=      730.0    1333 0  TYPE=      1  TARGET=      603.000
   19.462     30.98    591.88      0.00      0.00    592.29      0.41      0.02      0.01    582.80
 68000 0       0.0   68000.0       0.0       0.0   13178.8       0.0   36813.7    2318.4 100000 00
    6.56      0.00      5.16      0.00     0 000     0.025     0 000     0.000    560.90    730 00
 0 000125     165.      165.      165          2         0         0      0.00    575.79   1305.79
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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

CCHV=    0.100 CEHV=    0.200
*SECNO 19.463

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=   601.10 MAX ELLC=   600.40


3470 ENCROACHMENT STATIONS=      730.0    1333.0  TYPE=      1  TARGET=      603.000
        D/S FACE OF HOLLAND STREET BRIDGE          SEC. BB
   19.463     30.95    591.85      0.00      0.00    592.30      0.45      0.00      0.01    582.80
  68000.0       0.0  68000.0       0.0       0.0   12671.5       0.0   36814.0    2318.4 100000.00
     6.56      0.00      5.37      0.00     0.000     0.025     0.000     0.000    560.90    730.00
 0.000215        1.        1.        1.         2         0         0      0.00    555.67   1305.67

*SECNO 19.476

3265 DIVIDED FLOW


3370 NORMAL BRIDGE, NRD=  16 MIN ELTRD=   601.10 MAX ELLC=   600.40


3470 ENCROACHMENT STATIONS=      730.0    1333.0  TYPE=      1  TARGET=      603.000
   19.476     30.97    591.87      0.00      0.00    592.31      0.45      0.01      0.00    582.80
  68000.0       0.0  68000.0       0.0       0.0   12677.9       0.0   36833.8    2319.2 100000.00
     6.57      0.00      5.36      0.00     0.000     0.025     0.000     0.000    560.90    730.00
 0.000215       68.       68.       68.         0         0         0      0.00    555.72   1305.72

*SECNO 19.477

3470 ENCROACHMENT STATIONS=      730.0    1333.0  TYPE=      1  TARGET=      603.000
   19.477     31.00    591.90      0.00      0.00    592.32      0.41      0.00      0.00    582.80
  68000.0       0.0  68000.0       0.0       0.0   13193.8       0.0   36834.1    2319.3 100000.00
     6.57      0.00      5.15      0.00     0.000     0.025     0.000     0.000    560.90    730.00
 0.000123        1.        1.        1.         2         0         0      0.00    575.92   1305.92

1490 NH CARD USED
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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 20.115

3470 ENCROACHMENT STATIONS=       386.0      910 0  TYPE=       1  TARGET=       524.000
    20.115     35.28     592.28      0.00       0.00     592.74      0.47       0.42       0.01     592.90
   68000.0       0.0   68000.0       0.0        0.0   12418.6       0.0   37827.5    2361.5 100000.00
      6.74      0.00      5.48      0.00      0.000     0 025     0.000      0.000     557.00     396.94
  0.000125     3379.      3379     3379.          2         0         0      0 00     513 06     910.00

CCHV=    0 100 CEHV=    0.200
*SECNO 20.116

3265 DIVIDED FLOW

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.65

3470 ENCROACHMENT STATIONS=       386.0      910.0  TYPE=       1  TARGET=       524.000
         D/S FACE OF COURT STREET BRIDGE          SEC.  BC
    20.116     35.16     592.16      0.00       0 00     592.77      0.61       0.00       0.03     615.80
   68000.0       0.0   68000.0       0.0        0.0   10831 8       0.0   37827.7    2361.5 100000.00
      6.74      0.00      6.28      0.00      0.000     0 025     0.000      0.000     557.00     398.91
  0.000298        1.        1.        1.          2         0         0      0.00     449.09     910.00

*SECNO 20.128

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS=       386.0      910.0  TYPE=       1  TARGET=       524.000
    20.128     35.18     592 18      0.00       0 00     592.79      0.61       0.02       0.00     615.80
   68000.0       0.0   68000.0       0.0        0.0   10837.5       0.0   37842.6    2362.1 100000.00
      6.74      0.00      6 27      0.00      0.000     0.025     0.000      0.000     557.00     398.70
  0.000298       60.       60.       60          0         0         0      0.00     449.30     910.00

*SECNO 20.129

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.52
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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


3470 ENCROACHMENT STATIONS=      386.0     910 0  TYPE=      1  TARGET=      524.000
   20.129     35.34    592.34      0.00      0.00    592.81      0.46      0.00      0.01    592.90
  68000.0       0.0   68000.0       0.0       0.0   12451 9       0.0   37842 9    2362.1 100000.00
     6.74      0.00      5.46      0.00     0.000     0.025     0.000    0 000    557.00    395.85
 0 000130        1.        1.        1.         2         0         0     0 00    514.15    910.00


1490 NH CARD USED
*SECNO 20.287
3280 CROSS SECTION     20.29 EXTENDED      1.00 FEET


3470 ENCROACHMENT STATIONS=      120.0     810.0  TYPE=      1  TARGET=      690.000
        840' U/S FROM U/S FACE OF COURT STREET BRIDGE     SEC.  BD
   20.287     26.70    592.60      0.00      0.00    592.92      0.32      0.10      0.01    590.00
  68000.0       0.0   68000.0       0.0       0.0   15021.4       0.0   38107 5    2373.7 100000.00
     6.79      0.00      4.53      0.00     0.000     0.025     0.000     0.000    565.90    120.00
 0.000100      839.      839.      839.         2         0         0      0.00    690.00    810.00


1490 NH CARD USED
*SECNO 20.513

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      601.00 ELREA=      601.00

   20.513     28.08    592.68      0.00      0.00    593.06      0.38      0.13      0.01    600.80
  68000.0       0.0   68000.0       0 0       0 0   13754.8       0.0   38503.5    2391.7    600.80
     6.86      0.00      4.94      0.00     0.000     0.025     0.000     0.000    564.60    736 63
 0.000115     1199.     1199.      1199         2         0         0      0.00    619.45   1356.08


CCHV=    0.100 CEHV=    0 200
*SECNO 20.514

3265 DIVIDED FLOW


3302 WARNING·  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  0.69


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=      601.00 ELREA=      601.00
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        D/S FACE OF RUST ROAD BRIDGE          SEC. BE
   20 514     28.05    592.65      0 00      0.00    593.06      0.41      0.00      0.01    600.80
  68000.0       0 0   68000.0       0.0       0.0   13183.8       0.0   38503.8    2391.8    600.80
     6.86      0 00      5.16      0.00     0.000     0.025     0.000     0.000    564.60    738.55
 0.000240        1.         1        1.         2         0         0      0 00    595.31   1357 86

*SECNO 20 527

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       601.00 ELREA=       601.00

   20.527     28.07    592.67      0.00      0.00    593.08      0.41      0 02      0.00    600.80
  68000.0       0.0   68000 0       0.0       0.0   13191.2       0.0   38525.0    2392.7    600.80
     6.86      0.00      5.15      0.00     0.000     0.025     0.000     0.000    564.60    738.53
 0.000240       70.       70.       70         0         0         0      0 00    595.36   1357.89

*SECNO 20.528

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.45

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       601.00 ELREA=       601 00

   20.528     28.11    592.71      0.00      0 00    593 09      0 38      0.00      0 00    600 80
  68000.0       0.0   68000.0       0.0       0.0   13772.3       0.0   38525.3    2392.7    600.80
     6.86      0.00      4.94      0 00     0 000     0.025     0.000     0.000    564.60    736.57
 0.000115        1.         1        1.         2         0         0      0.00    619.58   1356.15

1490 NH CARD USED
*SECNO 21.059

3470 ENCROACHMENT STATIONS=     1615 0    2220.0  TYPE=      1  TARGET=      605.000
        180' D/S FROM D/S FACE OF CENTER STREET BRIDGE    SEC. BF
   21.059     28.12    593.02      0.00      0 00    593.41      0.40      0.32      0.00    593.30
  68000.0       0.0   68000.0       0.0       0.0   13460.9       0 0   39401.9    2431.9 100000.00
     7.02      0.00      5 05      0.00     0.000     0.025     0.000     0.000    564.90   1615 32
 0 000116     2804.     2804.     2804         2         0         0      0.00    598.89   2214.21

1490 NH CARD USED
*SECNO 21.092

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00
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  SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS      L-BANK ELEV
  Q          GLOB       QCH        GROB       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

  21.092     29.44      593.14     0 00       0.00       593.44     0.30       0.02       0.01       601.20
 68000.0      0.0      68000.0      0.0        0.0      15415.0      0.0      39461.2     2434.8     607.60
    7.03     0.00        4.41      0.00      0.000       0.025    0.000       0.000     563.70    1165.00
0.000108     179.        179.      179.          2           0        0        0.00     781.72    1946 72

CCHV=    0.100 CEHV=    0.200
*SECNO 21.093

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00

        D/S FACE OF CENTER STREET BRIDGE        SEC. BG
  21 093     29.43      593.13     0.00       0.00       593.44     0.32       0 00       0.00       601.20
 68000.0      0.0      68000.0      0.0        0.0      15072.8      0.0      39461.5     2434.8     607 60
    7.03     0 00        4.51      0.00      0.000       0 025    0.000       0.000     563.70    1165.00
0.000159       1.          1.        1.          1           0        0        0.00     763.70    1946.70

*SECNO 21.108

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608 00

   21.108     29.44      593.14     0.00       0 00       593 46     0.32       0.01       0.00       601.20
 68000.0      0.0      68000.0      0.0        0.0      15076.7      0.0      39489.2     2436.2     607.60
    7.03     0.00        4.51      0 00      0 000       0 025    0.000       0.000     563 70    1165.00
0.000159      80          80.       80.          0           0        0        0.00     763.72    1946 72

*SECNO 21.109

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA=       602.00 ELREA=       608.00

   21.109     29.46      593.16     0 00       0.00       593.46     0.30       0 00       0.00       601.20
 68000.0      0.0      68000.0      0.0        0.0      15422.5      0.0      39489.6     2436.2     607.60
    7.03     0.00        4 41      0.00      0.000       0 025    0.000       0.000     563 70    1165.00
0.000107       1.          1.        1.          1           0        0        0.00     781.75    1946.75
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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      ITR1AL     IDC        ICONT      CORAR      TOPWID     ENDST

CCHV=    0.100 CEHV=    0.200
*SECNO 21.722
3280 CROSS SECTION     21.72 EXTENDED      2.59 FEET

3470 ENCROACHMENT STATIONS=      530.0    2300.0  TYPE=      1  TARGET=     1770.000
         3240' U/S FROM U/S FACE OF CENTER STREET BRIDGE   SEC.  BH
    21.722     28.28    593.58      0.00       0.00    593.73      0.14       0.25       0.02    589.00
   68000.0   26920.9   41079.1       0 0    13181.0   11637.8       0.0    40985.7     2531.1 100000.00
      7.34      2.04      3 53      0.00      0.027     0.025     0.000      0.000     565.30    530.00
  0.000059     3239.     3239.     3239.          0         0         0       0.00    1770.00   2300.00

CCHV=    0.100 CEHV=    0.200
*SECNO 22.186
3280 CROSS SECTION     22.19 EXTENDED      4.17 FEET

3302 WARNING:  CONVEYANCE CHANGE OUTSIDE OF ACCEPTABLE RANGE,  KRATIO =  1.44

3470 ENCROACHMENT STATIONS=        0.0    3200.0  TYPE=      1  TARGET=     3199.999
         INTERSECTION OF TITTABAWASSEE RIVER AND SAGINAW RIVER  SEC. BI
    22.186     30.47    593.77      0.00       0.00    593.83      0.07       0.10       0.01    591.40
   68000.0   25687.0   34350.4    7962.6    18526.6   13446.4    6687 0    42770.8     2670.9    585.40
      7 69      1.39      2.55      1.19      0 027     0 025     0 027      0 000     563.30      0.00
  0.000028     2450.     2450      2450.          2         0         0      0 00    3200.00   3200.00
```

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: REPORT

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

IN REPLY REFER TO

Great Lakes Hydraulics and Hydrology Branch

Mr. Bruce Menerey, P.E.
Technical Programs
Land and Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

Dear Mr. Menerey:

In response to your review comments on the Saginaw River FIS Restudy for Bay and Saginaw Counties as contained in your letter dated August 12, 1991, we have revised the hydraulics from cross section 6.222 to cross section 8.099. Only the main channel and its discharge are being modelled; all encroachments have been replaced. The results at Green Point have changed only a small amount. Due to the minor changes made in the HEC-2 model for this study, it was felt that there is no need to model the smaller channel at Middle Ground Island. The flood plain in this area is under the influence of Saginaw Bay. The floodway results from the previous study will be used on the smaller channel at Middle Ground Island. Copies of the HEC-2 models are provided for your review and approval.

If you have any questions regarding the enclosed data, please contact Mr. Bruce Holbrook or Mr. David Schweiger at (313) 226-4886.

Sincerely,

David L. Schweiger
for Ronald E. Wilshaw, P.E.
Chief, G.L. Hydraulics and
Hydrology Branch

Enclosure

Telex: 23-5793
Phone: (313) 334-9901

Update Letter

Johnson&Anderson,Inc.
CONSULTING ENGINEERS
P.O. Box 1166 • 2300 Dixie Highway • Pontiac, Mich. 48056

September 21, 1977

Mr. Daniel H. Morgan, P.E., Chief
Flood Insurance Unit
MDNR-Water Management Division
5th Floor, Mason Building
Lansing, Michigan 48909

RECEIVED
SEP 23 1977
WATER MANAGEMENT

Re: Spaulding Township FIS
Cass River Hydraulics

Ref: J&A File No. 5670-09-1

Dear Mr. Morgan:

The Spaulding Township flooding has been reevaluated and we are now proposing to treat this area as a lake situation. Our analysis of the flood elevations at Green Point, the upstream end of the Saginaw River, and the Shiawassee Flats gage, Flint River at Alicia, shows that for the higher flows the Flats will act as a lake with no significant hydraulic gradient. Since the flooding is now considered lacustrine, a floodway is not appropriate for the Spaulding Township portion of the Shiawassee Flats and none is proposed. The elevations we have determined for Spaulding Township are as follows:

10-year	589.87	
50-year	592.73	Elevations
100-year	593.86	NGVD 1929
500-year	596.57	

Enclosed for your files is a copy of the computer information used to confirm the above. Considering the comments of your letter of June 27, 1977, and the enclosed data, we consider the Spaulding Township flood elevations to have your approval.

Sincerely,

Gerald A. Cleary

Gerald A. Cleary, P.E.
Vice President

DDC/dp
enc.
cc: File

SAGINAW BAY AREA FLOOD INSURANCE STUDIES

HYDRAULIC ANALYSIS
SAGINAW RIVER

J&A FILE NOS.

5555-01, 02, 18, 21, 28,
55, 60, 74, and 75

Johnson & Anderson, Inc.
Consulting Engineers
2300 Dixie Highway, P. O. Box 1166
Pontiac, Michigan 48056

Telex: 23-5793
Phone: (313) 334-9901

Johnson&Anderson,Inc.
CONSULTANTS
P. O. Box 1166 ▫ 2300 Dixie Highway ▫ Pontiac, Mich. 48056

RECEIVED
APR 19 1977
WATER MANAGEMENT

April 14, 1977

Water Management Division
Bureau of Land & Water Management
Michigan Dept. of Natural Resources
Post Office Box 30028
Lansing, Michigan 48909

Attention: Mr. Daniel H. Morgan, Acting Chief
Flood Insurance Unit

Re: Saginaw Bay Area Flood Insurance Studies
Saginaw River

Ref: J&A File Nos. 5555-01, 02, 18, 21, 28, 55, 60, 74, & 75

Gentlemen:

Enclosed for your review is our hydraulic analysis of the Saginaw River. The analysis extends from the river's mouth in Saginaw Bay to its confluence with the Tittabawassee and Shiawassee Rivers.

Included with this submittal are the following items:

1. HEC-2 computer run, 4 flows and IPLOT for 100-year flow
2. HEC-2 computer run, 4 flows, natural floodway
3. Prints of plan view and profile
4. Hydraulic analysis report and support data

Your assistance in expediting the review would be greatly appreciated. If you have any questions, please contact Jim Kreger or Tom Baier, project managers for the above referenced Flood Insurance Studies.

Thank you for your cooperation.

Sincerely,

Gerald A. Cleary

Gerald A. Cleary, P.E.
Vice President

JAK/dp
enclosures
cc: File

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Appendix C - Bridge Data and Field Sketched

HYDRAULIC ANALYSIS

Introduction

This study pertains to the Saginaw River which is located in Bay County and Saginaw County, Michigan. The project managers for the various Flood Insurance Studies encompassing portions of the Saginaw River are James A. Kreger and Thomas A. Baier.

Our analysis begins at the river mouth in Saginaw Bay and encompasses the entire length of approximately 22 miles to its confluence with the Tittabawassee and Shiawassee Rivers.

Nine communities are affected by the study. These communities consist of the townships of Bangor, Frankenlust,* Hampton,* Portsmouth,* Saginaw and Zilwaukee and the cities of Bay City, Essexville, and Zilwaukee.

Including its tributaries, the Saginaw River has a total drainage area of approximately 6278 square miles.

The flows used in this analysis were determined by the analysis of existing gage records from the gaging station located at Genesee Avenue in the city of Saginaw. Adjustments were made after taking into consideration significant storage areas adjacent to Cheboyganing Creek in Portsmouth Township and Dutch Creek in Frankenlust Township. Flows having a recurrence interval of 10-, 50-, 100-, and 500-years were calculated to the mouth of the Saginaw River. These flows were approved by the Michigan Department of Natural Resources.

*Project manager for these studies is James A. Kreger.

Method of Analysis

Water-surface profiles were computed utilizing the HEC-2 computer program developed by the U.S. Army Corps of Engineers.[1] All bridges were modeled for the HEC-2 normal bridge routine. For those bridges having a minimum low chord above the water-surface elevation for the 500-year flow, only GR points were coded. The hydraulic model was developed for the 100-year flow and it was assumed that flooding would occur during the spring of the year. Valley sections upstream and downstream of bridges were located out of the influence of the bridge constrictions where flow would be possible across the full cross section.

Cross sections of the Saginaw River were obtained by field survey crews during May, June, and July of 1976. Additional field pick-ups were obtained in January 1977. Many of the cross sections contained a total number of ground points in excess of the quantity acceptable by the HEC-2 computer program. To overcome this problem, the ground points used in the backwater analysis were carefully selected and their number reduced in quantity which would allow processing of input data. Areas which were considered non-effective to flow and/or which lacked hydraulic continuity between sections were eliminated from the overbank data. The decision to eliminate certain areas was based on judgments made after investigating available USGS maps and studying preliminary data output.

Because the reduction of cross-sectional area caused by bridge piers is small, and because of small variations in cross sections throughout the entire river,

[1]U.S. Army Corps of Engineers, Hydrologic Engineering Center, Computer Program 723-X6--L202A.

the coefficients of contraction and expansion were assumed to be 0.1 and 0.2, respectively. The approach and entrance geometry implied that the flow net at the structure would not differ greatly from the flow pattern in the open channel where these values were used. We assumed streamlines in the direction of flow were only slightly deflected resulting in a gradual straight-line transition.

At the Penn Central Railroad Bridge (SECNO = 18.939) in the city of Saginaw, the water-surface elevation of the 500-year flood computed by the HEC-2 routine was higher than the maximum low chord of the bridge; therefore, the headwater elevation was determined by hand calculations.

Roughness Coefficients

The roughness coefficients (Manning's "n") were established by comparing photographs and field descriptions taken in Bay County and Saginaw County by survey crews in June 1976 with the photographs and descriptions found on pages 101 to 123 in Ven Te Chow's Open-Channel Hydraulics. Photographs and descriptions found in the Geological Survey Water-Supply Paper 1849, Roughness Characteristics of Natural Channels, were also studied. The values were found to average about 0.028 for the channel and 0.035 for the overbank areas.

Starting Point

Profile computations began at Saginaw Bay using a mean bay elevation of 579.34 (USGS datum) for all flows. The mean lake elevation was chosen rather than

the mean flood elevation because the Saginaw River is at flood stage approximately a week after the precipitation event. Therefore, we feel that there is no reason to believe that a storm pattern causing bay flooding is predictively related to the weather pattern causing precipitation a week prior. Further, the bay has as much chance of being 2.53' below the mean lake elevation as it has of being above the mean lake elevation. Stationing was recorded as river miles commencing from the mouth of the river at Saginaw Bay.

In the final Flood Insurance Study report, the 10-, 50-, 100-, and 500-year Saginaw Bay elevations will be extended horizontally upstream until the corresponding Saginaw River profiles are intersected. The floodway and flood plain as delineated in this submittal are based on the calculated water-surface profiles of the Saginaw River. In the final Flood Insurance Study, the floodway will be based on the Saginaw River water-surface profile; the flood plain will reflect the influence of Saginaw Bay.

Discussion

1. Water-surface profiles on either side of Middle Ground Island were determined by performing island flow calculations. Since the velocity heads in the west branch and main channel at Middle Ground Island differed by approximately 0.4 ft. for the 100-year flood, we chose to balance the energy gradient elevations at the section immediately upstream of Middle Ground Island (SECNO = 8.099). It was found that by balancing section

the CWSEL and EG are assumed for balanced flow.

8.099 using energy gradient elevations, instead of balancing the water elevations, the water-surface elevations at the next upstream section (SECNO = 8.241) would be the same whether computing the water-surface profile through the main channel or the west branch.

2. For the 100-year flood, it was found that the discharges passing around the east side of Skull Island were so minor (less than 1 percent of the total flow) that the floodway could be relocated to the west side of the island where it would affect only a part of the James Clements Municipal Airport.

not clear

3. The floodway between sections 10.993 and 11.803 was encroached because of many buildings along the left bank of the river. It was found that encroaching in this manner increased the water-surface elevation by less than 0.1 ft. This situation differed from what occurred at section 8.241 where it was found that an encroachment at the building edges would increase the water-surface elevations at upstream sections by more than 0.1 ft.

4. The water-surface elevation of the storage area adjacent to Dutch Creek was assumed to be the same as the water-surface elevation at the mouth of Dutch Creek. This assumption was considered valid because it was found that the tracks of the Grand Trunk Western Railroad are higher than the computed water-surface elevation of the Saginaw River and prevent significant flow in the left overbank. A similar assumption was made for the storage area adjacent to Cheboyganing Creek after comparing the elevation

of M-13 to the computed water-surface elevation of the Saginaw River. The water-surface elevations used for the storage areas adjacent to Dutch Creek and Cheboyganing Creek were approximately 584.88 ft. USGS and 586.05 ft. USGS, respectively.

5. Part of the right overbank of section 20.514 (Rust Avenue bridge) is low enough to allow overland flow. However, after studying a current USGS map, and noting the existing residential area, it was thought advisable to encroach the section at the building line. After encroaching the section in this manner, it was found that the overland flow in the right overbank was insignificant and could be neglected. The section was then encroached at the bank stations.

6. A computer run was made between sections 13.747 and 22.186 in which the encroachments were set at the river banks. After encroaching the floodway in this manner, it was determined that the water-surface elevations increased by less than 0.1 ft.

Cross Section	SECNO	Location
AO	16.776	d/s face of Sixth Avenue bridge
AP	17.282	2645' u/s from u/s face of Sixth Avenue bridge
AQ	17.758	175' d/s from d/s face of C&O Railroad bridge
AR	17.791	d/s face of C&O Railroad bridge
AS	18.134	140' d/s from d/s face of I-675 bridge
AT	18.161	d/s face of I-675 bridge
AU	18.268	d/s face of Johnson Street bridge
AV	18.335	327' u/s from u/s face of Johnson Street bridge
AW	18.431	d/s face of Genesee Avenue bridge
AX	18.598	820' u/s from u/s face of Genesee Avenue bridge
AY	18.871	360' d/s from d/s face of Penn Central Railroad bridge #2
AZ	18.939	d/s face of Penn Central Railroad bridge #2
BA	19.432	165' d/s from d/s face of Holland Street bridge
BB	19.463	d/s face of Holland Street bridge
BC	20.116	d/s face of Court Street bridge
BD	20.287	840' u/s from u/s face of Court Street bridge
BE	20.514	d/s face of Rust Road bridge
BF	21.059	180' d/s from d/s face of Center Street bridge
BG	21.093	d/s face of Center Street bridge
BH	21.722	3240' u/s from u/s face of Center Street bridge
BI	22.186	Intersection of Tittabawassee River and Saginaw River

Cross Section	SECNO	Location
R	5.326	d/s face of Veterans Memorial bridge
S	5.905	2990' u/s from u/s face of Veterans Memorial bridge
T	6.222	North end of Middle Ground Island
U	6.520	d/s face of Lafayette Bridge
V	7.016	2578' u/s from u/s face of Lafayette Bridge
W	7.567	5488' u/s from u/s face of Lafayette Bridge
X	8.099	South end of Middle Ground Island and North end of Skull Island
Y	8.241	750' u/s from Middle Ground Island
Z	9.079	5170' u/s from Middle Ground Island
AA	9.584	4260' d/s from Cheboyganing Creek
AB	10.240	800' d/s from Cheboyganing Creek
AC	10.993	350' North from Bay County-Saginaw County line
AD	11.802	3920' South from Bay County-Saginaw County line
AE	12.569	4050' u/s from Section AD
AF	13.249	6115' d/s from d/s face of Zilwaukee Bridge (I-75 Bridge)
AG	13.747	3485' d/s from d/s face of Zilwaukee Bridge
AH	14.385	115' d/s from d/s face of Zilwaukee Bridge
AI	14.407	d/s face of Zilwaukee Bridge
AJ	15.156	3885' u/s from u/s face of Zilwaukee Bridge
AK	15.612	6295' u/s from u/s face of Zilwaukee Bridge
AL	16.169	9235' u/s from u/s face of Zilwaukee Bridge
AM	16.500	1455' d/s from d/s face of Sixth Avenue bridge
AN	16.758	95' d/s from d/s face of Sixth Avenue bridge

Cross Section Locations

Job 5555-01 Township of Bangor
02 City of Bay City
18 City of Essexville
21 Township of Frankenlust
55 Township of Portsmouth
60 Township of Saginaw
74 City of Zilwaukee
75 Township of Zilwaukee

MSC 3-19-77

Saginaw River

Cross Section	SECNO	Location
A	0.023	120' u/s from the mouth of Saginaw River
B	0.335	1770' u/s from the mouth of Saginaw River
C	1.189	6280' u/s from the mouth of Saginaw River
D	1.761	9300' u/s from the mouth of Saginaw River
E	2.223	3090' d/s from d/s face of D&M Railroad bridge
F	2.576	1230' d/s from d/s face of D&M Railroad bridge
G	2.809	d/s face of D&M Railroad bridge
H	2.947	710' u/s from u/s face of D&M Railroad bridge
I	3.350	1323' d/s from d/s face of Belinda Street bridge
J	3.601	d/s face of Belinda Street bridge
K	3.646	163' u/s from u/s face of Belinda Street bridge
L	3.690	d/s face of Old Belinda Street bridge
M	4.366	1650' d/s from d/s face of Penn Central Railroad bridge #1
N	4.678	d/s face of Penn Central Railroad bridge #1
O	4.835	810' u/s from u/s face of Penn Central Railroad bridge #1
P	4.968	d/s face of Third Street bridge
Q	5.152	933' u/s from u/s face of Third Street bridge

APPENDIX A

JOB NAME: City of Saginaw	JOB NO. 5555	60	01
WATERCOURSE: Saginaw River	CULVERT LOCATION: Penn Central Railroad Bridge		
CULVERT DESCRIPTION: Multi-Plate Railroad Bridge With 7 Concrete Piers	BY MSC	DATE	

n= 0.028 Q_{10}= - TW_{10}= -

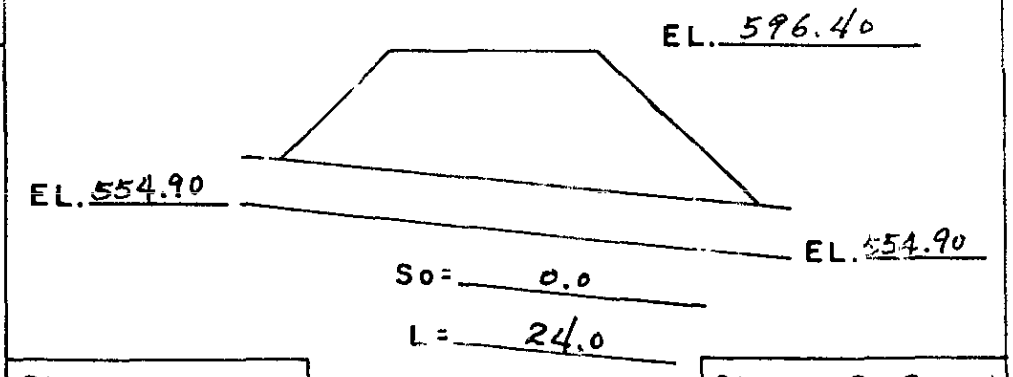
A= 10906.8 Q_{50}= - TW_{50}= -

R= 7.63 Q_{100}= - TW_{100}= -

Ke= 0.20 Q_{500}= 82000 TW_{500}= 38.53

D= 37.60

LSo= 0.0



Sta. 18.944 Sta 18.939

HEADWATER ANALYSIS

Q	INLET CONT. HW/D	INLET CONT. HW	OUTLET CONT. HW = H + ho − LSo: H	dc	(dc+D)/2	ho	HW	HEC-2 D+(1+Ke) V²/2g	HEC-2 HW	FINAL ~~HW~~ HGL	FINAL ~~HW~~ HGL ELEV.	Δ H HEC-2
82000	-	21.05	1.09	-	-	38.53	39.62	39.58	-	39.62	594.52	

CALCULATIONS AND COMMENTS

For Inlet Control:

$$HW = \frac{1}{C^2}\frac{V^2}{2g} + \frac{D}{2} = 0.043V^2 + \frac{D}{2}$$

(for C = 0.60)

For Outlet Control:

$$k_f = \frac{29.1 n^2 L}{R^{4/3}}$$

$$= 1.9414 n^2 L = 0.04$$

$$H = (1 + Ke + k_f)\frac{V^2}{2g}$$

$$= 1.04 \frac{V^2}{2g}$$

APPENDIX B

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HYDRAULIC STRUCTURAL DATA

VS #7

2.81 RIVER MILE

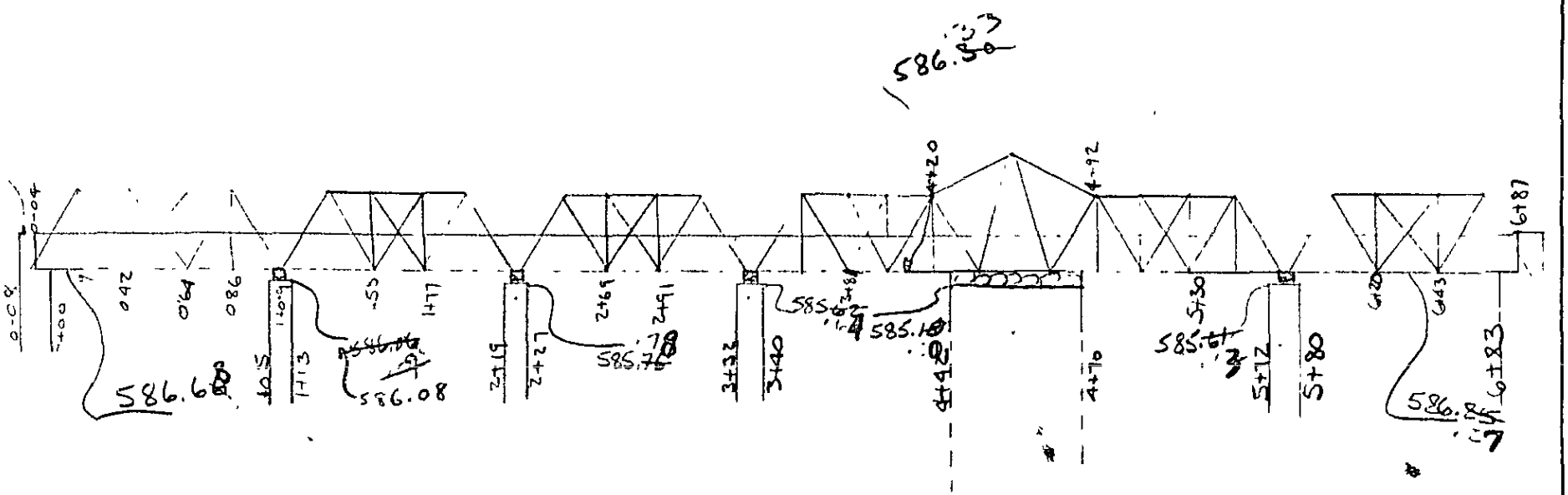
Code No. 5555-18-0

Job Name: ESSEXVILLE (SAGINAW RIVER)			By: JOE KAPELCZAK
Date: 6-7-76	Feature: RR. SWING BRIDGE		Water Course: SAGINAW R
Remarks: PHOTO 5 UP | 6 DOWN | 7 LEFT | 8 RIGHT |			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew: NONE

FIELD SKETCH

Profile View

Plan View



APPENDIX C

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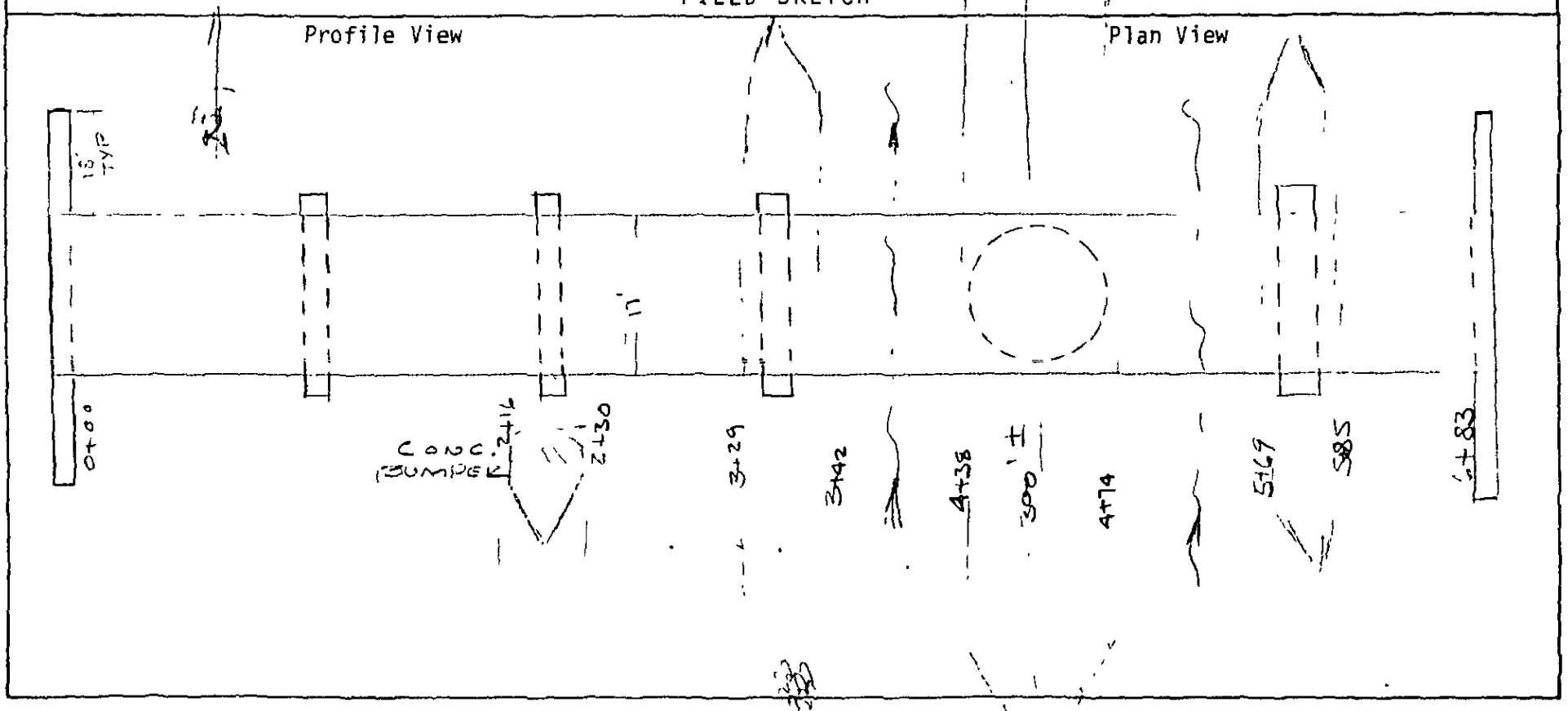
HYDRAULIC STRUCTURAL DATA

2.81 RM V S 7

Code No. 5555-18

Job Name:			By:
Date:	Feature: RR SWING BRIDGE		Water Course:
Remarks:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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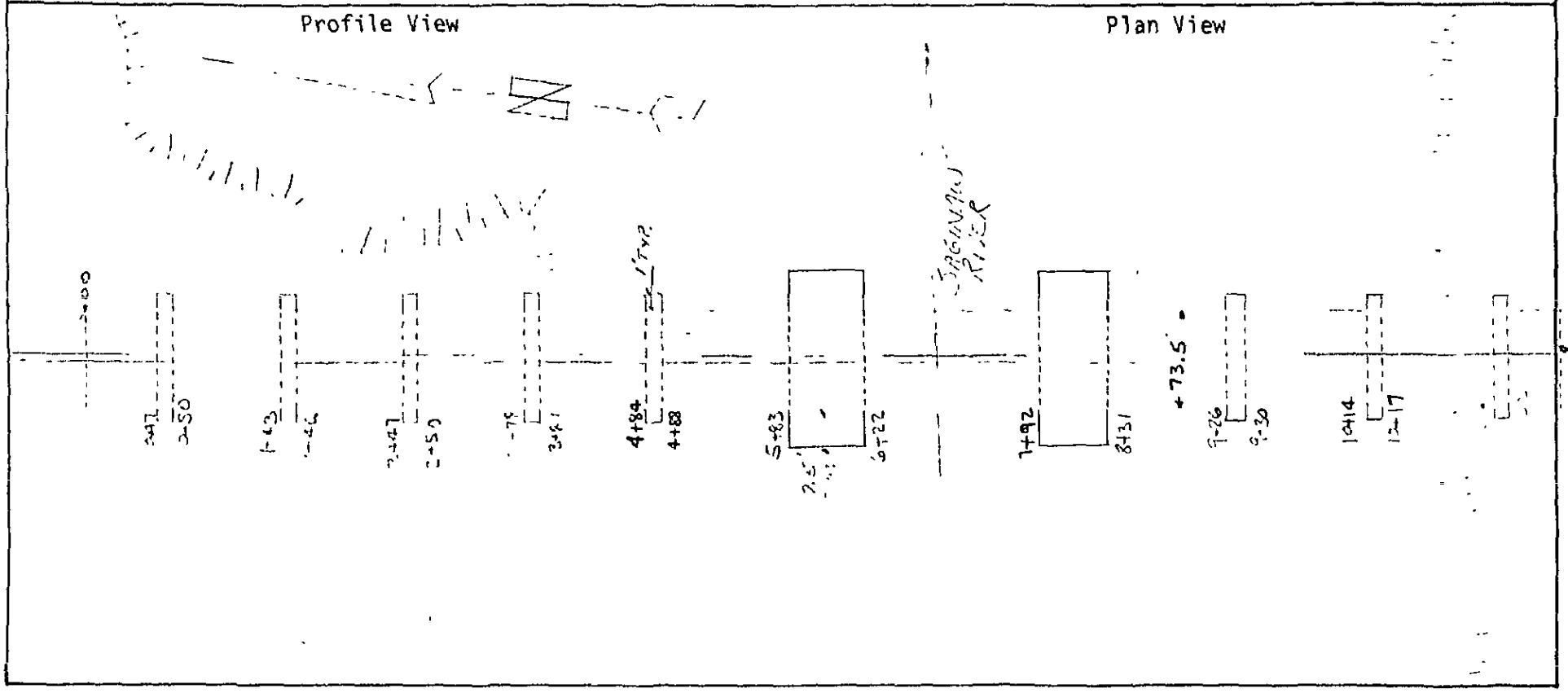
HYDRAULIC STRUCTURAL DATA

B 10

Code No. 5555-02[illegible] 10

Job Name: CITY OF BAY CITY			By: JOE KAPELCZAK
Date: 5-26-76	Feature: NEW BRIDGE		Water Course: SAGINAW RIVER
Remarks: DRAW BRIDGE BELINDA ST.			
PICTURES: SEE STH. 3 of 5			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew: N.A.

FIELD SKETCH



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HYDRAULIC STRUCTURAL DATA

BS 10

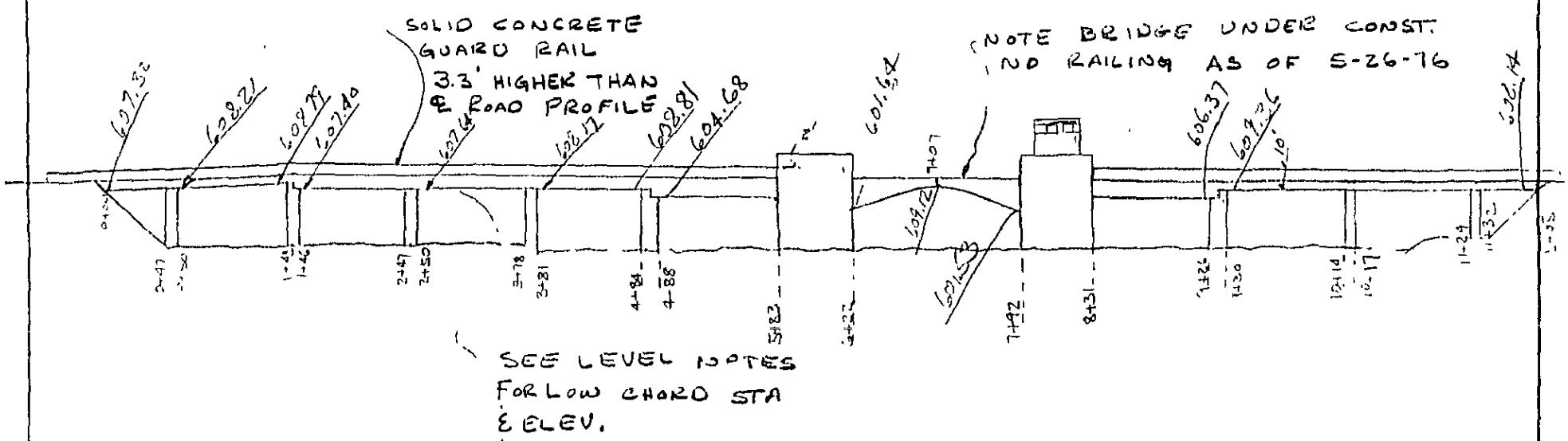
Code No. _____

Job Name:		By:	
Date:	Feature: NEW BRIDGE	Water Course:	
Remarks: DRAW BRIDGE BEHINDA [illegible]			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View ~~Plan View~~

UPSTREAM FACE



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HYDRAULIC STRUCTURAL DATA

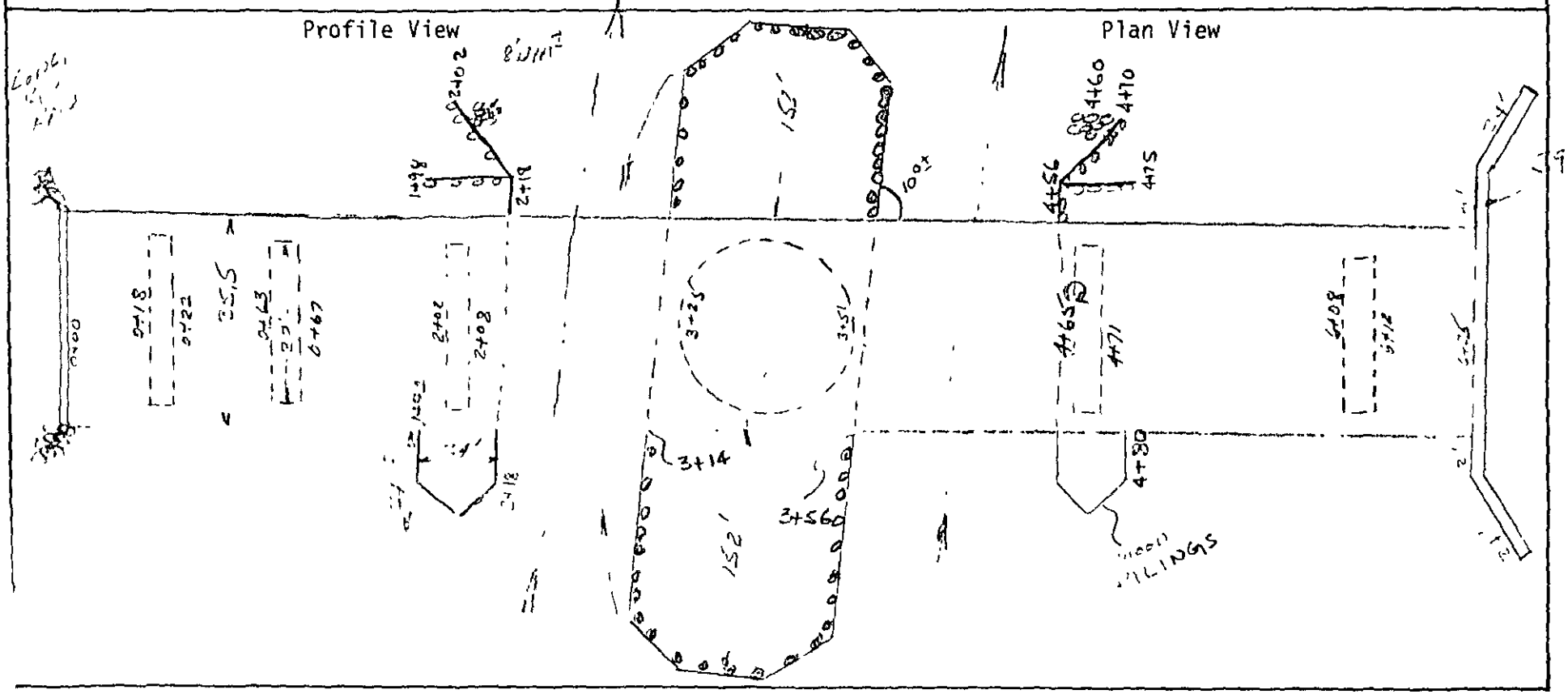
BS#12 Code No. 5555-02-12

RIVER MI. 3.69

Job Name: CITY OF BAY CITY FIS (SAGINAW RIVER)		By: JOE KAPELCZAK
Date: 5-28-76	Feature: STEEL SWING BRIDGE	Water Course: SAGINAW R.
Remarks: OLD BELINDA ST. BRIDGE		
Photo Log Roll 4 9 10 11 12 USF & DSF IN OTHER PHOTOS		

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 581.9	Length:	Width of Deck:	Skew: NA

FIELD SKETCH



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HYDRAULIC STRUCTURAL DATA

BS - 12

3.69 mi

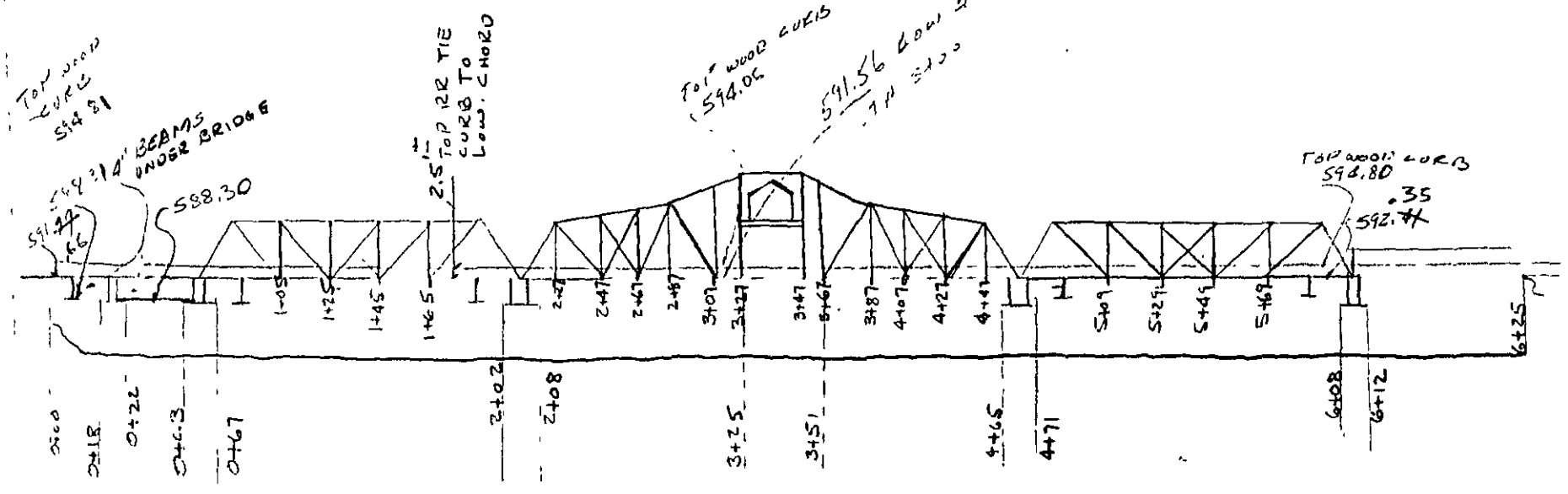
Code No. [illegible]

Job Name:			By:
Date:	Feature: STEEL SWING [illegible]		Water Course:
Remarks: OLD BELINDA [illegible] BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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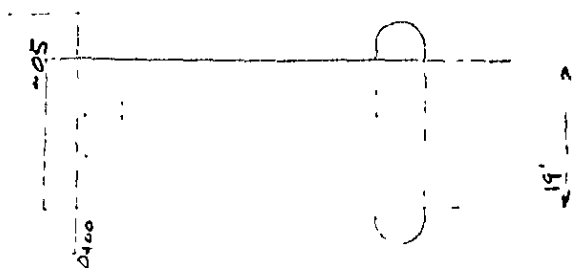
HYDRAULIC STRUCTURAL DATA

Code No. B-11/4

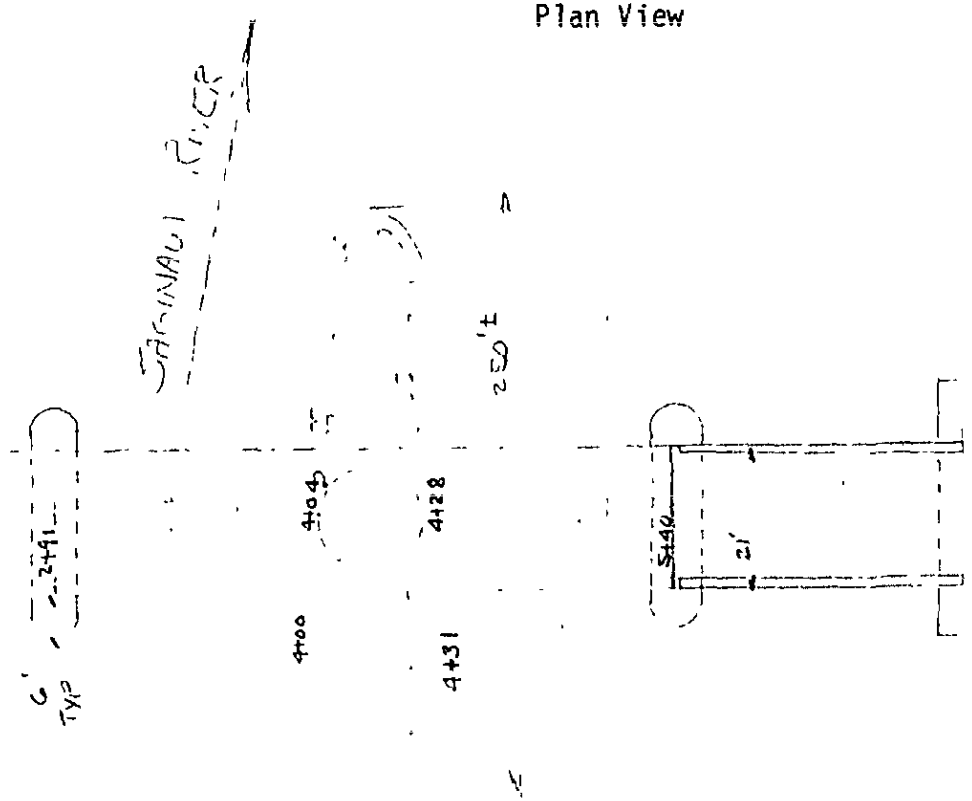
Job Name: CITY [illegible] CITY			By: JOE KAPELCZAK
Date: 5-25-76	Feature: RAILROAD BRIDGE		Water Course: SAGINAW RIVER
Remarks:			
[illegible]			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



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HYDRAULIC STRUCTURAL DATA

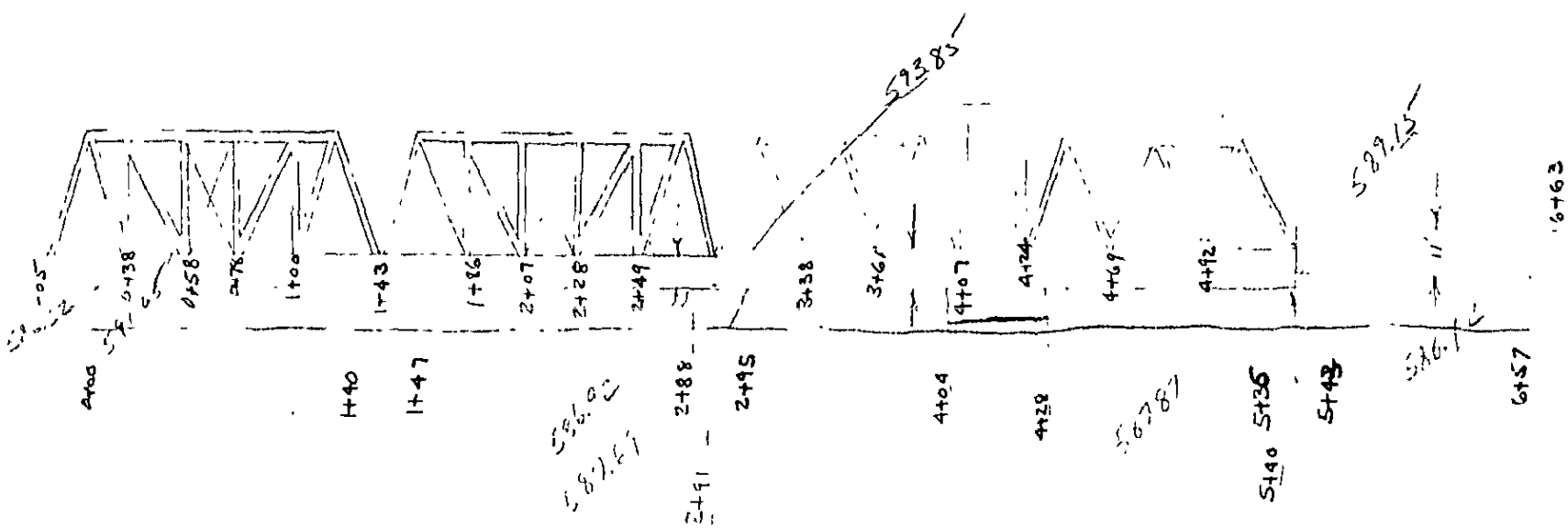
Code No. BS #14

Job Name: LAY CITY		By:	
Date:	Feature: RAILROAD [illegible]	Water Course: [illegible]	
Remarks:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

~~Plan View~~



2 01 1

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HYDRAULIC STRUCTURAL DATA

Code No. 5555-02 P-11 16

Job Name: CITY OF BAY CITY (3RD ST. BRIDGE)		By: JOE KAPELCZAK
Date: 5-21-76	Feature: MIDLAND RD BRIDGE	Water Course: SAGINAW RIVER
Remarks:		

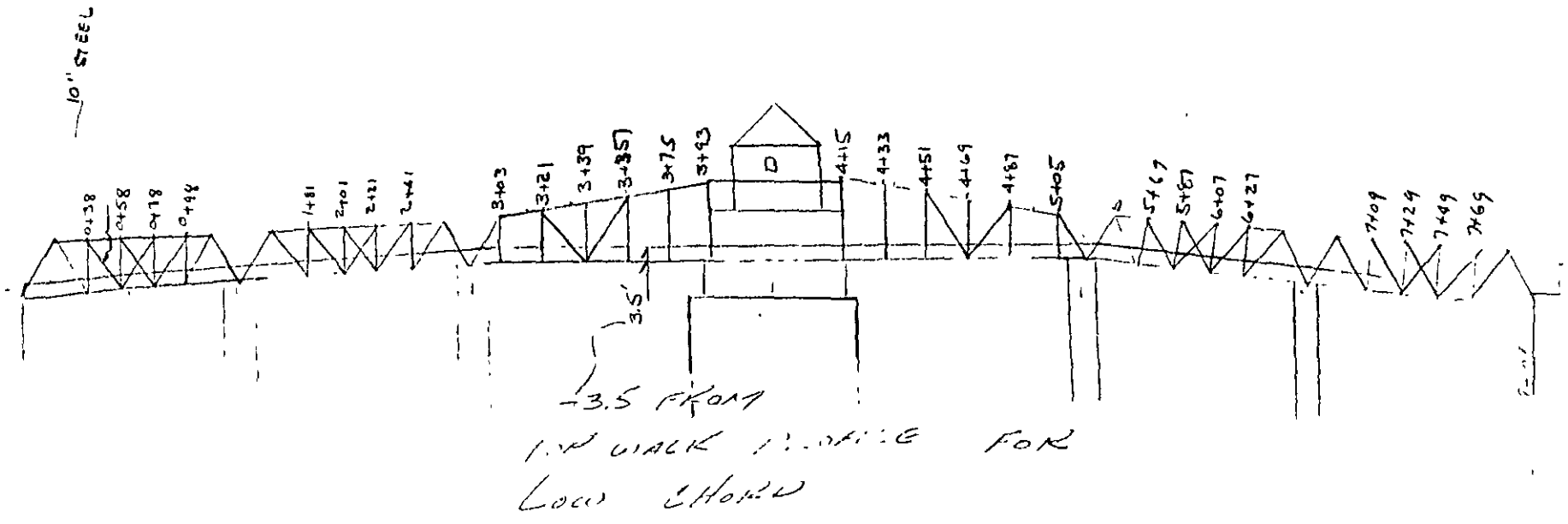
PICTURES: 2-31 U/S, 2-32 D/S, 2-33 RT., 2-34 LT.

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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HYDRAULIC STRUCTURAL DATA

BS#16

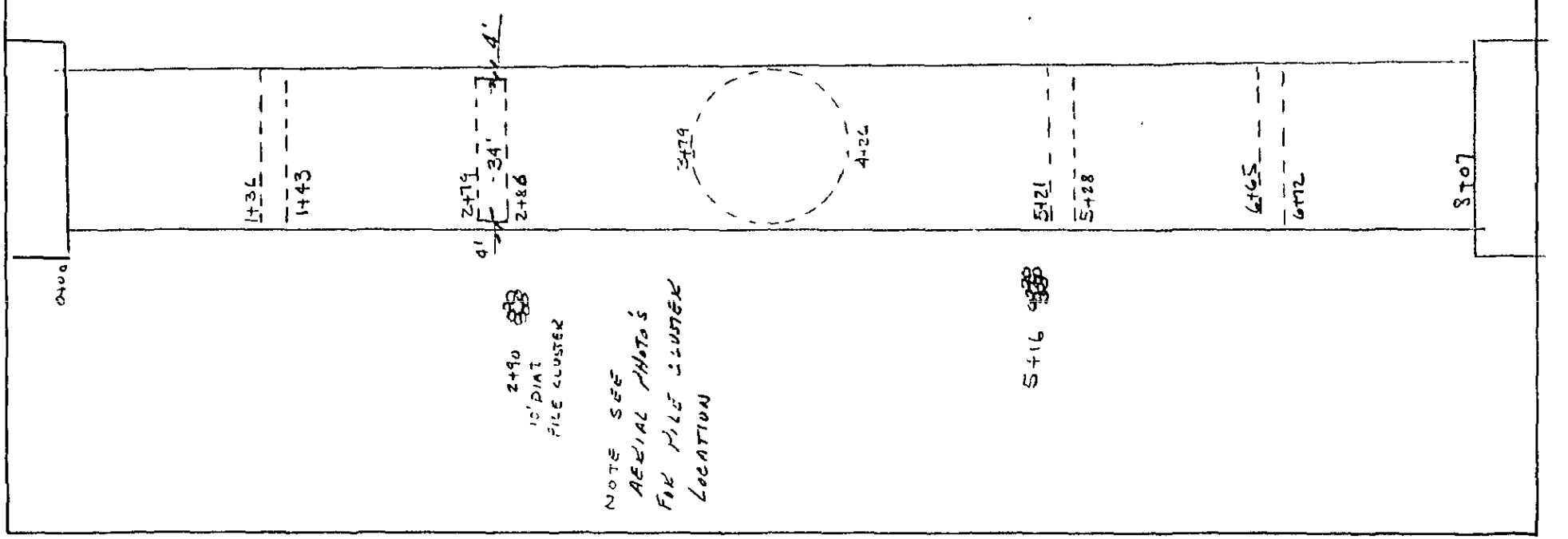
Code No. 5555 [illegible]

Job Name:		By:	
Date:	Feature: 3RD ST. BRIDGE	Water Course:	
Remarks:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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HYDRAULIC STRUCTURAL DATA

VS#21

PAGE 1

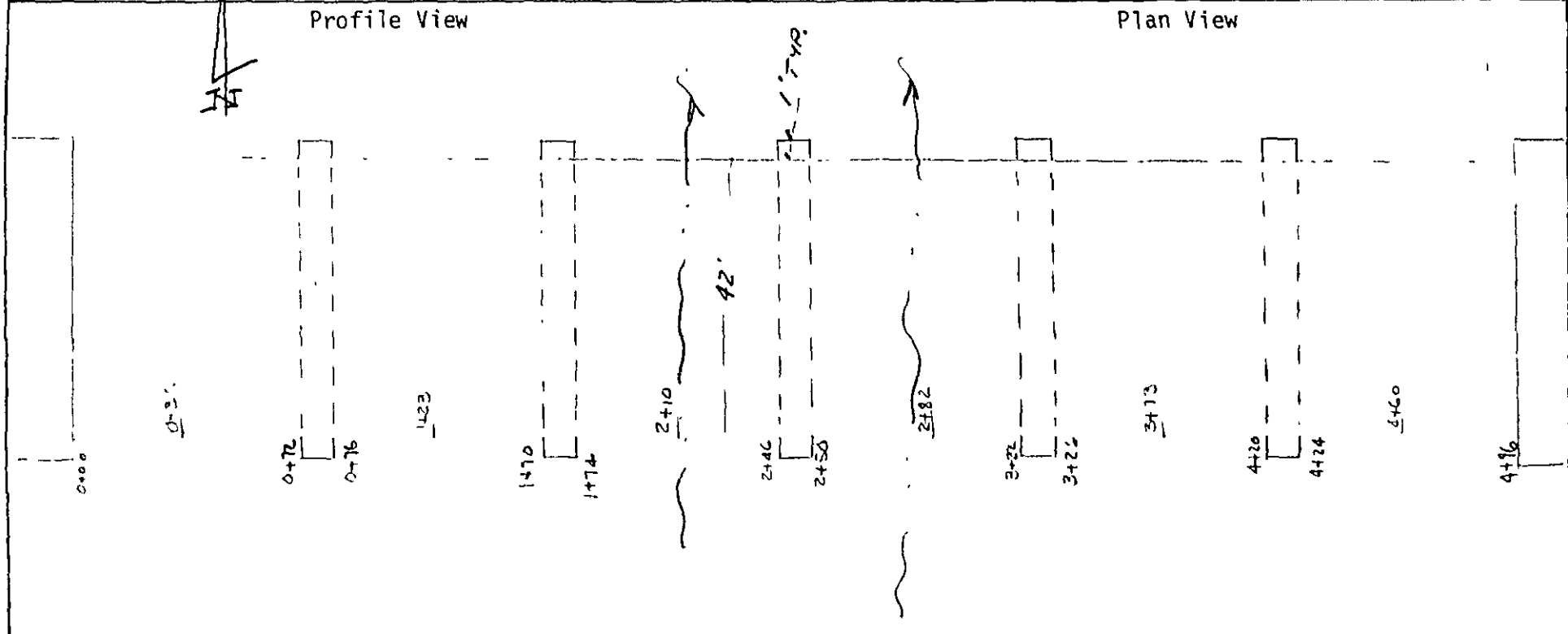
Code No. 5555

Job Name: SAGINAW RIVER		By: JOE KAPELCZAK
Date: 5-19-76	Feature: CONCRETE	Water Course: SAGINAW RIVER
Remarks: LAFAYETTE BRIDGE OVER LEFT CHANNEL		

2-7 U/S M.CH	2-8 D/S M.CH.	2-9 RT. M.BRDG	2-10 LT. M.BRDG.		
2-1 [illegible] USF [illegible] BRDG	2-2 USF E BRDG	2-3 D/S W CH.	2-4 D/S W CH	2-5 RT W BRDG	2-6 LT W. BRDG.

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 582.2	Length: 496	Width of Deck: 42	Skew: NONE

FIELD SKETCH



SHT 4 OF 7

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HYDRAULIC STRUCTURAL DATA

VS #21

PAGE #[illegible] of 4

Code No. _____

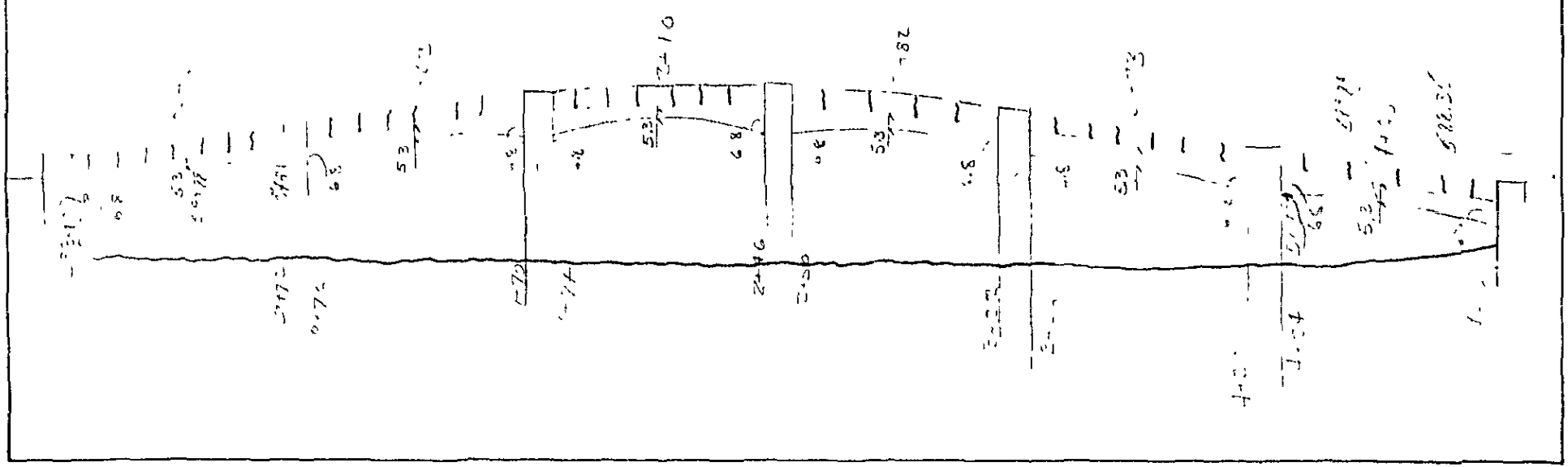
Job Name: SAGINAW RIVER		By: JOE KIL LCZAK
Date: 5-[illegible]	Feature: SALZBURG-LAFAYETTE BLDG	Water Course: SAGINAW RIVER
Remarks: LAFAYETTE BRIDGE OVER LIFT CHANNEL		

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



SHT 5 of 7

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HYDRAULIC STRUCTURAL DATA

VS#21

PAGE [illegible]

Code No. _____

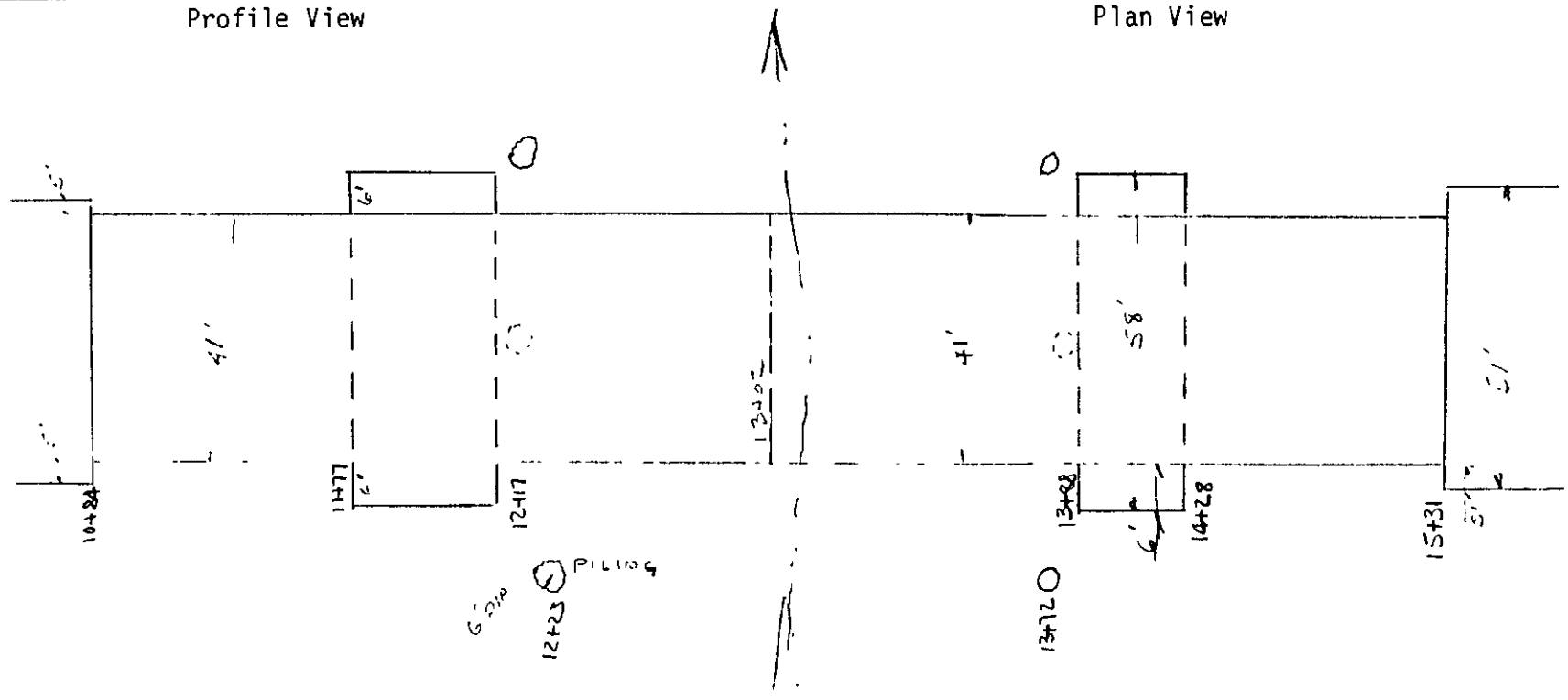
b Name:		By: JOE KAPELCZAK
te: 5-19-76	Feature: DRAW BRIDGE	Water Course: SAGINAW RI
emarks: LAFAYETTE DRAW BRIDGE OVER MAIN CHANNEL		

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length: 447	Width of Deck: 41	Skew: NONE

FIELD SKETCH

Profile View

Plan View



SHT 6 OF 7

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HYDRAULIC STRUCTURAL DATA

VS#21

PAGE # [illegible]

Code No. _____

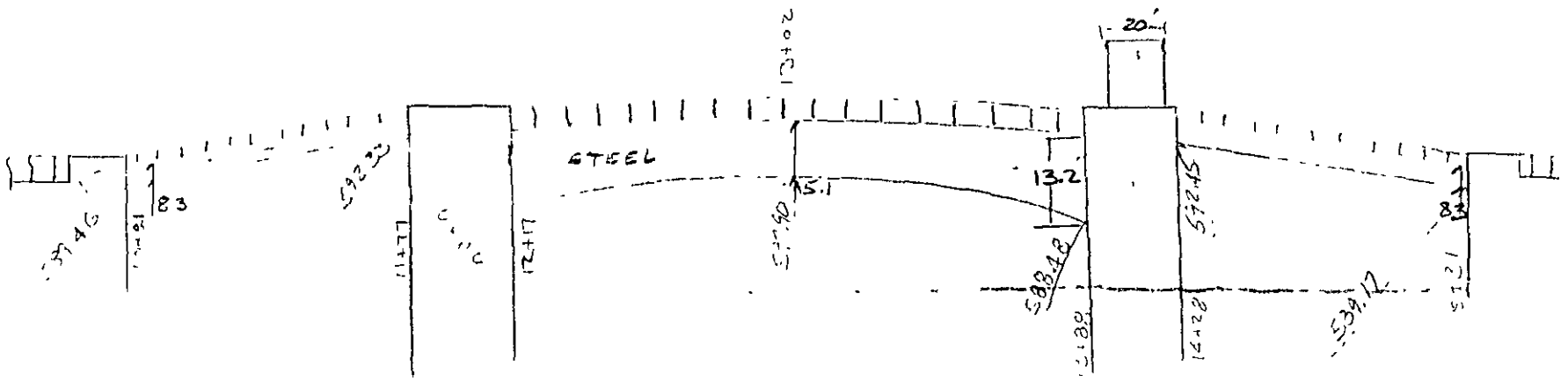
Name:		By:
te:	Feature:	Water Course:
emarks: LAFAYETTE DRAW BRIDGE OVER MAIN TUNNEL		

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



SHT 7 OF 7

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HYDRAULIC STRUCTURAL DATA

Code No. 5555-74-V

Job Name: CITY OF ZILWAKEE			By: JOE KAPELCZAK
Date: 6-14-76	Feature: I-75 ZILWAKEE BRIDGE		Water Course: SAGINAW RIVER
Remarks: RIVER MILE 14.41			
PICTURES:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

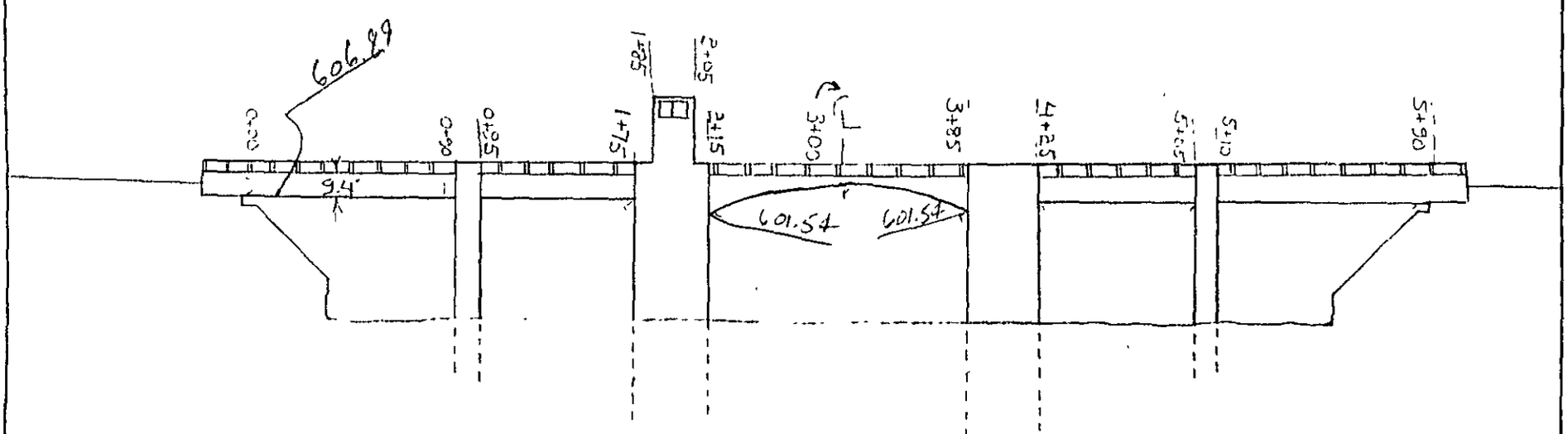
FIELD SKETCH

Profile View

UPSTREAM FACE

~~Plan View~~

LOW CHORD
FLOOD FACTOR
592.5



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HYDRAULIC STRUCTURAL DATA

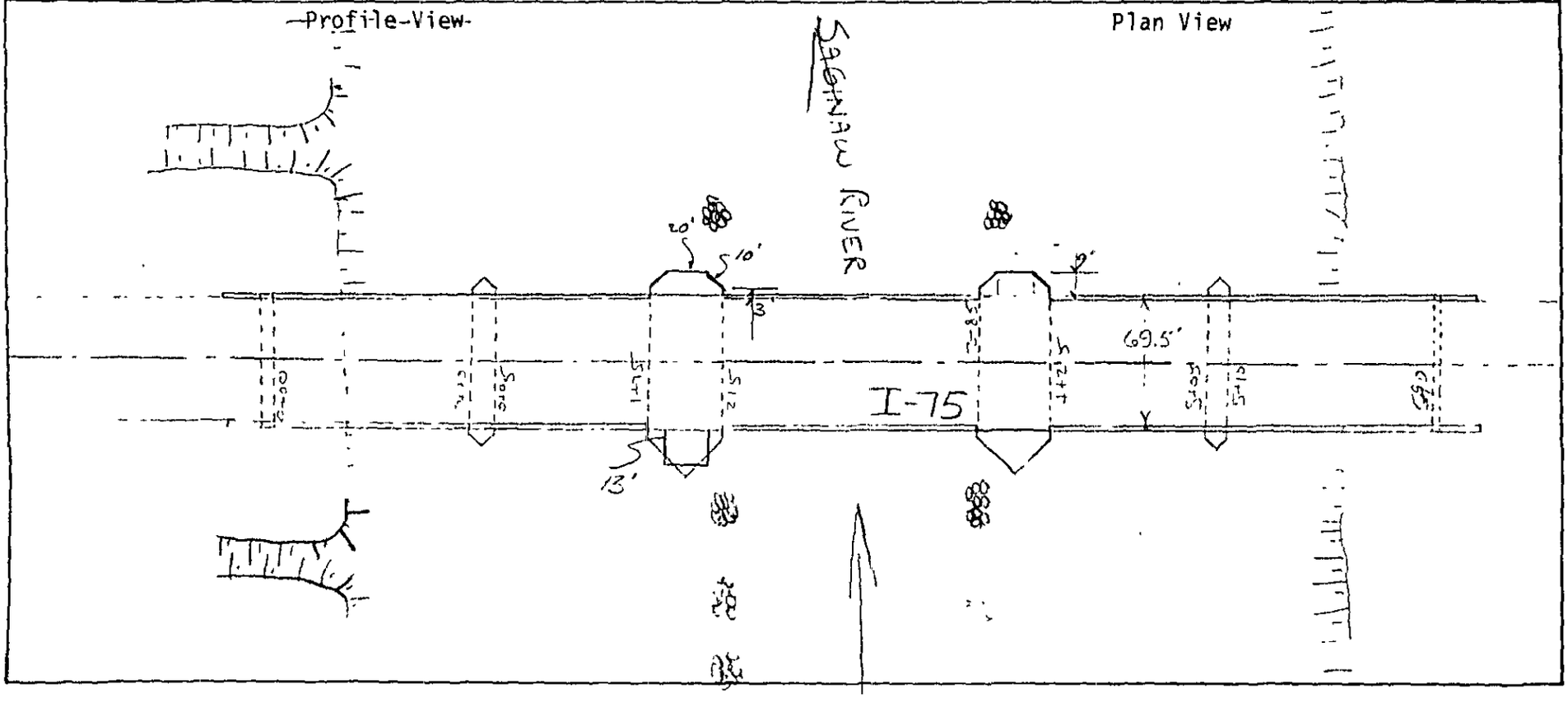
Code No. 5555-11-85

Job Name: CITY OF ZILWAKEE		By: JOE KAPELCZAK
Date: 6-14-76	Feature: I-75 ZILWAKEE BRIDGE	Water Course: SAGINAW RIVER
Remarks: RIVER MILE 14.41		

PHOTO U | D | R | L | USF | DSF

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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HYDRAULIC STRUCTURAL DATA

B.S. # 42

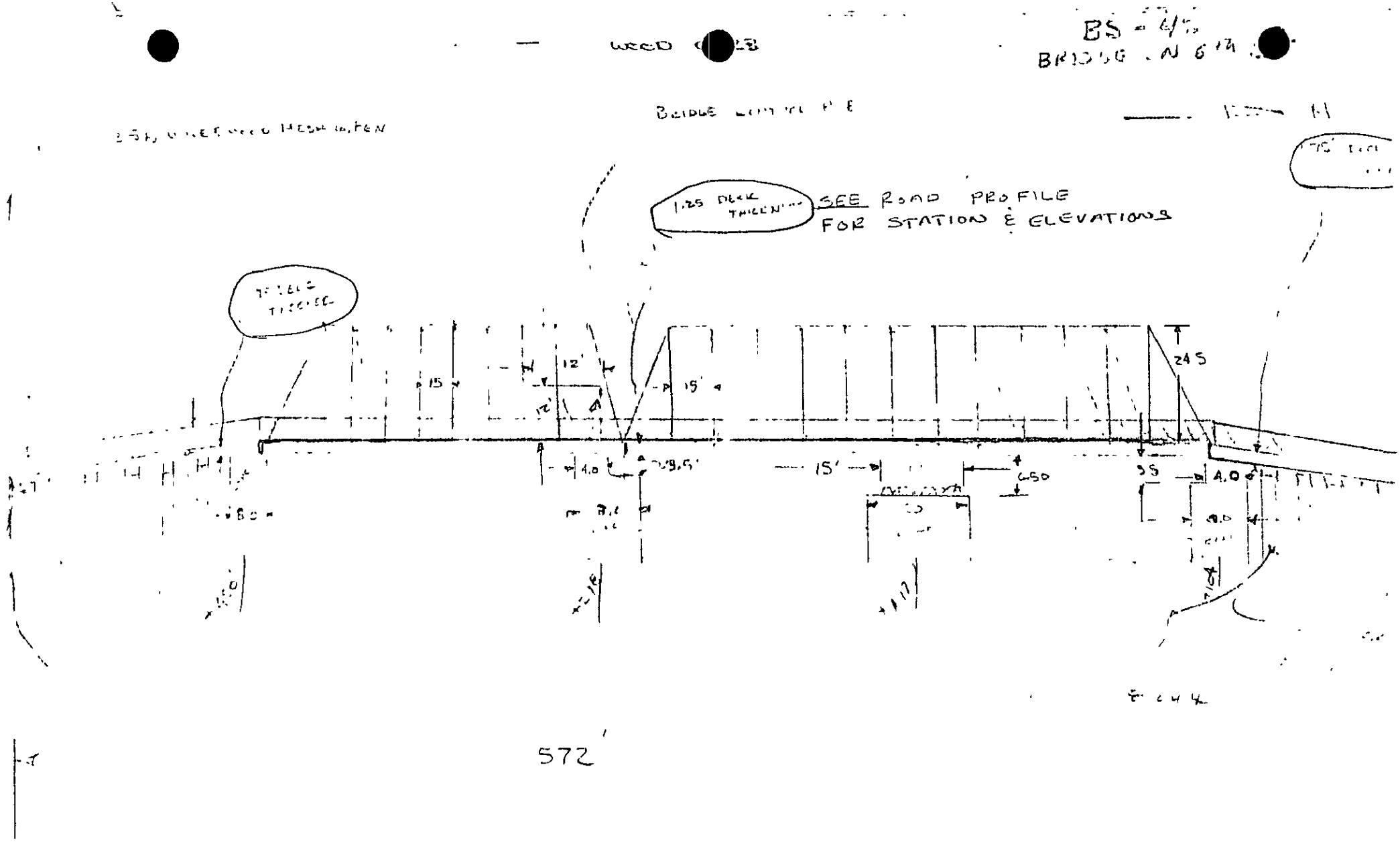
Code No. 5555 - 600

Job Name: Saginaw Twp			By: R. Moses
Date: 6-21-76	Feature: Steel Swing Bridge		Water Course: Saginaw River
Remarks: Bridge on 6th St			
Pictures: Roll 7-14 D/S Face; 15 D/S; 16 L; 17 R; 18 U/S; 19 U/S Face			
Width of Piers: Conc. 8.0' Wood 1.0'	Pier Shape: [ ]	No. of Piers: 3 conc 11 wood	Area: —
Water Elevation:	Length: 572'	Width of Deck: 27	Skew: —

FIELD SKETCH

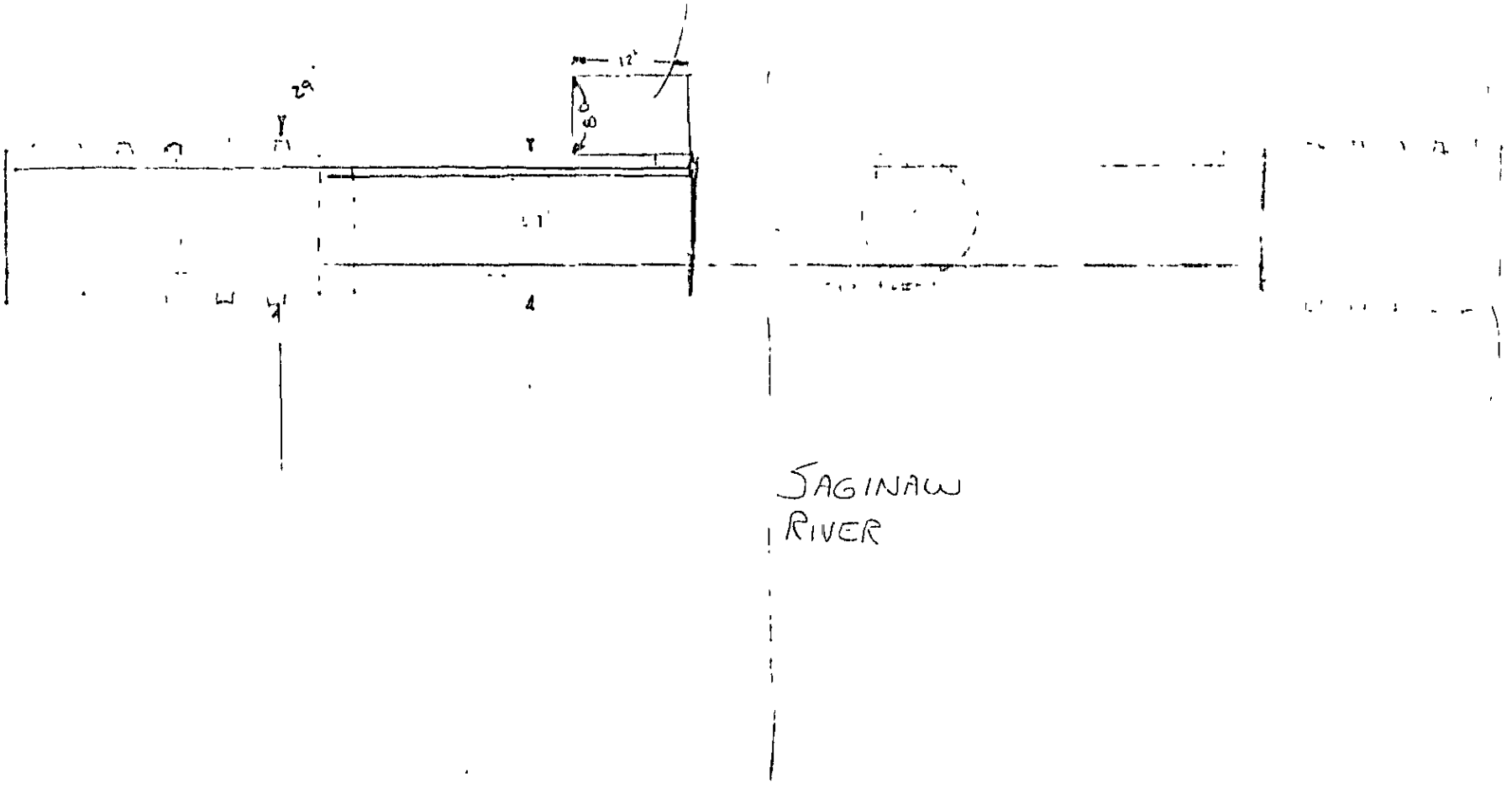
Profile View

Plan View



WOOD
BS - 4/5
BRIDGE
1.25 DECK THICKNESS
SEE ROAD PROFILE
FOR STATION & ELEVATIONS
15
12'
15'
24.5
4.0
15'
6.50
3.5
4.0
572

ES #42
BRIDGE ON 6th ST



PLAN VIEW

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HYDRAULIC STRUCTURAL DATA

Code No. 5555-[illegible]

Job Name: SAGINAW TWP.		By: R. MOSES
Date: 6-22-76	Feature: C&O R.R. TILT BRIDGE	Water Course: SAGINAW RIVER
Remarks: RIVER MILE 1779		

PICTURES: ROLL 7 – 28 D/S FACE; 29 D/S; 30 LEFT; 31 RIGHT; 32 U/S; 33 U/S FACE

Width of Piers: SEE DRAWING	Pier Shape: 17	No. of Piers: 6	Area:
Water Elevation:	Length: 730	Width of Deck: SEE DRAWING	Skew:

FIELD SKETCH

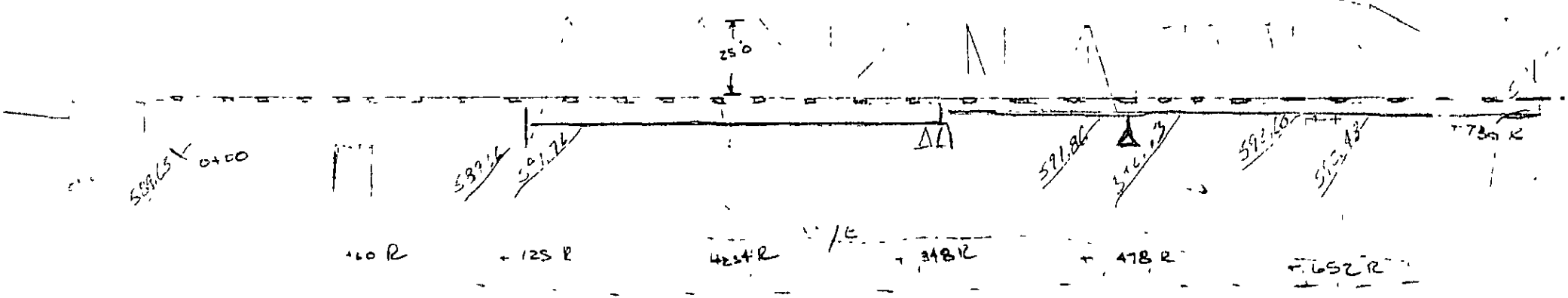
Profile View

Plan View

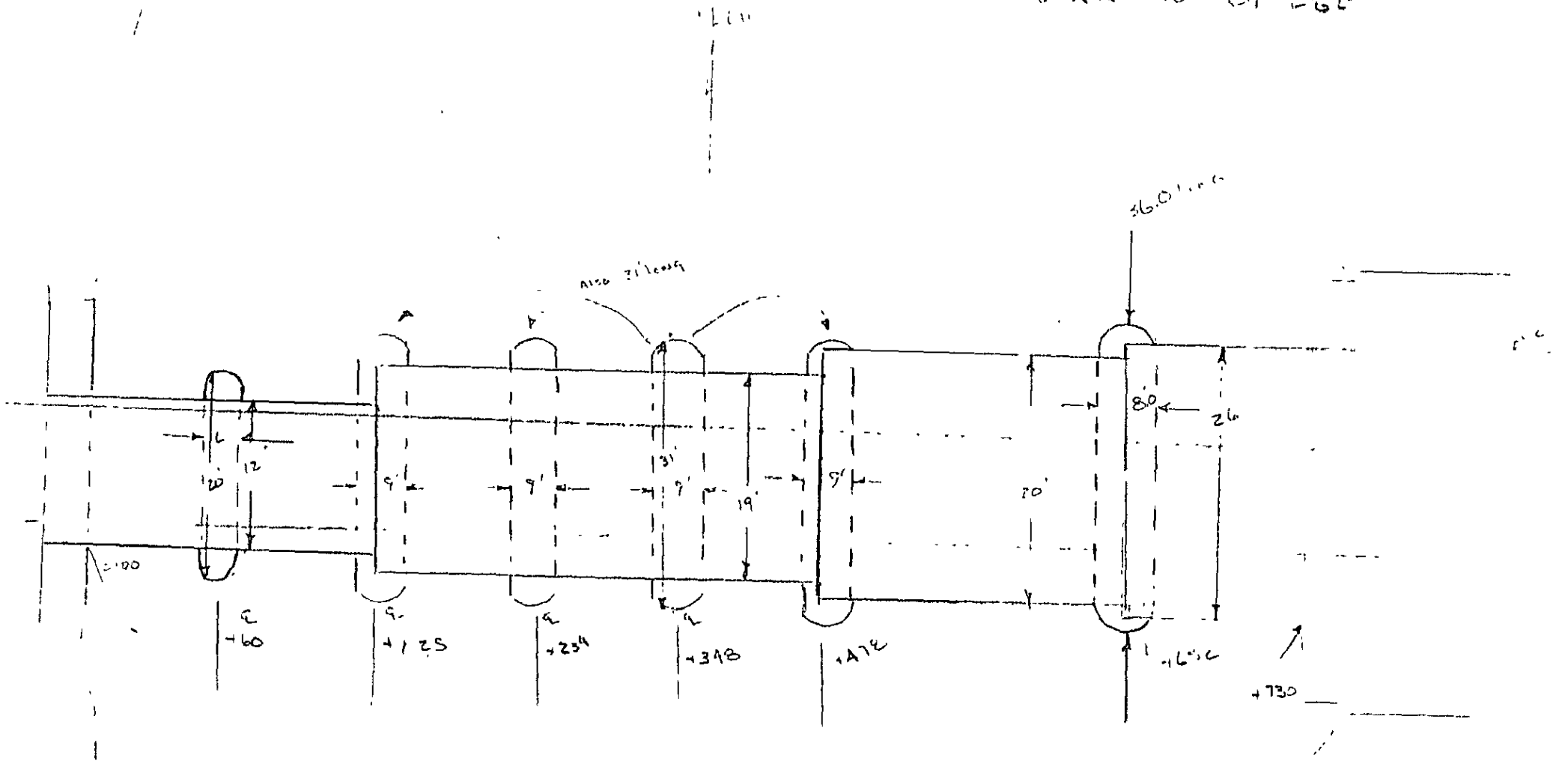
OVER

UPSTREAM FACE

BS #45
C&O RR TILT 1 MIN.



BS #45



36.0' long
Also 31' long
8.0'
26
20'
12
9'
9'
31'
9'
19'
9'
20'
+60
+125
+234
+348
+472
+730

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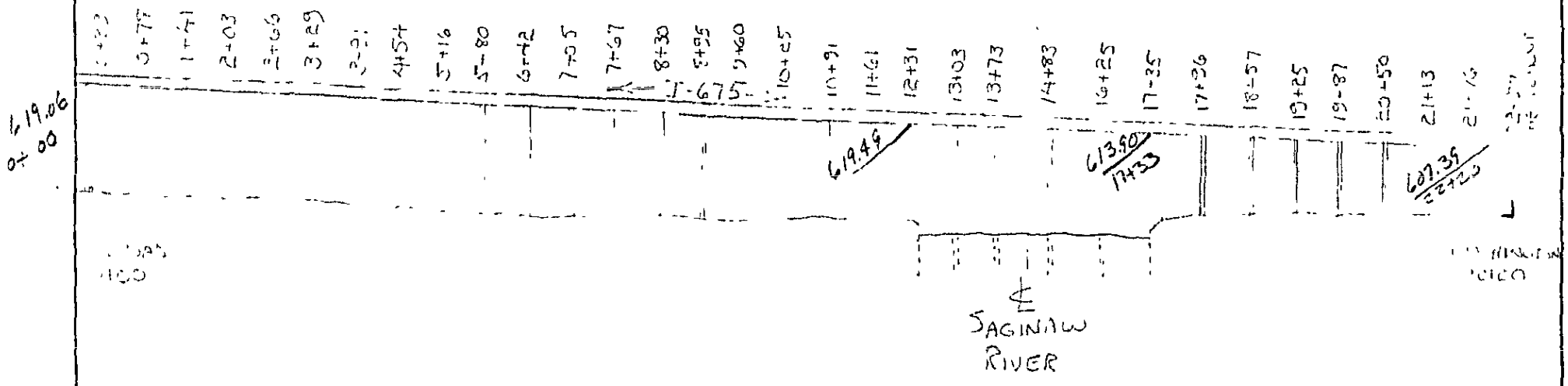
HYDRAULIC STRUCTURAL DATA

Code No. 5555-00-B 47

Job Name: SAGINAW TWP			By: R. MOSES
Date: 6-23-76	Feature: I-675 BRIDGE		Water Course: SAGINAW RIVER
Remarks: RIVER MILE 12.17			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 581.6	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View ~~Plan View~~



UPSTREAM FACE

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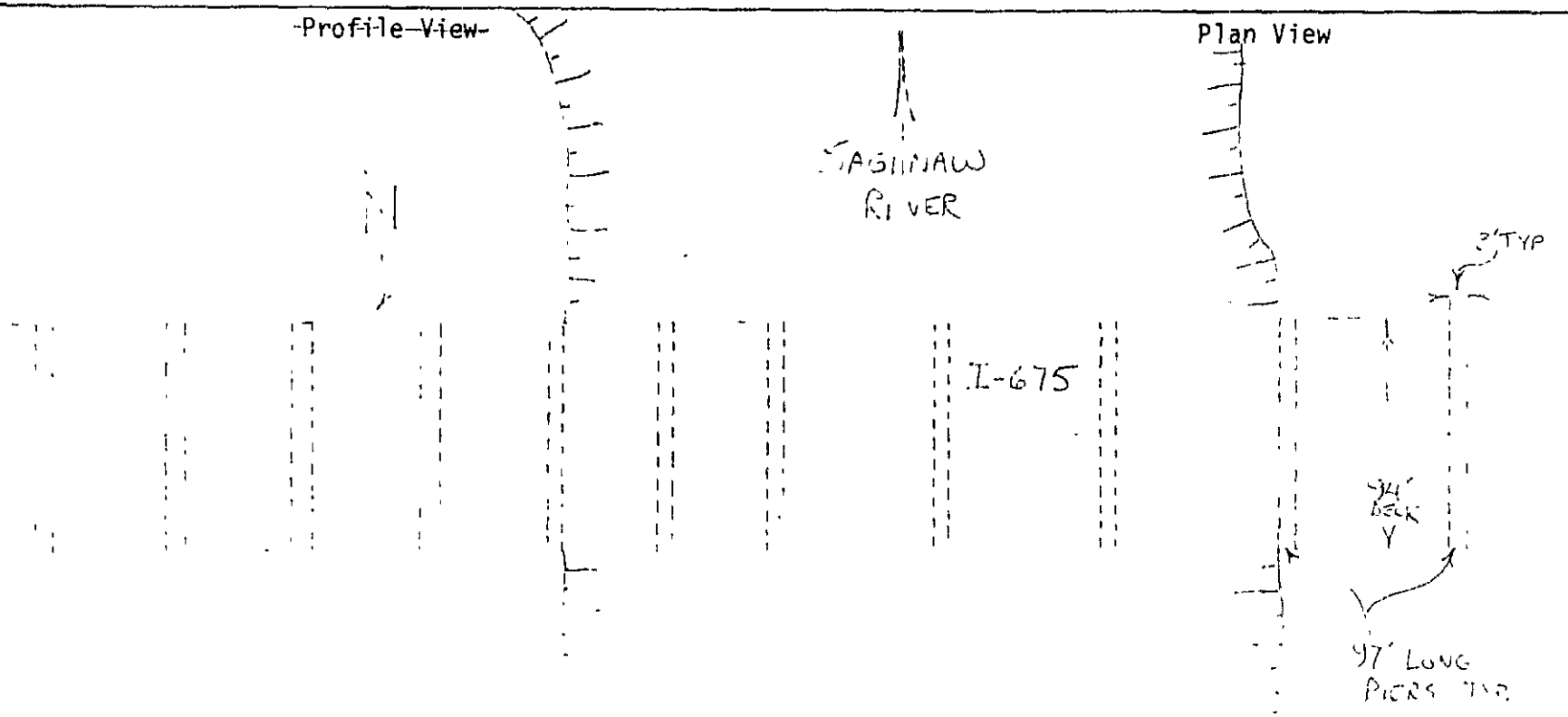
HYDRAULIC STRUCTURAL DATA

US 47

Code No. [illegible]

Job Name:			By:
Date:	Feature: I - 675 BRIDGE		Water Course:
Remarks: RIVER MILE 18.17			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

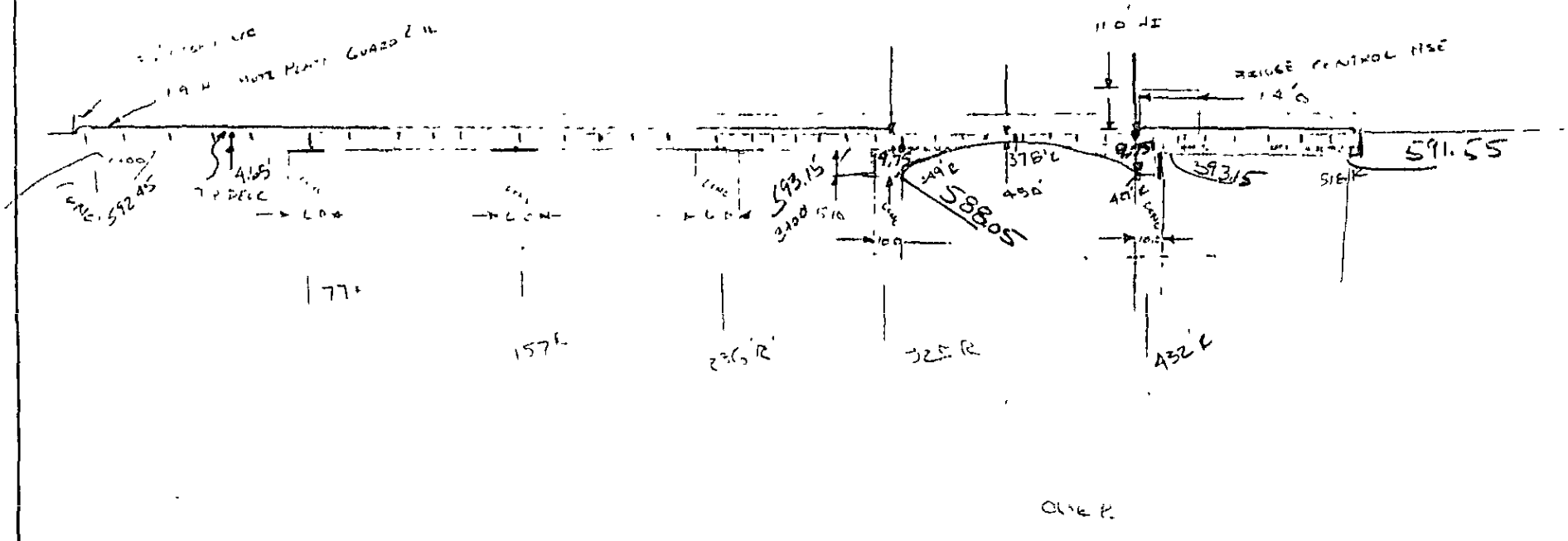
 Code No. 5555-[illegible]-BS 48

Job Name: SAGINAW TWP		By: R. MOSES
Date: 6-24-76	Feature: STEEL MULTI-PLATE LIFT BRIDGE	Water Course: SAGINAW RIVER
Remarks: BRIDGE IS ON JOHNSON ST & NIAGARA ST		
PICTURES:		

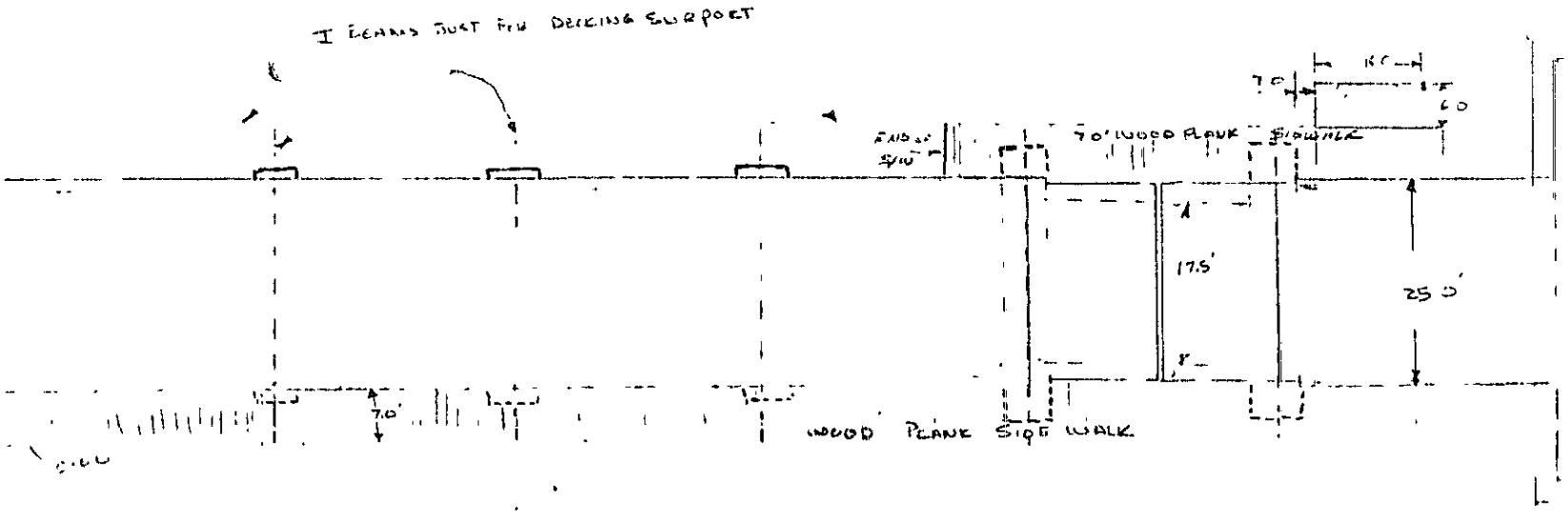
Width of Piers:	Pier Shape:	No. of Piers: 5	Area: —
Water Elevation: 581.8	Length: 518'	Width of Deck: 25'	Skew: —

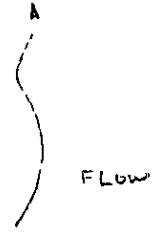
FIELD SKETCH

Profile View — UPSTREAM FACE — Plan View



BS #48
BRIDGE ON JOHNSON
AND NAGLE RD.





Johnson & Anderson, Inc.
Consulting Engineers
P.O. Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

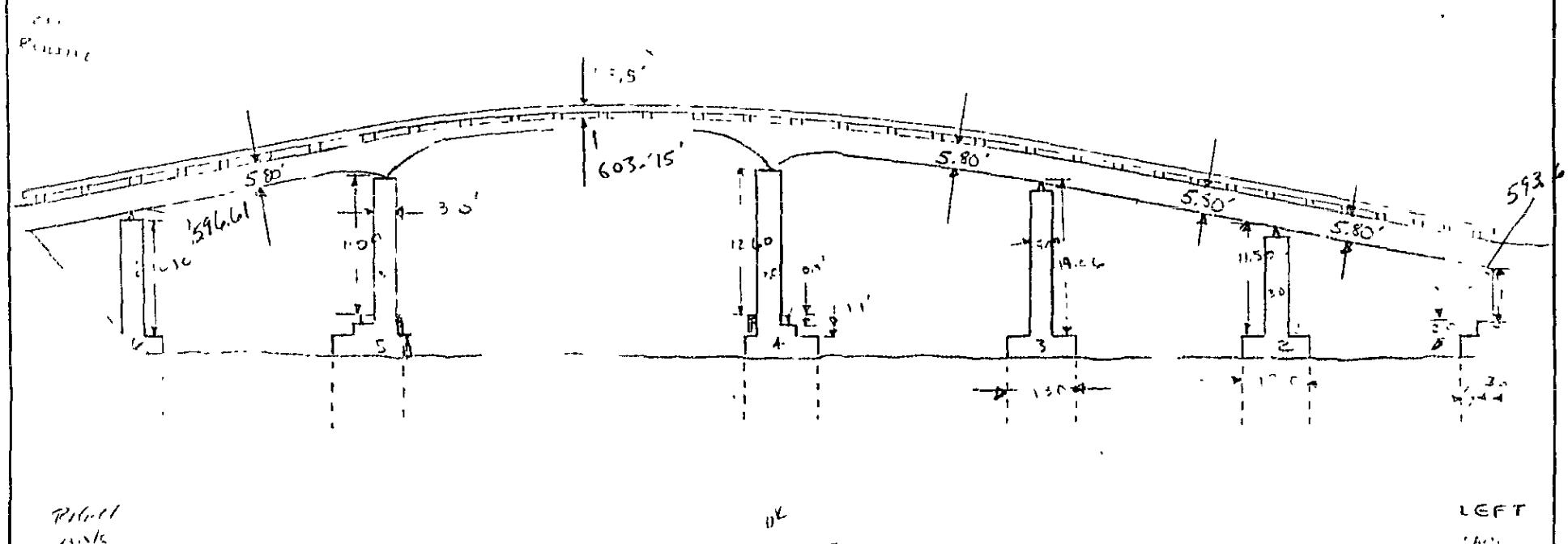
Code No. 5555-40-85 #50

Job Name: SAGINAW TWP		By: R. MOSES
Date:	Feature: GENESEE BRIDGE	Water Course: SAGINAW RIVER
Remarks: RIVER MILE 18.44		
Roll #9.		
PICTURES: DSF | USF | D/S | U/S | L | R		

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View ~~Plan View~~



[illegible] FACE

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

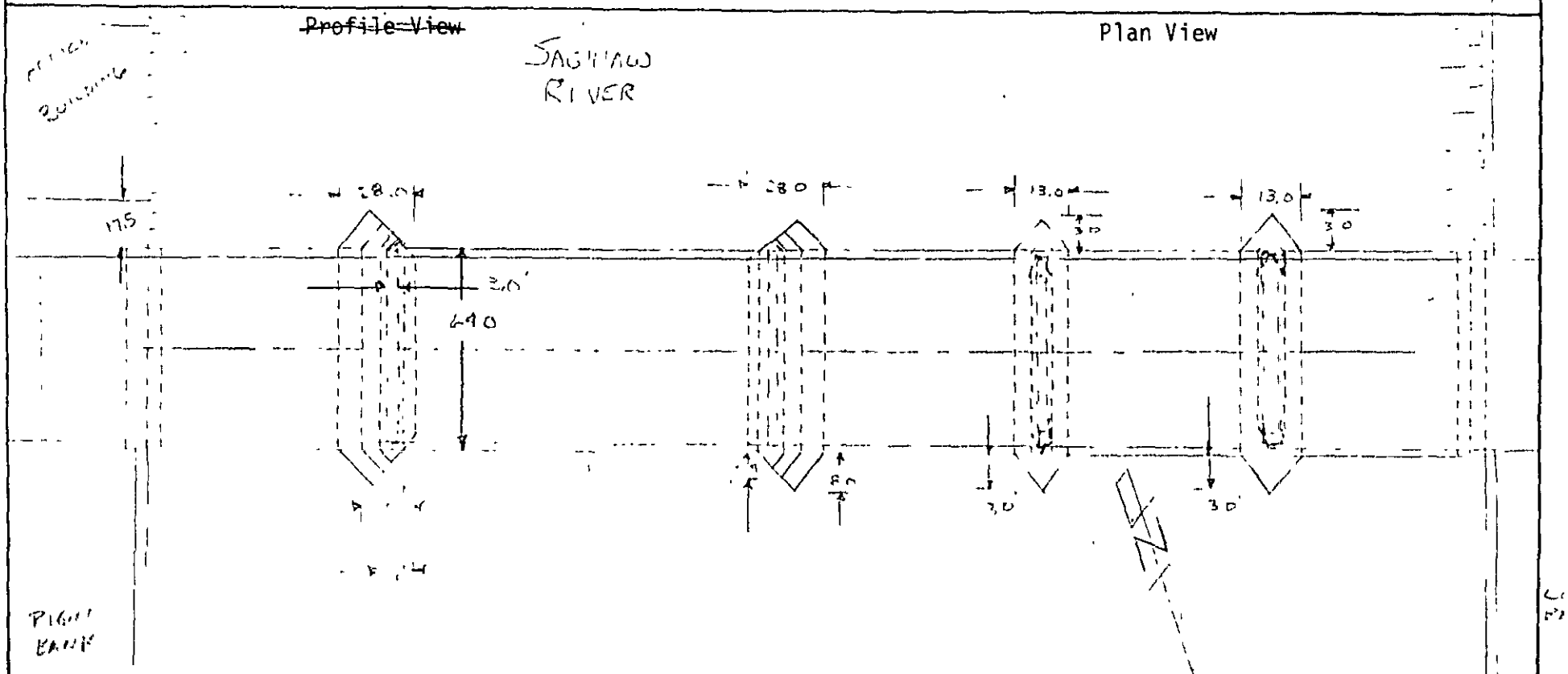
Code No. [illegible]

Job Name:			By:
Date:	Feature: GENESEE [illegible]		Water Course:
Remarks: RIVER MILE 18.14			
Width of Piers: 3'	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

~~Profile View~~

Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

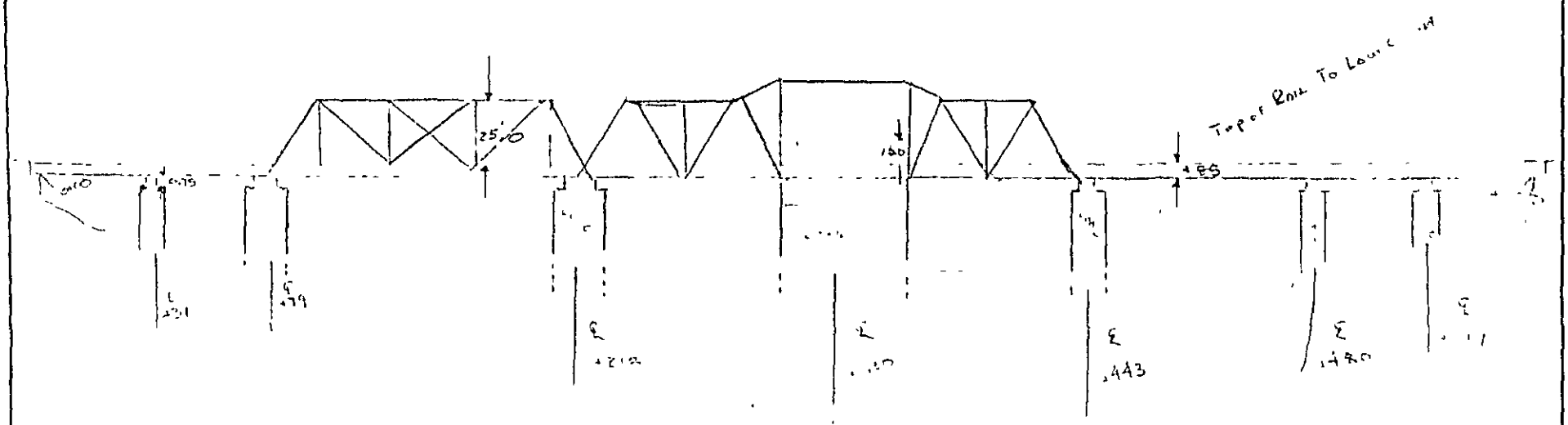
HYDRAULIC STRUCTURAL DATA

Code No. [illegible] 53

Job Name: [illegible]		By: R Moses	
Date:	Feature: [illegible]	Water Course: Saginaw River	
Remarks: RR bridge at Sherman St Penn Central R.R.			
Right & Left Banks - Industrial			
Width of Piers: Different	Pier Shape: See sketch	No. of Piers: 6	Area: —
Water Elevation: 581.8	Length: 550	Width of Deck: 19.0 19.0	Skew: —

FIELD SKETCH

Profile View ~~Plan View~~



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

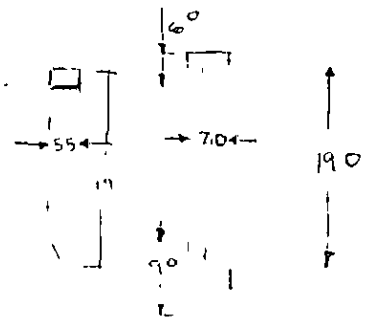
BS #53

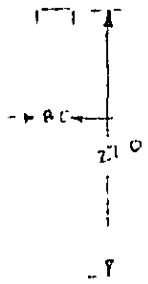
Code No. [illegible]

Job Name: [illegible]			By: [illegible]
Date:	Feature:		Water Course: [illegible]
Remarks: RE : RIDGE AT EMERSON ST (PLAN [illegible]			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

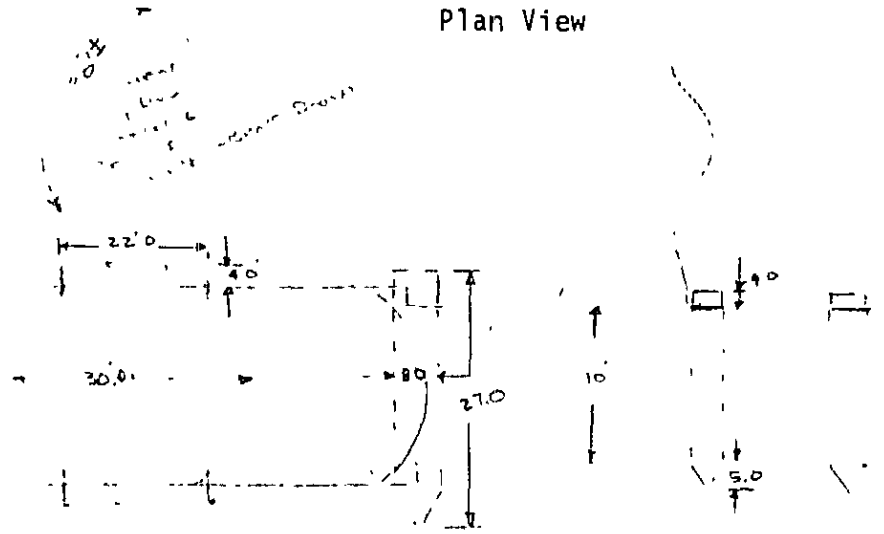
FIELD SKETCH

~~Profile View~~





Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P.O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

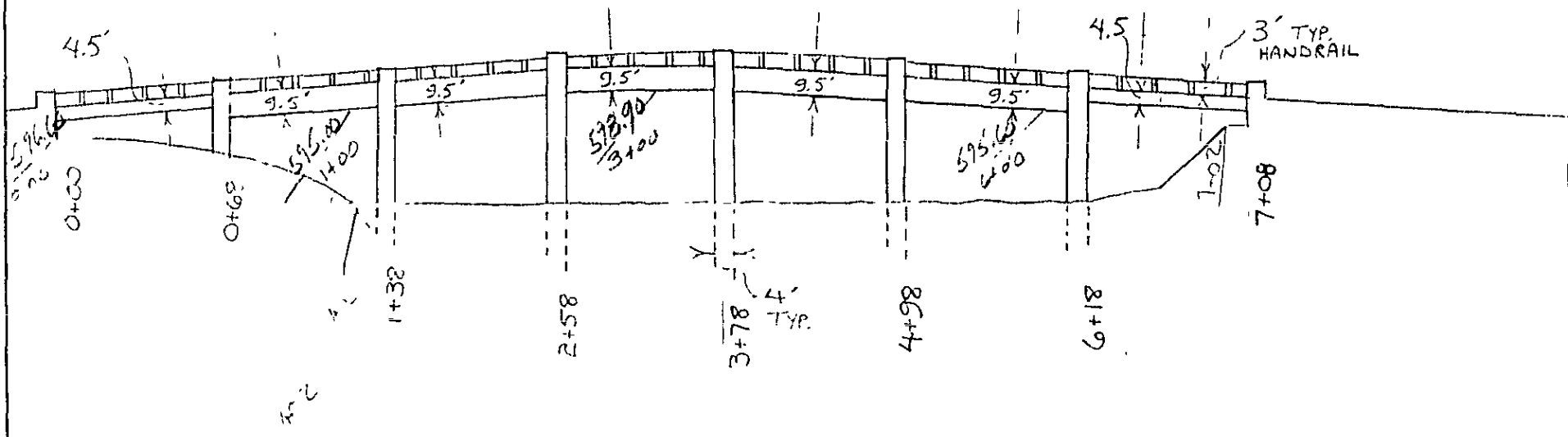
HYDRAULIC STRUCTURAL DATA

Code No. 5555-60-BS#55

Job Name: SAGINAW TWP		By: R. MOSES	
Date:	Feature: CONC. & I-BEAM BRIDGE	Water Course: SAGINAW RIVER	
Remarks: HOLLAND ST. BRIDGE RIVER MILE 19.45			
PICTURES:			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View ~~Plan View~~



UPSTREAM FACE

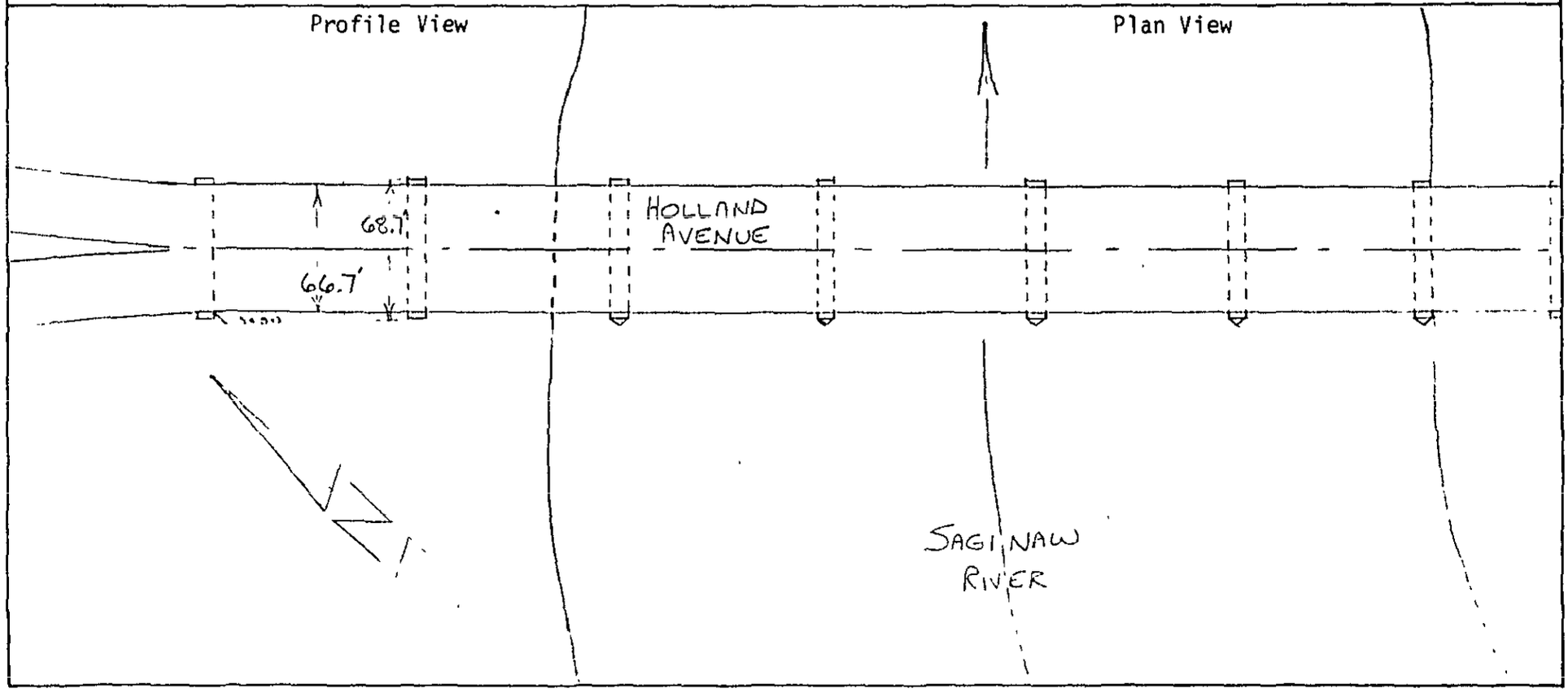
Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

Code No. 5555-60

Job Name:		By:	
Date:	Feature:	Water Course:	
Remarks: HOLLAND AVE BRIDGE RIVER MILE 19.15			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

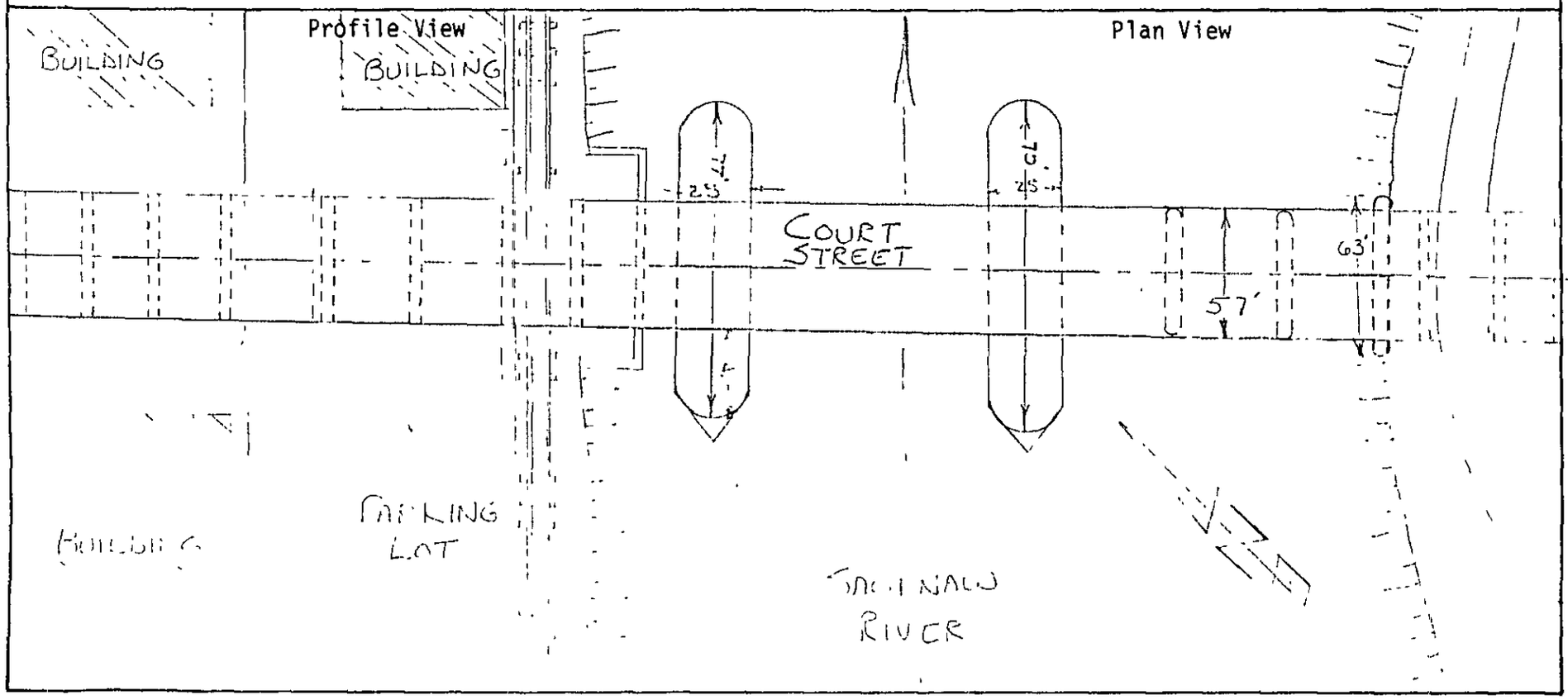
Code No. 5555-(6)-E556

Job Name: SAGINAW TWP.		By: R. MOSES
Date:	Feature: CONC & I-BEAM BRIDGE	Water Course: SAGINAW RIVER
Remarks: COURT ST. BRIDGE RIVER MILE 20.09		

PICTURES:

Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

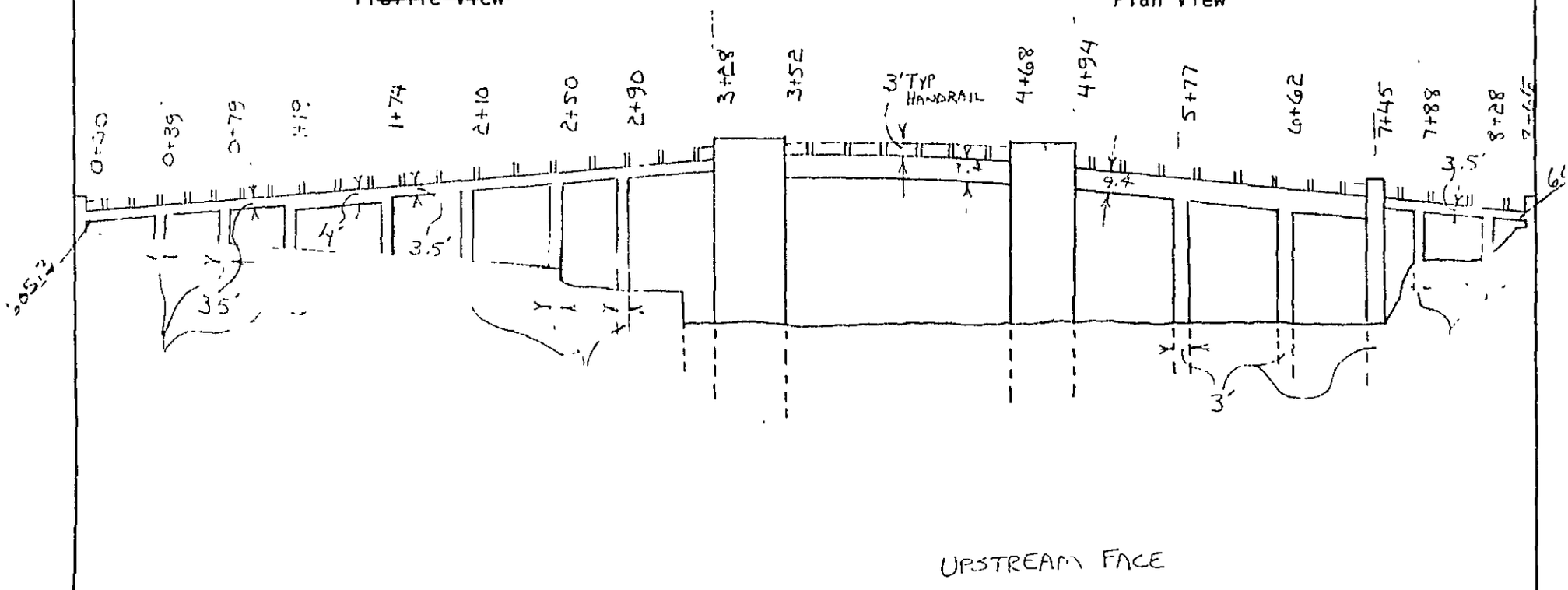
HYDRAULIC STRUCTURAL DATA

Code No. 5555 60 [illegible] 56

Job Name:			By:
Date:	Feature:		Water Course:
Remarks: COURT ST BRIDGE RIVER MILE 20.09			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

~~Profile View~~ Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

BS# 58

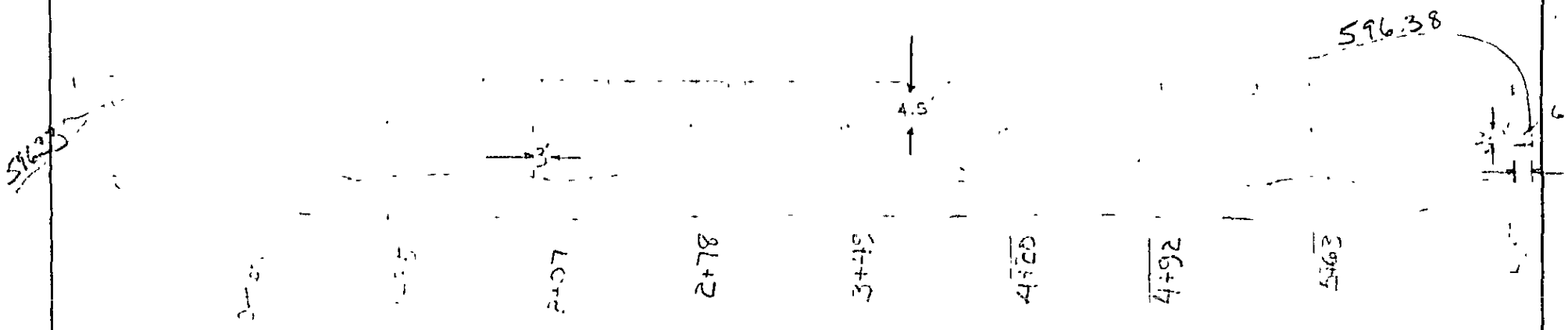
Code No. [illegible]

Job Name: [illegible] Twp		By: R Moses	
Date:	Feature: Conc. Bridge	Water Course: Saginaw River	
Remarks: [illegible] on Rust Rd over Saginaw River			
			Photo:
Width of Piers:	Pier Shape:	No. of Piers: 8	Area:
Water Elevation:	Length: 625	Width of Deck: 69'	Skew:

FIELD SKETCH

Profile View

Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

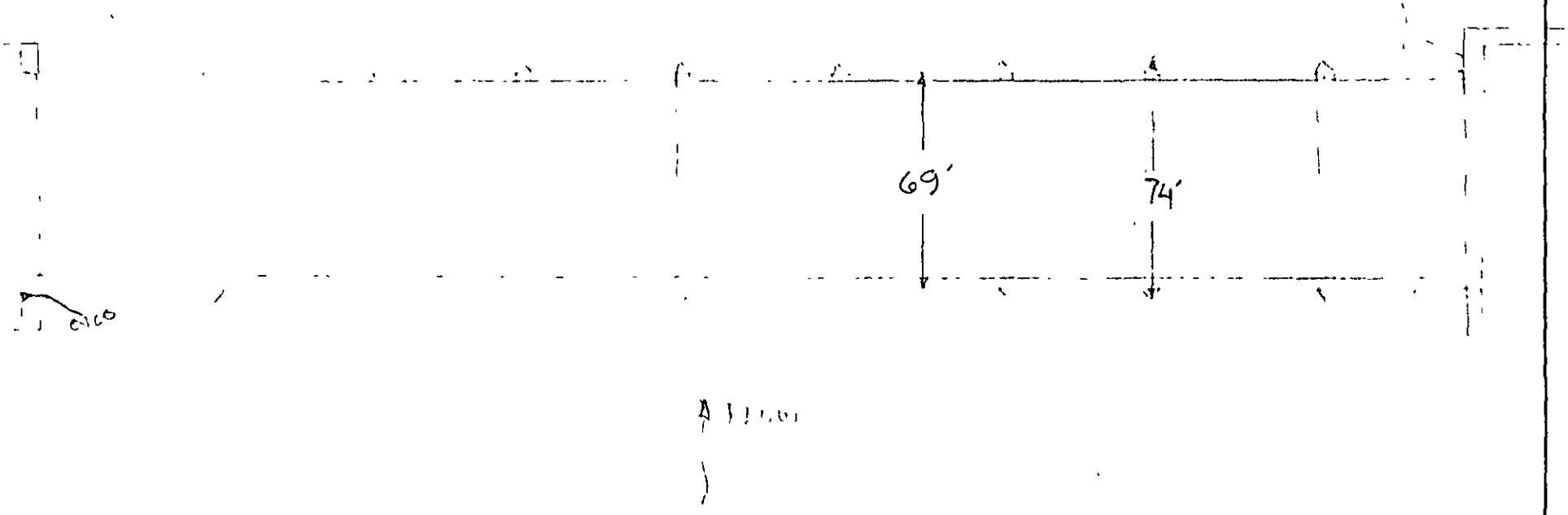
Code No. 5555-60 15' 58

Job Name:		By:	
Date:	Feature:	Water Course:	
Remarks: BRIDGE ON NUST RD OVER SAGINAW RIVER			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

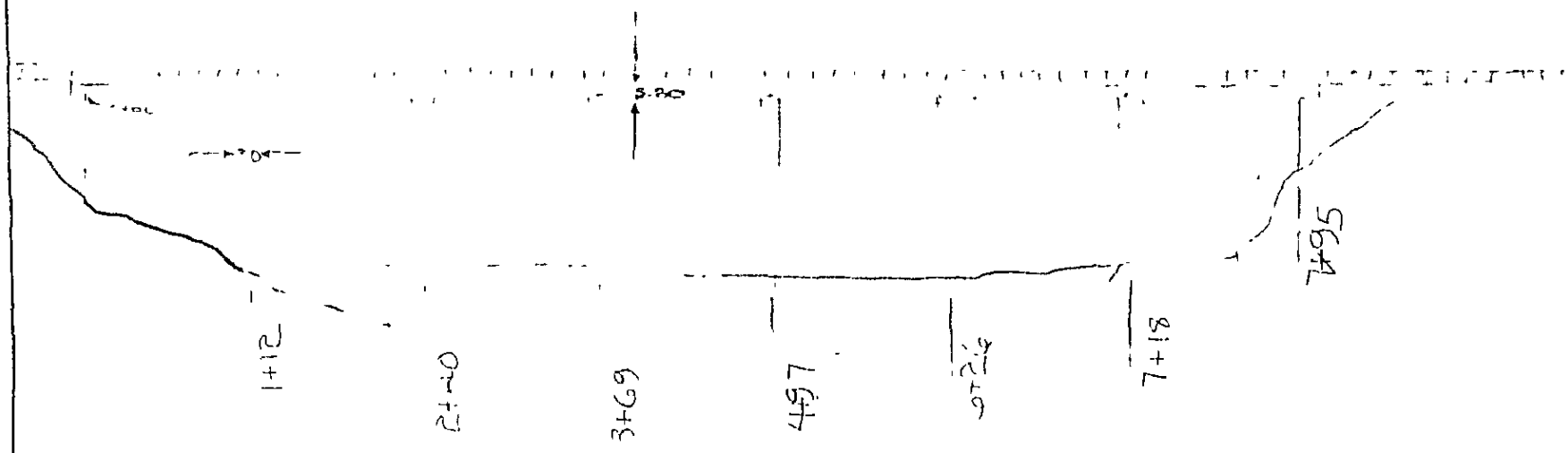
BJ #60

Code No. 5555-10

Job Name: SAGINAW TWP		By: R. MOSES	
Date: 7-8-76	Feature: CONC. BRIDGE	Water Course: SAGINAW RIVER	
Remarks: CONC BRIDGE OVER SAGINAW RIVER ON CENTER ST. COMMERCIAL BOTH BANKS			
		PHOTO	
Width of Piers: 3.0'	Pier Shape: ▯	No. of Piers: 6	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View ~~Plan View~~



Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

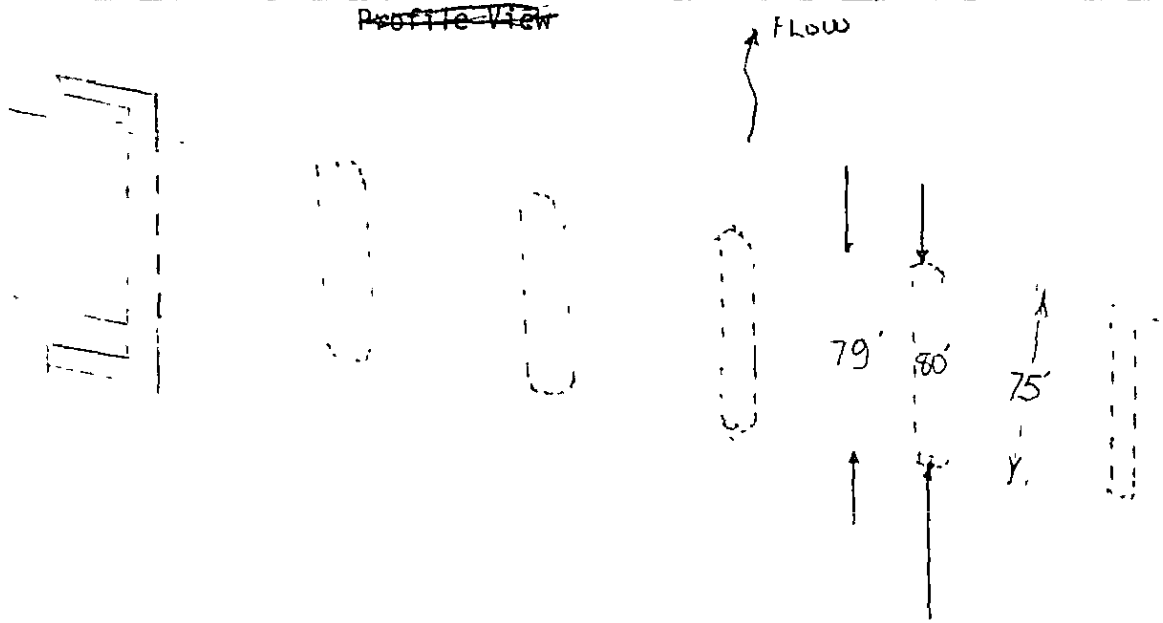
BS-#60

Code No. _____

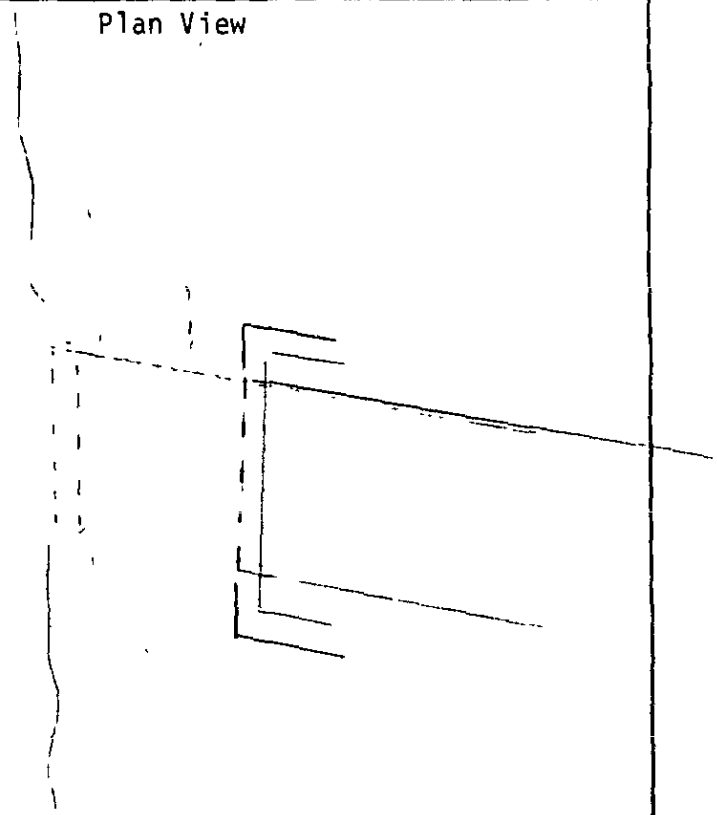
Job Name:		By:	
Date:	Feature:	Water Course:	
Remarks: CONC. BRIDGE OVER SAGINAW RIVER ON CENTER ST			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

~~Profile View~~



Plan View



DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

IN REPLY REFER TO

18 JUL 1991

Great Lakes Hydraulics and Hydrology Branch

Mr. Bruce Menerey, P.E.
Technical Programs
Land and Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

Dear Mr. Menerey:

Submitted for your review and approval is a copy of the hydraulic calculations for the Saginaw River, Bay and Saginaw Counties, Michigan Flood Insurance Restudy of 13 communities. Enclosed are the HEC-2 100- and 500-year profiles, 100-year un-encroached and encroached runs, and a brief write-up dealing with items that will assist the review process. Since there is no change in cross section locations and a new survey wasn't done, we are not submitting a map showing the location of the field surveyed cross sections or bridge drawings.

If you have any questions regarding the enclosed data, please contact Mr. Bruce Holbrook at (313) 226-6127 or Ms. Hanna Kobylinski at (313) 226-4761.

Sincerely,

Ronald E. Wilshaw, P.E.
Chief, G.L. Hydraulics and
Hydrology Branch

Enclosure

RECEIVED
JUL 19 1991
NATURAL RESOURCES
LAND & WATER MGMT.

Great Lakes Hydraulics and Hydrology Branch

Mr. Bruce Menerey, P.E.
Technical Programs
Land and Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

Dear Mr. Menerey:

Submitted for your review and approval is a copy of the hydraulic calculations for the Saginaw River, Bay and Saginaw Counties, Michigan Flood Insurance Restudy of 13 communities. Enclosed are the HEC-2 100- and 500-year profiles, 100-year un-encroached and encroached runs, and a brief write-up dealing with items that will assist the review process. Since there is no change in cross section locations and a new survey wasn't done, we are not submitting a map showing the location of the field surveyed cross sections or bridge drawings.

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Sincerely,

Ronald E. Wilshaw, P.E.
Chief, G.L. Hydraulics and
Hydrology Branch

Enclosure

SAGINAW RIVER
BAY AND SAGINAW COUNTIES, MICHIGAN
FLOOD INSURANCE RESTUDY OF 13 COMMUNITIES
HYDRAULIC COMPUTATION BACKGROUND INFORMATION

The Flood Insurance Restudy of 13 communities in Bay and Saginaw Counties includes a restudy of the Saginaw River from its origin in the Shiawassee Flats National Wildlife Refuge to its confluence with Saginaw Bay.

The restudy is being conducted for three reasons: 1) to incorporate the results of a new analysis of Saginaw Bay stages into the FIS's for effected communities, 2) to examine the validity of the existing FIS discharge-frequency analysis by updating the flows, and 3) to re-examine the stage-frequency analysis at Green Point, which is used for calibration of the HEC-2 model.

The hydrology for the above area was approved previously and is unchanged from the existing FIS.

Initially the stage-frequency at Green Point from the FIS, was compared to the stage-frequency as contained in the report "Saginaw River, Michigan and Tributaries, Flood Control and Fish and Wildlife Management at Shiawassee Flats", published by the U.S. Army Corps of Engineers, Detroit District, June 1982. There was good agreement. A new analysis was performed to update the values contained in the Corps of Engineers report and the study methodology was also modified. This resulted in a significant increase in the stages for a given frequency resulted for the highest events. At the 100- and 500-year events, the stage-frequency curves for both analyses are extrapolated. Due to the extensive storage in Shiawassee Flats, the extrapolation of a stage-frequency curve is uncertain. It is felt that the storage may substantially effect the shape of the curve if actual data were available. Because of this, it is being recommended that the curve as contained in the "Saginaw River, Michigan and Tributaries, Flood Control and Fish and Wildlife Management at Shiawassee Flats" report be used for the purpose of calibrating the HEC-2 model. A copy of the Figure is provided for your information.

The HEC-2 input and output data for the Saginaw River from the Shiawassee Flats to its confluence with Saginaw Bay was provided by the Michigan Department of Natural Resources. When a computer run was made to check for errors in the data entry, the water surface varied from the existing FIS output by more than a foot. Examination of the data revealed no errors in the data entry. The problem appears to be due to differences in the versions of the HEC-2 program which are presently available and the version used in the original FIS. With the same Manning's "n" values in the input, different values result in the output.

Consequently, it was decided to recalibrate the HEC-2 model. The calibration is based on the Green Point rating curve as indicated above. The starting water surface elevation at Saginaw Bay

is the same as in the existing FIS's. There were only two changes made to the model: 1) the modeling at Middle Ground Island was modified and 2) Manning"s "n" values were altered.

The HEC-2 model as supplied by the MDNR had one of the channels around Middle Ground Island encroached so that no flow would occur. According to the report supplied with the model, originally the model was executed with separate runs for flow on each side of the island and the energy grade lines were balanced. For this study, the encroachment was removed and flow was allowed on both sides of the island. It was felt that since the calibration is only to stage-frequency data at Green Point, independent modelling of the separate channels is not justified.

The Manning's "n" values were changed using field 6 of the J2 card. A factor of 0.9 was needed to match the Green Point satge-frequency curve.

For the encroached run on this stream, the computations were begun using the results from 100-year profile run. For the most part, the topwidths in this study are approximately equal to or less than those shown for the existing FIS's. From Sections 6.519 to 6.529, the topwidth is much less. At Sections 7.016 to 8.241, the topwidth is substantially more. The decrease in topwidths downstream of Section 7.016 is not the primary cause of the larger topwidths at 7.016 to 8.241. An attempt was made to enlarge the topwidths downstream of Section 7.016, but no substantial encroachment at Section 7.016 was possible without unacceptable increases in the water surface elevation.

K+E PROBABILITY X 90 DIVISIONS
KEUFFEL & ESSER CO MADE I
46 8000

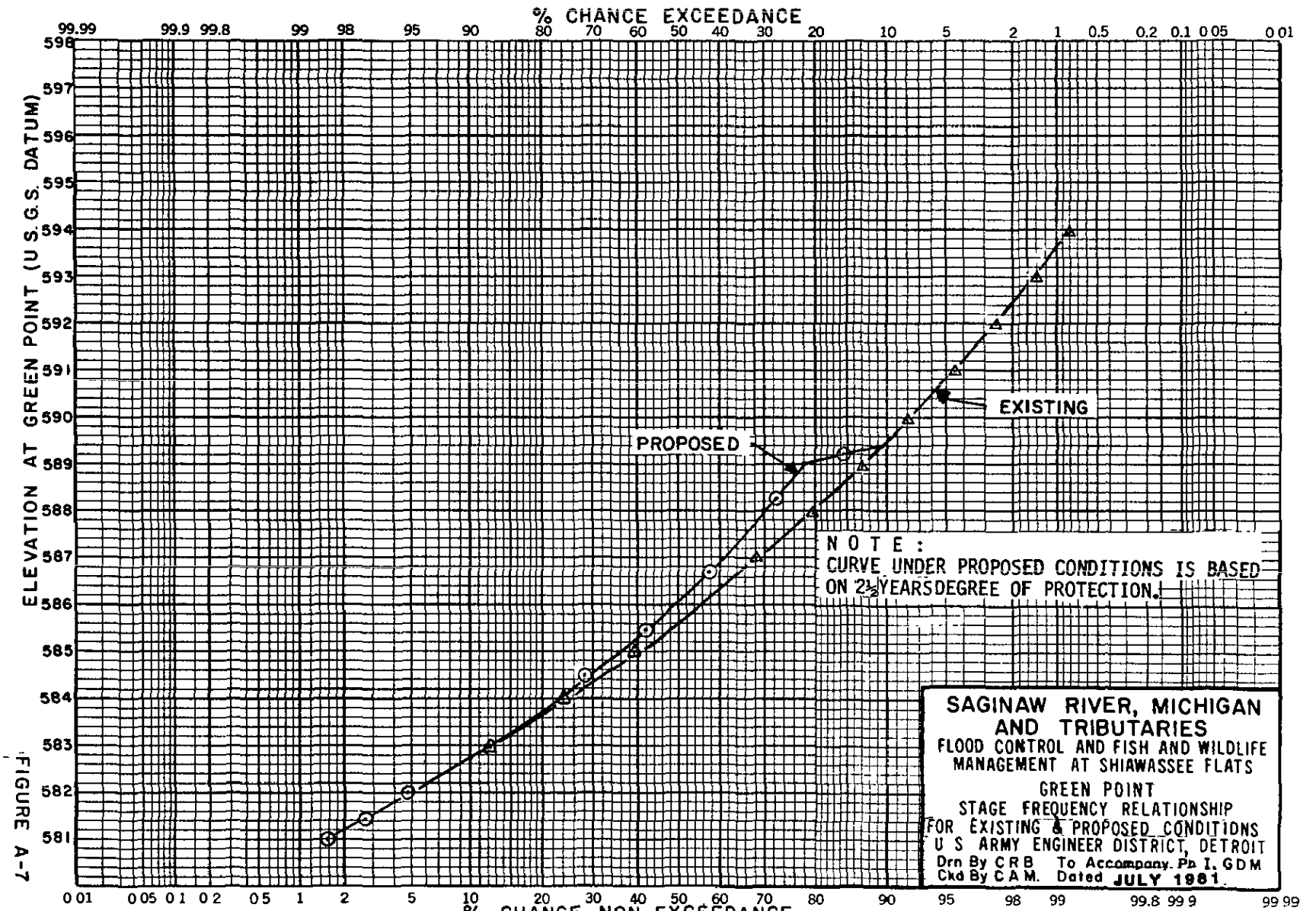

FIGURE A-7

August 12, 1991

Mr. Ron E. Wilshaw, P.E., Chief
Engineering Division
Great Lakes Hydraulics and Hydrology Branch
Detroit District Corps of Engineers
P.O. Box 1027
Detroit, Michigan 48231-1027

Re: Saginaw Restudy
Hydraulics
Bay and Saginaw Counties

Dear Mr. Wilshaw:

We have completed our review of the hydraulics for the Saginaw River submitted July 18, 1991. Based upon our review, we would like to offer the following comments:

1. XSEC 6.222 to XSEC 8.099

The original FIS had modeled this area as an island with channels on each side of the island. During the 100-year discharge of 65900 cfs, the original "divided flow analysis" indicated 57650 cfs in the main channel and 8250 cfs in the right channel.

The hydraulics submitted has used the main channel discharge of 57650 cfs for this reach. However, at cross sections 7.016, 7.567, and 8.099, the entire cross section has been used (instead of being limited to just the main channel). If only the main channel flow is to be modeled, these cross sections should be encroached to the main channel defined in the original FIS.

If the entire river cross section is to be used, the total 100-year discharge of 65900 cfs should be used. This would require that the encroachments on the cross sections from 6.222 through 8.099 would have to be adjusted so the flow is **not** restricted to the main channel.

Enclosed is a portion of the original work-map to try to clarify the concern.

2. Floodway Delineation (XSEC 6.222 through 8.099)

When the floodway is delineated at Middle Ground Island, ineffective flow area should not be included within the floodway. The existing floodway map provides a reasonable representation of the floodway, we would not anticipate a significant change from the current delineation.

We ask that you consider these comments, and, as appropriate, make the adjustments necessary. If you have any questions, please feel free to contact me.

Sincerely,

Bruce E. Menerey, P.E.
Floodplain Mapping/Delineation
Land and Water Management Division
517-335-3181

BEM:cjr

Enclosure

cc: Mr. Norbert Schwartz, Region V, FEMA
Mr. Bruce Holbrook, Detroit District COE

8001-324

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY MSC DATE 12/7/79 JOB DESCRIPTION Sagnaw River Hydrology SHEET 1 OF 1
SUBJECT Summary of Flows (100-Year Flood) JOB NO. 6423-00

Table 2. Summary of Flows for 100-Year Flood.

Location	Drainage Area (mi²)	Flows in CFS					
		* Existing Conditions	5% Storage Reduction at Cheboyganing & Un-Named Tri	10% Storage Reduction at Cheboyganing & Un-Named Tri	15% Storage Reduction at Cheboyganing & Un-Named Tri	20% Storage Reduction at Cheboyganing & Un-Named Tri	30% Storage Reduction at Cheboyganing & Un-Named Tri
At Sagnaw Gage	6060	68000	68000	68000	68000	68000	68000
Above Cheboyganing Creek	6096	68400	68400	68400	68400	68400	68400
At Cheboyganing Creek (with storage effects)	6200	67100	67200	67400	67500	67500	67800
At Un-named Tributary (with storage effects)	6261	65900	66000	66200 **	66300 **	66400 **	66700 **
At Mouth	6278	66100	66200	66400 **	66500 **	66600 **	66900 **

* Per Flood Insurance Study for the Sagnaw River.

** Revised 2/6/80

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY MSC DATE 12/20/79 JOB DESCRIPTION Saginaw River SHEET 1 OF 1
SUBJECT Water Surface Elevation Increases JOB NO. 6473-00

Table 3 Water Surface Elevation Increases

Section No.	SECNO	Water Surface Elevation Increase, (ft)				
		5% Storage Deduction at Cheboyganing & Un-Named Trib.	10% Storage Deduction at Cheboyganing & Un-Named Trib.	15% Storage Deduction at Cheboyganing & Un-Named Trib	20% Storage Deduction at Cheboyganing & Un-Named Trib.	30% Storage Deduction at Cheboyganing & Un-Named Trib.
D	1.761	0.00	0.01 *	0.01	0.02 *	0.03 *
M	4.366	0.01	0.02 *	0.03 *	0.04 *	0.06 *
S	5.905	0.01	0.03 *	0.04 *	0.05 *	0.09 *
W	7.567	0.02	0.04 *	0.05 *	0.06 *	0.10 *
X	8.099	0.01	0.03 *	0.05 *	0.06 *	0.10 *
Y	8.241	0.02	0.04 *	0.05 *	0.07 *	0.10 *
Z	9.079	0.01	0.04 *	0.05 *	0.07 *	0.10 *
AA	9.584	0.01	0.03 *	0.05 *	0.06 *	0.10 *
AB	10.240	0.01	0.04 *	0.05 *	0.06 *	0.10 *
AF	13.249	0.01	0.03 *	0.04 *	0.05 *	0.08 *
AJ	15.156	0.01	0.03 *	0.04 *	0.05 *	0.07 *

* Revised 2/6/80

X1	18.93	87	300.00	850.00	1.00	1.00	1.00	1.000		
BT	25.00	0.00	593.60	0.00	100.00	594.50	0.00	200.00	595.50	0.00
BT	300.00	596.40	591.60	334.20	596.70	591.90	339.70	596.70	591.90	375.50
BT	597.10	592.30	382.50	597.10	592.30	514.00	597.30	592.50	522.00	597.30
BT	592.50	615.00	597.30	592.50	645.00	597.30	592.50	739.00	597.20	592.40
BT	747.00	597.20	592.40	776.50	597.20	592.40	783.50	597.20	592.40	814.20
BT	597.10	592.30	819.70	597.10	592.30	850.00	596.80	592.00	900.00	596.80
BT	0.00	1000.00	596.90	0.00	1100.00	596.60	0.00	1200.00	596.60	0.00
BT	1300.00	596.50	0.00	1330.00	596.30	0.00				
GR	593.60	0.00	594.50	100.00	595.50	200.00	596.40	300.00	588.20	300.00
GR	588.30	310.00	582.30	333.00	581.20	334.20	591.90	334.20	591.90	339.70
GR	579.70	339.70	579.60	340.00	579.10	350.00	578.60	360.00	579.00	370.00
GR	578.90	375.50	592.30	375.50	592.30	382.50	576.20	382.50	568.00	390.00
GR	567.10	400.00	565.30	410.00	565.30	420.00	564.10	430.00	562.40	440.00
GR	561.90	450.00	561.60	460.00	561.00	470.00	559.10	480.00	556.60	490.00
GR	556.50	500.00	565.00	510.00	564.90	514.00	592.50	514.00	592.50	522.00
GR	564.30	522.00	562.70	530.00	561.40	540.00	561.50	550.00	556.60	560.00
GR	555.80	570.00	555.20	580.00	555.50	590.00	554.90	600.00	555.00	610.00
GR	555.30	615.00	592.50	615.00	592.50	645.00	557.20	645.00	557.50	650.00
GR	557.40	660.00	556.90	670.00	557.30	680.00	557.50	690.00	657.90	700.00
GR	558.80	710.00	561.40	720.00	562.10	730.00	567.80	739.00	592.40	739.00
GR	592.40	747.00	571.20	747.00	572.40	750.00	575.00	760.00	575.60	770.00
GR	576.20	776.50	592.40	776.50	592.40	783.50	577.50	783.50	579.30	790.00
GR	579.80	800.00	581.10	810.00	583.50	814.20	592.30	814.20	592.30	819.70
GR	586.60	819.70	586.80	820.00	588.00	830.00	590.60	840.00	591.20	850.00
GR	596.80	850.00	596.80	900.00	596.90	1000.00	596.60	1100.00	596.60	1200.00
GR	596.50	1300.00	596.30	1330.00						

**********LISTING OF TOP AND BOTTOM SECTIONS OF ORIFICE**********

300.00	591.60	334.20	591.90	339.70	591.90	375.50	592.30	382.50	592.30
514.00	592.50	522.00	592.50	615.00	592.50	645.00	592.50	739.00	592.40
747.00	592.40	776.50	592.40	783.50	592.40	814.20	592.30	819.70	592.30
850.00	592.00								

300.00	596.40	300.00	588.20	310.00	588.30	333.00	582.30	334.20	581.20
334.20	591.90	339.70	591.90	339.70	579.70	340.00	579.60	350.00	579.10
360.00	578.60	370.00	579.00	375.50	578.90	375.50	592.30	382.50	592.30
382.50	576.20	390.00	568.00	400.00	567.10	410.00	565.30	420.00	565.30
430.00	564.10	440.00	562.40	450.00	561.90	460.00	561.60	470.00	561.00
480.00	559.10	490.00	556.60	500.00	556.50	510.00	565.00	514.00	564.90
514.00	592.50	522.00	592.50	522.00	564.30	530.00	562.70	540.00	561.40
550.00	561.50	560.00	556.60	570.00	555.80	580.00	555.20	590.00	555.50
600.00	554.90	610.00	555.00	615.00	555.30	615.00	592.50	645.00	592.50
645.00	557.20	650.00	557.50	660.00	557.40	670.00	556.90	680.00	557.30
690.00	557.50	700.00	657.90	710.00	558.80	720.00	561.40	730.00	562.10
739.00	567.80	739.00	592.40	747.00	592.40	747.00	571.20	750.00	572.40
760.00	575.00	770.00	575.60	776.50	576.20	776.50	592.40	783.50	592.40
783.50	577.50	790.00	579.30	800.00	579.80	810.00	581.10	814.20	583.50
814.20	592.30	819.70	592.30	819.70	586.60	820.00	586.80	830.00	588.00
840.00	590.60	850.00	591.20	850.00	596.80				

********** LISTING OF COORDINATES OF ORIFICE**********

300.00	591.60	334.20	591.90	339.70	591.90	375.50	592.30	382.50	592.30
514.00	592.50	522.00	592.50	615.00	592.50	645.00	592.50	739.00	592.40
747.00	592.40	776.50	592.40	783.50	592.40	814.20	592.30	819.70	592.30
850.00	592.00	850.00	591.20	840.00	590.60	830.00	588.00	820.00	586.80
819.70	586.60	819.70	592.30	814.20	592.30	814.20	583.50	810.00	581.10
800.00	579.80	790.00	579.30	783.50	577.50	783.50	592.40	776.50	592.40
776.50	576.20	770.00	575.60	760.00	575.00	750.00	572.40	747.00	571.20
747.00	592.40	739.00	592.40	739.00	567.80	730.00	562.10	720.00	561.40
710.00	558.80	700.00	657.90	690.00	557.50	680.00	557.30	670.00	556.90
660.00	557.40	650.00	557.50	645.00	557.20	645.00	592.50	615.00	592.50
615.00	555.30	610.00	555.00	600.00	554.90	590.00	555.50	580.00	555.20
570.00	555.80	560.00	556.60	550.00	561.50	540.00	561.40	530.00	562.70
522.00	564.30	522.00	592.50	514.00	592.50	514.00	564.90	510.00	565.00
500.00	556.50	490.00	556.60	480.00	559.10	470.00	561.00	460.00	561.60
450.00	561.90	440.00	562.40	430.00	564.10	420.00	565.30	410.00	565.30
400.00	567.10	390.00	568.00	382.50	576.20	382.50	592.30	375.50	592.30
375.50	578.90	370.00	579.00	360.00	578.60	350.00	579.10	340.00	579.60
339.70	579.70	339.70	591.90	334.20	591.90	334.20	581.20	333.00	582.30
310.00	588.30	300.00	588.20	300.00	591.60				

ORIFICE AREA 10906.8 WETTED PERIMETER 1429.2 29.1/R**1.333 1.9414

SAGINAW RIVER AT SAGINAW

SLOPE-GAGE

DATUM (OLD) = 566.85 IGLD

R1016-1

YEAR	DATE	Q	H	ELEV	S.B.E.
1904	3-29	68000	24.9	591.75	
1905	3-27	28900	20.65	587.5	
1906	1-25	22400	19.4	586.25	
1907	1-24	27400	20.4	587.25	
1908	3-16	39500	22.3	589.15	
1909	5-3	41200	22.5	589.35	
1910	3-9/10	21100	19.1	585.95	
1911	2-21	—	17.0	583.85	
1912	5-24	58400	24.1	590.95	
1913	3-17	33400	21.4	588.25	
1914	3-20	—	17.1	583.95	
1915	2-27	22600	19.0	585.85	
1916	3-31	60800	24.3	591.15	
1917	4-8/9	20400	18.1	584.95	
1918	3-22	51700	23.5	590.35	
1919	3-20	47300	23.1	589.95	
1920	3-18	26700	20.2	587.05	
1921	4-26	20800	18.3	585.15	
1922	2-26/27	21100	18.4	585.25	
1923	5-22	21100	18.4	585.25	
1924	3-30	—	16.3	583.15	
1925	3-23	—	14.9	581.75	
1926	3-26	26300	20.1	586.95	
1927	3-16	—	17.9	584.75	
1928	4-9	25900	20.0	586.85	
1929	4-10	40200	22.4	589.25	
1930	2-27	29200	20.7	587.55	
1931	~	~	14.0	580.85	
1932	2-14	~	14.6	581.45	
1933	5-4	22100	16.1	582.95	
1934	4-6	~	13.4	580.25	
1935	3-8	29200	17.8	584.65	
1936	3-14	~	14.1	580.95	
1937	4-29	~	15.1	581.95	
1938	2-16	29600	17.9	584.75	
1939	4-21	~	14.7	581.55	
1940	4-1	~	14.1	580.95	
1941	1-6	~	14.9	581.75	

R1016-1

YEAR	DATE	Q	H	ELEV.	S.B.E.
1942	3-19	47000	21.0	587.85	
1943	3-19	33300	18.9	585.75	
1944	~	~	15.6	582.45	
1945	6-5	30100	18.5	585.35	
1946	3-9	45700	20.82	587.67	
1947	4-8	40200	19.9	586.75	
1948	3-22	53400	22.14	588.99	
1949	4-15	~	14.4	581.25	
1950	4-6	47000	20.6	587.45	
1951	3-1	24500	16.7	583.55	
1952	4-15	29600	18.65	585.5	
1953	11-22	~	16.5	583.35	
1954	2-23	22700	15.9	582.75	578.66
1955	4-26	~	16.4	583.25	579.74
1956	5-15	36500	19.05	585.9	578.41
1957	7-13	27800	17.15	584.0	578.40
1958	10-24	~	14.3	581.15	576.52
1959	4-5	40400	19.08	585.93	576.57
1960	4-3	45900	20.6	587.45	577.59
1961	10-24	~	14.89	581.74	577.90
1962	3-22	30000	17.6	584.45	577.46
GAGE MOVED		DATUM = 565.11 IGLD			
1967	3-29	29100	17.1	582.21	576.48
1968	2-4	26800	17.23	582.34	577.95
1969	5-12	24100	17.29	582.4	578.85
1970	4-9	15500	15.35	580.46	578.47
1971	3-19	22000	17.16	582.27	579.24
1972	3-23	16900	16.15	581.26	—
1973	1-4	31700	18.71	583.82	578.97
1974	3-7&9	34300	19.90	585.01	579.98
1975	9-6	24500	18.3	583.41	—

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

FEB 28 1992

IN REPLY REFER TO
Planning Division
Plan Formulation Branch

Mr. Charles A. Lindsey
Federal Emergency Management Agency
Office of Risk Assessment
Washington, D.C. 29472

Dear Mr. Lindsey:

In fulfillment of Chapter 11 of the March 1991 instructions, please note the submission of the draft restudy report for the flood insurance study for 13 communities located within the Saginaw River Basin, Bay and Saginaw Counties, Michigan. This report was completed by the Detroit District, Corps of Engineers, under Inter-Agency Agreement EMW-91-E-3525, Project Order No. 2, as amended to include, in the digital mapping, the existing flood plain information for the other communities within Bay and Saginaw Counties.

In accordance with your October 1991, guidance, the following revised information is being transmitted to your appropriate technical evaluation coordinator, Dewberry and Davis, attention Mr. William Fry:

Draft Report (Original)	Enclosure 1
Study Certification	Enclosure 2
FBFM/FIRM Index Map	Enclosure 3
Flood Profiles (Original)	Enclosure 4
Technical Letter Report	Enclosure 5
Summary Computer Printouts	Enclosure 6
Computer Program/Digital Data	Enclosure 7
Study Documentation	Enclosure 8

Please note that the computer data submittal consists of a diskette of HEC program input files, magnetic tape of the digital files for the restudy area, and floppy disks containing the digital files of the remapped portions of the study area.

If questions arise concerning the enclosed data, please contact Mr. Joseph Wanielista, Flood Plain Management Services, at (313) 226-6773.

Sincerely,

Orig

William W. Willis, P.E.
Chief, Planning Division

Enclosures
CF: Bruce Menerey, MDNR, (w/Encls, except 6 and 8)

Bay and Saginaw Counties, Michigan
Flood Insurance Restudy of 13 Communities
Impacted by the Saginaw River
and
Digital Remapping of Other Participating Communities

On September 27, 1990 a Consultation and Coordination Officer's (CCO) meeting was held for the purpose of revising 13 Flood Insurance Studies. The meeting was attended by representatives of the study contractor (U.S. Army Corps of Engineers, Detroit District), Federal Emergency Management Agency (FEMA), Michigan Department of Natural Resources (MDNR), and several of the local officials. The hydraulics and hydrology of this study covers the Saginaw River, starting from its confluence with Saginaw Bay to its origin in the Shiawassee Flats National Wildlife Refuge (approximately 22 miles). The study was performed to verify the validity of the discharges used in the existing FIS's for the indicated reach of the river due to additional years of gage data, to incorporate the results of a new analysis of Saginaw Bay stages into the FIS's for effected communities, and to reexamine the stage-frequency analysis at Green Point. This study was limited to only the 100- and 500- year floods.

Communities included in the restudy are the City of Bay City, Frankenlust Township, Bangor Township and Portsmouth Township in Bay County and Bridgeport Township, Buena Vista Township, Carrollton Township, James Township, the City of Saginaw, Saginaw Township, Spaulding Township, Zilwaukee Township, and the City of Zilwaukee in Saginaw County.

Communities included in the remapped areas are Merritt Township, Beaver Township, the City of Essexville, Williams Township, Monitor Township, Fraser Township, Kawkawlin Township, Hampton Township, the City of Pinconning, and Pinconning Township in Bay County and Thomas Township, Village of St. Charles, Albee Township, Tittabawassee Township, Kochville Township, Village of Chesaning, the City of Frankenmuth and Taymouth Township in Saginaw County. All streams are being mapped digitally in these communities and are being copied from FIS panels. Also, several of the restudy communities have streams that are being submitted with this group. These include Frankenlust Township in Bay County and Bridgeport Township, Saginaw Township and Buena Vista Township in Saginaw County. The streams included and not included will be discussed later.

Results of the technical aspects of this portion of the study were reviewed and approved by the MDNR, the State coordinating agency.

In addition, Bangor Township, Bay County also includes a study to incorporate the results of the new stage analysis for Saginaw Bay and wave run-up effects. The Technical Letter Report for this analysis is being supplied as an attachment to this report and

Encl 1

should supply the necessary information for preparation of the wave run-up portion of the community study. A transect location map has been added as a part of that attachment.

Results of the technical aspects of this portion of the study are being reviewed by the MDNR, the State coordinating agency, at this time.

The coastal, hydraulic and hydrologic analyses for this study were prepared by the U.S. Army Corps of Engineers, Detroit District, for the FEMA, under Interagency Agreement No. EMW-91-E-3525, Project Order No. 2, as amended. This work was completed in February 1992.

The frequency analysis for the Saginaw River discharges were based on U.S. Geological Survey gage records (U.S.G.S. gage #157000) collected at Genesee Street and Rust Ave. within the City of Saginaw. This is basically the same data as used in the original studies, with additional years of record, including the September 1986 flood. The HECWRC computer program, which is based on the criteria described in the U.S. Water Resources Council Bulletin #17B, Guidelines for Determining Flood Flow Frequency, was used in the analysis. In accordance with FEMA guidelines, no changes were made in the existing discharges, as these flows fell within the 90% confidence interval for the current analysis.

The Green Point stage-frequency curve is being used for calibration of the HEC-2 model. In this and the Detroit District, Army Corps of Engineers report "Saginaw River, Michigan and Tributaries, Flood Control and Fish and Wildlife Management at Shiawassee Flats", published in June 1982, it has been based on the U.S. Geological Survey stages measured at the Genesee St. and Rust Ave. gages. Adjustment to these values are applied, based on preliminary HEC-2 modeling, to estimate the corresponding stage at Green Point. Based on this analysis, the stage-frequency has not changed significantly from the Corps earlier study. The existing FIS matches well with the Corps Green Point stage-frequency curve.

The HEC-2 input model for the Saginaw River was provided by the Michigan Department of Natural Resources. Due to changes in the source code of HEC-2, when the current version of the model was run, differences of over a foot in the water surface profile were found, when compared to the existing FIS. Consequently, it was decided to recalibrate the HEC-2 model. The calibration is based on the Green Point rating curve as indicated above. The starting water surface elevation at Saginaw Bay is the same as in the existing FIS's. There were only two changes made to the model: 1) the modeling at Middle Ground Island was modified and 2) Manning's "N" values were altered.

The HEC-2 model as supplied by the MDNR had one of the channels around Middle Ground Island encroached so that no flow would occur. According to the report supplied with the model, originally the model was executed with separate runs for flow on

each side of the island and the energy grade lines were balanced. For this study, the encroachments were left in place and only the flow in the main channel was used. It was felt that since the calibration is only to stage-frequency data at Green Point, independent modelling of the separate channels was not necessary.

The Manning's "N" values were changed using field 6 of the J2 card. A factor of 0.9 was needed to match the Green Point stage-frequency curve.

A new encroachment run was made on the Saginaw River for two reasons: 1) at the time of the original studies for at least several of the communities, it is believed that the HEC-2 encroachment option was not available and 2) the HEC-2 model has been modified for this study due to fundamental changes made in the HEC-2 source code. For the most part the topwidths in this study are approximately equal to or less than those shown for the existing FIS's. There was no encroachment run made using the minor (west) channel at Middle Ground Island since the model was set up for flow only in the main channel. Instead, the floodway in the minor channel was delineated using the original study.

Under this contract, only one report is being submitted for the 13 communities. As a result, several changes have been made in the report format. These changes will be discussed in full as the various items being submitted are discussed.

The work map is being submitted in two forms. Two paper reference maps, one for Bay County and one for Saginaw County are being provided for a general overview of the study area. The actual work map is being supplied in digital format as specified by the contract for this work. With only two digital files being used, cross-section lettering followed typical FIS criteria, but did not start at "A" at community boundaries. Instead, the work map started at the mouth with a cross-section designation of "A" and continued as if only one community were being studied. This was to avoid confusion in areas where one cross-section applies to multiple communities, but that would not have the same letter designation. For elevation reference marks, the original numbers were maintained. In a few cases near community boundaries, this results in dual ERM numbers, each one corresponding to the original used in the adjoining communities.

A new Floodway Data Table is being provided. It is being presented as a single table, but is broken up by community. A dual cross-section designation is given in the table. The first letter corresponds to the cross-section designation given on the work map, the second is the appropriate designation when beginning at the corporate boundary.

A new profile is also being provided. Again, only one profile is being submitted. Corporate boundaries are included for all relevant communities. Cross-sections may have up to three designations. One of the designations corresponds to the cross-

section designation on the work map. Above that designation, there may be one or two others. These correspond to the individual community designations. The community with the most downstream corporate boundary will either be the lower or most left of the two.

As a result of this hydraulic and hydrologic study of the Saginaw River, numerous tributaries within the communities are under its influence and are included in the restudy digital files. In addition, with the information currently available, several tributaries with approximate flood plain delineations have been upgraded to detailed areas. With the availability of two foot mapping in some areas, the delineations on several streams were carried beyond the influence of the Saginaw River using the previously existing hydraulic analyses. Finally, in several communities there was such a limited area with unaltered flood delineations, they were included in the restudy digital files. The information supplied for tributary areas will only include a written description of changes to the profiles, floodway data tables and other pertinent hydraulic information.

Other tributaries, where no new information was available to improve upon the existing studies, were left out of the restudy. They will be included in the remapping digital files of this study.

Communities with tributary areas that are included in the restudy include, Bangor Township, Portsmouth Township, and Frankenlust Township in Bay County and Bridgeport Township, Buena Vista Township, Carrollton Township and Spaulding Township in Saginaw County.

Three communities had no study areas other than the Saginaw River. They are the City of Zilwaukee, Zilwaukee Township and the City of Bay City.

In the Bangor Township FIS, several items need to be modified. Table 2., Saginaw Bay Still Water Elevations, need to be adjusted as follows:

10-Year	50-Year	100-Year	500-Year
584.0	585.2	585.7	586.7

Also the backwater effect of Saginaw Bay now extends slightly further upstream on the Kawkawlin River profile. The above elevations should be used to adjust the profiles. Finally, in the "Principal Flood Problems" section of the report, the estimated Saginaw Bay levels should either be removed or corrected with the values above.

The Portsmouth Township FIS included no elevation tables, floodway data tables or profiles for Douglas, Trombley and Cheboyganing Creeks. They were reported to be inundated by the Saginaw River. This is still the case.

The two streams included in the restudy for Frankenlust Township are Dutch Creek and Squaconning Creek. Dutch Creek is entirely inundated by Saginaw Bay elevations. On the Dutch Creek profile, use a constant 100-year elevation of 585.7 ft. and a constant 500-year elevation of 586.7 feet. For Squaconning Creek, the Saginaw Bay elevation still extends to N.B. I-75, however, the 100- and 500-year Bay elevations are as indicated for Dutch Creek. All of the Squaconning Creek study reach is included in the restudy, but not its tributaries. In the floodway data table, the backwater effects should be added for Squaconning Creek at section D.

At Bridgeport Township, two streams were included in the restudy, the Cass River and the Flint River. The existing study shows the Cass River as an approximate study from the downstream Corporate limit to cross section A. It then changes to a detailed study and then back to an approximate study. The downstream approximate area is now considered a detailed area. This is based on a straight line interpolation of the 100-year Green Point elevation of 593.8 ft. at the Corporate boundary with Spaulding Township, to the existing 100-year elevation of 595.0 ft. at cross section A. The 500-year water surface elevation is 596.4 from the downstream Corporate limit to just upstream of cross section D. The upstream approximate study area has not been changed but is included with the restudy. In the southwest corner of the Township, an area is flooded by the Flint River. Based on the Taymouth Township FIS, this area is being converted from an approximate study to a detailed study with a 100-year elevation of 600.5 feet.

Koehler Drain and Cheboyganing Creek in Buena Vista Township are being included in the restudy. Cheboyganing Creek continues to be shown as completely inundated by the Saginaw River. There are no profiles or floodway data tables to be adjusted. Koehler Drain is partly under the influence of the Saginaw River. Its profile should be adjusted to show a Saginaw River backwater effect of 590.0 ft. for the 100-year event and 591.8 ft. for the 500-year event. This will extend the 100-year and 500-year backwater effects to 900 and 1450 ft. upstream of East Washington Road, respectively. The floodway data table should be adjusted to show the above 100-year flood elevation in the "regulatory" column through cross section G. Also, the "without floodway" column should include the number "2" superscript through cross section G. Additionally, Table 2 is no longer appropriate for use in the report.

Carrollton Township includes the Universal Drain, which is tributary to the Saginaw River. From the downstream Corporate limit to Michigan Ave, it is inundated by the Saginaw River. Upstream of Michigan Ave, an elevation of 590.0 ft. should be used. There are no tables or profiles to adjust.

In James Township, the only item in the report that needs to be changed is Table 2. The 100- and 500-year flood elevations for

the Shiawassee River should be shown as 593.8 ft. and 596.4, ft., respectively. The Tittabawassee River is also included, but with no changes.

King Drain and Lull Drain have been effected in the City of Saginaw. King Drain is completely inundated by the Saginaw River. Its floodway data table needs to show a value of 593.8 ft. in the "regulatory" column. Also its profile should be adjusted to show constant 100- and 500-year profiles of 593.8 ft. and 596.4 ft., respectively. The same values should be shown for Lull Drain, up to 5750 ft. above the mouth. Values of 593.9 ft. in the "regulatory" column of the floodway data table should be changed to 593.8 ft. The limit of backwater effects has not changed within the City of Saginaw for Lull Drain. It should be noted that in the existing report, the floodway data table has two extra values which should be eliminated. They are in the "with floodway" column at the bottom.

One of the streams, the Tittabawassee River is included in the restudy for Saginaw Township. Downstream of Center Road, use a constant elevation for the 100- and 500-year floods of 593.8 ft. and 596.4 ft., respectively. The floodway data table is the old style and does not have a "regulatory" column to adjust. Cross section A is considered to be in the backwater effect of Shiawassee Flats.

The last community included in this section of the report is Spaulding Township. Streams included are the Cass, Flint and Shiawassee Rivers, Birch Run, and Cole Drain. No change is being made to Cole Drain. On the Cass River, the flooding is a ponded condition and there is no profile or floodway data table. Change Table 2, "Summary of Elevations", so that the 100- and 500-year elevations are 593.8 ft. and 596.4 ft. respectively. The Shiawassee River was shown as an approximate study. Based on the James Township study, it should be converted to a detailed study with constant 100- and 500-year elevations of 593.8 ft. and 596.4 ft., respectively. The Flint River and Birch Run are also approximate studies. These should be changed to detailed based on the James and Taymouth Township studies. The flow becomes strongly two-dimensional in this area. The following elevations should be used: For the Flint River, from the Shiawassee River to the bifurcation at Cole Ditch, use constant elevations for the 100- and 500-year floods of 593.8 ft. and 596.4 ft., respectively. Using linear interpolation, the Flint River at the 100-year flood would have an elevation of 594.5 ft. at Cresswell Road, 596.1 ft. at the section line between sections 34 and 35 and 597.6 ft. at the upstream Corporate limit. Birch Run would use a constant elevation for the 100- and 500-year floods of 593.8 ft. and 596.4 ft., respectively from Ferguson Bayou to Moore Road. Using linear interpolation, Birch Run at the 100-year flood would have an elevation of 595.3 at Curtis Road, 597.6 at M-13 and 599.5 at Sheridan Road.

Of the 13 communities included in this study, Frankenlust Township, Bridgeport Township, Saginaw Township and Buena Vista Township have streams not influenced by the Saginaw River and not included in the restudy digital files. The streams include an unnamed tributary in Saginaw Township, Gage Drain in Buena Vista Township, King and Lull Drains in Bridgeport Township and Klaus, Kochville, Frankenlust, Schmidt and the West Branch of the Squaconning Drains in Frankenlust Township. All of these streams will be transmitted with the remapped digital files.

Mapping used in the restudy for flood plain delineation and as base maps came from three sources. These are U.S.G.S. quadrangle maps (both digital without contours and paper copies with contours) and two sets of aerial photography taken for the U.S. Army Corps of Engineers, Detroit District, as part of two previous studies. All base maps have been placed on the U.S.G.S. quadrangle digital map files. Since the Corps aerial photography is incomplete for the study area, flood plain delineation is based on a combination of the photography and U.S.G.S. quadrangle maps. All U.S.G.S. maps are 7.5 minute quadrangles, at a scale of 1:24000 and 5 feet contour interval. All Corps maps are at a scale of 1:2400 and 2 feet contour interval. The maps used are listed below by community.

Community	Base Map Name	Base Map Date	Corps Photo Date	Coverage
Township of Carrollton	Saginaw, Mi.	1967, photo-revised 1973	June 1987	Complete
City of Zilwaukee	Saginaw, Mi.	1967, photo-revised 1973	June 1987	Complete
Township of Zilwaukee	Saginaw, Mi.	1967, photo-revised 1973	June 1987	Partial
	Bay City, Mi.	1967, photo-revised 1973		
City of Bay City	Bay City, Mi.	1967, photo-revised 1973	June 1987	Partial
	Essexville, Mi.	1967, photo-revised 1973		
Township of Bangor	Kawkawlin, Mi	1967, photo-revised 1973	June 1987	Partial
	Bay City, Mi.	1967, photo-revised 1973		
Township of Saginaw	Shields, Mi.	1975	Jan. 1983	Partial
	Saginaw, Mi.	1967, photo-revised 1973		

Community	Base Map Name	Base Map Date	Corps Photo Date	Coverage
Township of James	Shields, Mi.	1975	Jan. 1983	Partial
	Alicia, Mi.	1975	Dec. 1982	
	Saginaw, Mi.	1967, photo-revised 1973		
Township of Buena Vista	Saginaw NE Mi.	1967, photo-revised 1973	Jan. 1983	Partial
	Essexville, Mi.	1967, photo-revised 1973		
City of Saginaw	Saginaw, Mi.	1967, photo-revised 1973	Jan. 1983	Partial
Township of Spaulding	Bridgeport, Mi.	1967, photo-revised 1973	Jan. 1983	Partial
	Alicia, Mi.	1975	Dec. 1982	
Township of Bridgeport	Bridgeport, Mi.	1967, photo-revised 1973	Dec. 1982	Partial
	Birch Run North, Mi.	1967, photo-revised 1973		
Township of Portsmouth	Bay City, Mi.	1967, photo-revised 1973	None	
	Essexville, Mi.	1967, photo-revised 1973		
Township of Frankenlust	Bay City, Mi.	1967, photo-revised 1973	None	

There are a number of new references that should be added to the reports and there are also some references that should be deleted. It is not being attempted to specify every single change in each restudied community that should be made. Rather a combination of some guidelines and specific changes will be indicated. Below, a number of references are listed and a number is used to identify that reference. After that section, a list of the communities will follow and a list of numbers will follow the community name. The number will correspond to the number associated with the references. Following that will be additional information on changes to the references.

1. U.S. Army Corps of Engineers, Detroit District, Great Lakes Wave Runup Methodology Study, June 1989.

2. U.S. Army Corps of Engineers, Detroit District, Phase I, Revised Report on Great Lakes Open-Coast Flood Levels, April 1988.

3. U.S. Army Corps of Engineers Waterways Experiment Station, Vicksburg, MS, Donald T. Resio and Charles L. Vincent, Design Wave Information for the Great Lakes, Report 4, September 1977.

4. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Visksburg, MS, Stephen A. Hughes, The TMA Shallow-Water Spectra Description and Applications, December 1984.

5. _____, Hydrologic Engineering Center, HEC-2 Water-Surface Profiles, Generalized Computer Program, Davis, California, September 1988, Updated June 1990.

6. U.S. Army Corps of Engineers, Detroit District, Technical Letter Report for Bangor Township, Michigan, dated January 1992.

7. U.S. Army Corps of Engineers, Detroit District, Flood Levels Report - Saginaw Bay, September 1989.

Community	References
Bangor Township, Mi.	1,2,3,4,5,6,7
Frankenlust Township, Mi.	2,5,7
Portsmouth Township, Mi.	2.5,7
City of Bay City, Mi.	2,5,7
Buena Vista Township, Mi.	7
Township of Carrollton, Mi.	7
City of Zilwaukee, Mi.	7
Zilwaukee Township, Mi.	7
Bridgeport Township, Mi.	none
James Township, Mi.	none
City of Saginaw, Mi.	7
Saginaw Township, Mi.	none
Spaulding Township, Mi.	none

For the communities of the City of Zilwaukee, Zilwaukee Township, the City of Bay City and Portsmouth Township, any reference to earlier versions of HEC-2 should be eliminated. References to earlier versions of the Great Lakes Open-Coast Reports or associated information should be eliminated for Bangor Township, Frankenlust Township, Portsmouth Township and the City of Bay City. For the same communities, references to earlier Saginaw Bay Flood Levels and associated reports should be eliminated. Finally, for the section of the FIS that discusses "OTHER STUDIES", the reports for these 13 communities should be referenced as appropriate.

In the Community of James Townships, there are a number of elevation references marks to be added by this study. These are listed below and correspond to the numbers on the digital work map and in the original survey notes. The original James Township FIS did not have any Elevation Reference Marks.

ELEVATION REFERENCE MARKS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 1	597.42	A spike in the northeast face of a power pole, at underground telephone box #5175 on the south side of Stroebel Road, 0.2 miles west of the intersection of Center and Stroebel Roads.
RM 2	596.65	A chiseled "+" on the top of flange bolt on the northeast side of fire hydrant, on the north side of Stroebel Road, 0.35 miles northwest of the intersection of Center and Stroebel Roads.
RM 3	593.46	A spike in the north face of a power pole on the south side of Stroebel Road, 0.75 miles northwest of the intersection of Center and Stroebel Roads.
RM 4	595.44	Top of pipe in hand hole, at the intersection of Weigl and Stroebel Roads
RM 5	597.61	A chiseled "+" on the top of flange bolt on the northeast side of fire hydrant, on the north side of Stroebel Road, 170 feet northwest of the intersection of Stroebel Road and Conrail Railroad.
RM 6	595.83	A chiseled "+" on the top of flange bolt on the southeast side of fire hydrant, at the intersection of Stroebel and Dutch Roads.
RM 7	589.45	A spike in the south face of a power pole, on the north side of Dutch Road and at a ditch, 0.2 miles west of Stroebel Road.
RM 8	597.15	A chiseled "+" on the top of flange bolt on the west side of fire hydrant, at the southwest corner of Dutch and South River Roads.
RM 9	597.46	A chiseled "+" on the top of flange bolt on the west side of fire hydrant, at the southwest corner of Terry and South River Roads.
RM 10	592.49	A spike in the west face of a power pole, at the northeast corner of Center and Stroebel Roads.

ELEVATION REFERENCE MARKS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 11	600.48	A chiseled "+" on the top of flange bolt on the north side of fire hydrant, at the northwest corner of South River and Trinklein Roads.
RM 12	593.62	A spike in the south face of a power pole, at the northeast corner of Parish and Trinklein Roads.
RM 13	591.79	A chiseled "+" on the top of flange bolt on the north side of fire hydrant, on the north side of Trinklein Road, 2600 feet west of South River Road.
RM 14	592.94	A chiseled "+" on the top of flange bolt on the north side of fire hydrant, on the north side of Trinklein Road, 1300 feet east of Miller Road.
RM 15	595.96	A nail in the southwest face of power pole #165, on the northeast corner of of Miller and Trinklein Roads.
RM 16	595.53	A chiseled "+" on the top of flange bolt on the east side of fire hydrant, on the east side of Miller Road, 1300 feet south of Trinklein Road.
RM 17	593.99	Top of iron rod in hand hole, in the intersection of Miller and Swan Creek Roads. Section Corner 2,1,11,12.
RM 18	595.96	A chiseled "+" on the top of flange bolt on the east side of fire hydrant, on the east Miller Road, 1300 feet south of Swan Creek Road.
RM 19	595.90	A spike in a power pole, at the northeast corner of South River and Swan Creek Roads.
RM 20	593.22	A chiseled "x" on the top of flange bolt on the southeast side of fire hydrant, on the northeast corner of Miller and Hart Roads.

ELEVATION REFERENCE MARKS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 21	595.85	A chiseled "+" on the top of flange bolt on the east side of fire hydrant, on the east side of Miller Road, 1300 feet north of Trinklein Road.
RM 22	595.04	A chiseled "+" on the top of flange bolt on the south side of fire hydrant, on the southeast corner of Ederer and Miller Roads.
RM 23	602.11	A chiseled "+" on the top of flange bolt on the south side of fire hydrant, on the southeast corner of Ederer and Jarabec Roads.
RM 24	603.93	A chiseled "+" on the top of flange bolt on the south side of fire hydrant, on the south side of Ederer Road, 1300 feet east of Van Wormer Road.
RM 25	594.42	A chiseled "+" on the top of flange bolt on the south side of fire hydrant, on on the southeast corner of Ederer and Van Wormer Roads.
RM 26	595.87	A chiseled "+" on the top of flange bolt on the east side of fire hydrant, on the east side of Van Wormer Road, 2600 feet south of Ederer Road.
RM 27	593.95	A spike in the north face of a power, telephone pole, at the southwest corner of Van Wormer and Swan Creek roads.
RM 28	595.58	A spike in the south face of a telephone and cable TV pole, # 264, on the south side of Swan Creek Road, 1/2 mile east of Van Wormer Road.
RM 31	593.42	A spike in the northeast face of a power pole, at the northeast corner of Weigl and Swan Creek Roads.
RM 32	594.15	A spike in the face of a power pole at the northwest corner of Swan Creek and Willing Roads.

ELEVATION REFERENCE MARKS

Reference Mark	Elevation (feet NGVD)	Description of Location
RM 33	590.34	A chiseled "x" on the top of a steel curb anchor bolt, at the southwest of bridge, near the southeast corner of Section 23, T11N, R3E.

TECHNICAL LETTER REPORT ON WAVE RUNUP COMPUTATIONS BANGOR TOWNSHIP, MICHIGAN

Prepared by the U.S. Army Corps of Engineers
for the Federal Emergency Management Agency

Detroit, Michigan
January 1992

TECHNICAL LETTER REPORT ON
BANGOR TOWNSHIP, MICHIGAN

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TECHNICAL LETTER REPORT ON
BANGOR TOWNSHIP, MICHIGAN

1.0 INTRODUCTION

1.1 Purpose of Study

This technical letter report presents the results of the revised hydraulic analysis for three sites located in Bangor Township (Figure 1) which incorporates the wave runup components associated with the 100-year flood levels, for a revised Flood Insurance Study (FIS).

1.2 Authority and Acknowledgments

The work was conducted under Inter-Agency Work Agreement, EMW-91-E-3525, Project Order No. 2, as amended, between the U. S Army Corps of Engineers (USACE) and the Federal Emergency Management Agency (FEMA).

1.3 Coordination

The USACE September 1989 "Flood Levels Report For Saginaw Bay" (Reference 7), along with examples of the application of the methodology from the 1989 "Great Lakes Wave Runup Methodology Study" (Reference 13), were presented to FEMA on March 1, 1990. The procedures outlined in these references were approved at this meeting for application to all Saginaw Bay FIS sites, including the restudy for Bangor Township. The results of the analysis of coastal flooding was coordinated and approved by the Michigan Department of Natural Resources and the FEMA Region V.

2.0 ENGINEERING METHODS

The hydraulic analyses presented herein involved the computation of the maximum wave runup elevations required for updating the previous study in Bangor Township. Table 1 lists profile locations, and the 100-year and 500-year "base" flood levels at three locations along the Bangor Township shoreline. The base flood levels were taken from the USACE September 1989 "Flood Levels Report For Saginaw Bay". The three profiles were plotted from data obtained from a March 1991 survey.

Input data used for flood calculations include site specific design wave, water depth at the toe of the structure, and wave period. Additional data such as nearshore profiles, high water marks, and existing conditions, bathymetry and topography, may

BANGOR TOWNSHIP LOCATION MAP

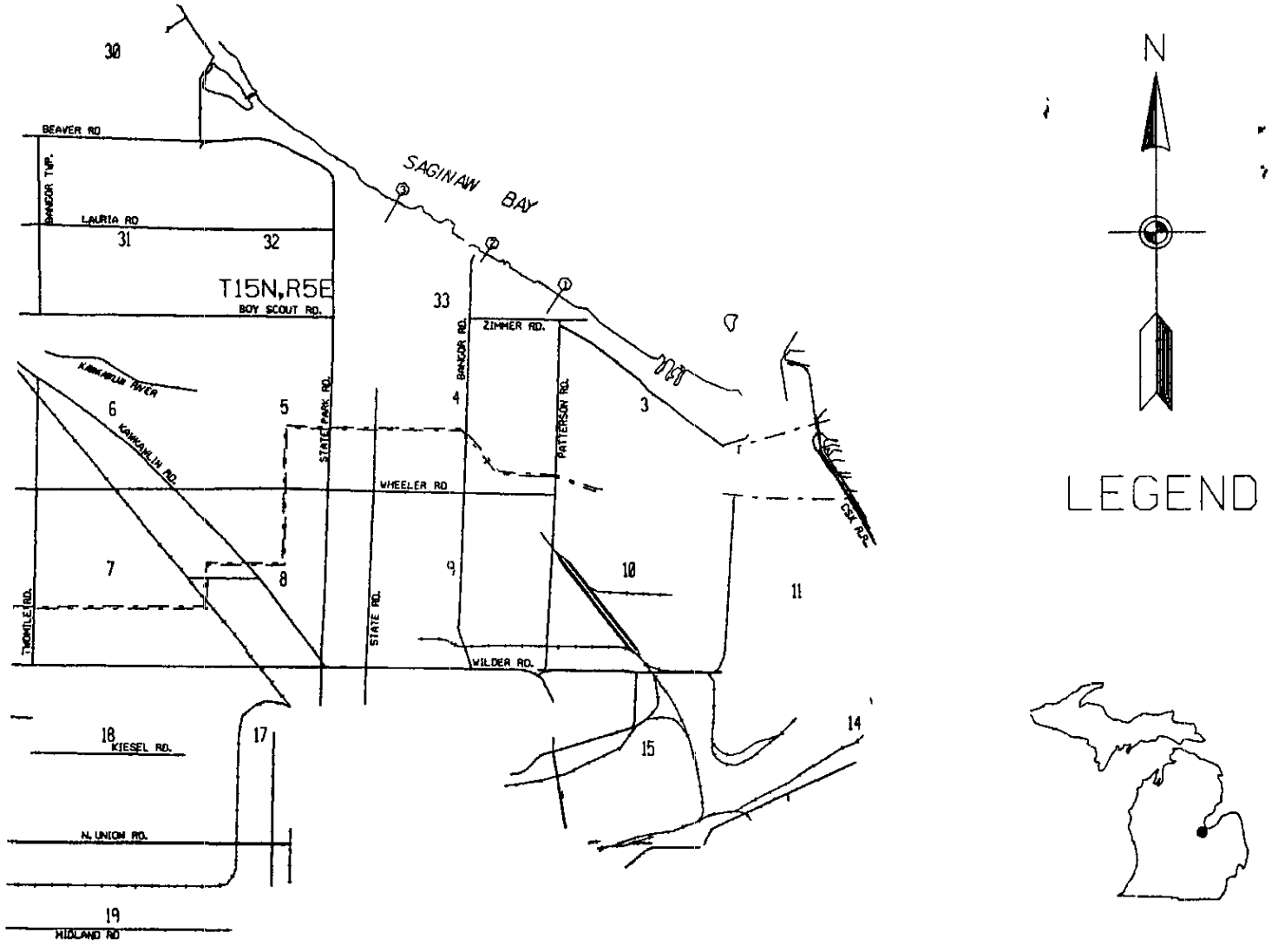


FIGURE 1

SHORELINE PROFILES
BANGOR TOWNSHIP

	Profile Location	100-year Flood Level *	500-year Flood Level *
1.	Bangor-1 (trailer park)	585.7	586.7
2.	Bangor-2 (Donohue Road)	585.7	586.7
3.	Bangor-3 (Lagoon Beach)	585.7	586.7

* NOTE: All elevations are in FT, NGVD from the September 1989 " Flood Levels Report for Saginaw Bay"

TABLE 1

also be used to compute the maximum wave runup elevation at each site. However, the existing conditions along the Bangor Township shoreline most closely represented by site Bangor-1 is such that the 100-year flood level of 585.7 ft., NGVD inundates and/or flanks the existing topography and shore protection. Therefore, it was determined that no wave runup calculations would be necessary to delineate these conditions. Accordingly, wave runup was computed for the shoreline in Bangor Township represented by sites Bangor 2 and Bangor-3. Table 2 lists the applicable 100-year wave runup elevations for the three Bangor Township sites. The profile most representative of the average shoreline configuration for each of the three sites is included in Appendix A.

3.0 FLOOD-ZONE DELINEATIONS

The flood zone designations used for this study are similar to those used in riverine studies with the exception of the VE- Zone. Reaches of the Bangor Township shoreline in the surf zone which are subject to significant wave attack are referred to by FEMA as Coastal High Hazard Zones or velocity (VE) Zones.

The VE, AE, AO, and X-Zones for these sites are defined in the Bangor Township FIS main report. These sites have been delineated according to FEMA's 1990 "Guidelines for Great Lakes Wave Runup Computation and Mapping" (Reference 12) and are shown on the attached work maps.

At sites in Bangor Township where the 100-year flood level inundates shoreline property, the inundated area would experience a minimal water depth shoreward of the shoreline protection. This water depth will generate a negligible wave across the property. Therefore, no wave runup was computed and the 100-year flood level will be used to delineate the flood outlines at such sites, in accordance with Reference 12.

4.0 CONCLUSIONS

It is recommended that the wave runup elevations computed for the 100-year flood at the three Bangor Township sites included herein be used by FEMA for updating the Bangor Township FIS.

TABLE 2

WAVE RUNUP ELEVATIONS

Bangor Township FIS Sites	Computed Wave Runup (ft.)	100-year Wave Wave Runup Elevation (ft., NGVD)
1. Bangor-1	0.0	585.7 *
2. Bangor-2	5.8	591.5
3. Bangor-3	2.8	588.5

NOTE: The shore is inundated by 100-year flood, therefore no wave runup was computed.

5.0 REFERENCES

1. U.S. Army Corps of Engineers, Coastal Engineering Research Center, Vicksburg, MS, "Shore Protection Manual," Volumes I & II, 1984.

2. U.S. Army Corps of Engineers, Detroit District, "Phase I, Revised Report on Great Lakes Open-Coast Flood Levels," April 1988.

3. U.S. Army Corps of Engineers, Detroit District, "Phase II, Revised Report on Great Lakes Open-Coast Flood Levels," April 1988.

4. U.S. Army Corps of Engineers, Detroit District, "Appendices, Revised Report on Great Lakes Open-Coast Flood Levels," April 1988.

5. U.S. Army Corps of Engineers, Coordinating Committee on Great Lakes Basin Hydraulic and Hydrologic Data, "History of Water Level Gauges, Upper Great Lakes and the St. Clair - Detroit Rivers," January 1978.

6. U.S. Army Corps of Engineers, North Central Division, "Great Lakes Region Inventory Report National Shoreline Study," August 1978.

7. U.S. Army Corps of Engineers, Detroit District, "Flood Levels Report - Saginaw Bay," September 1989.

8. U.S. Army Corps of Engineers, Detroit District, "Flood Levels Report - Anchor Bay," September 1989.

9. Great Lakes Environmental Research Laboratory, Ann Arbor, Michigan, SCHWAB, D.J., and LYNN, E.W., "Great Lakes Storm Surge Planning Program," 1987.

10. U.S. Army Corps of Engineers, Detroit District, "Phase II Report on Great Lakes Flood Levels - Little Bay De Noc," August 1981.

11. U.S. Army Corps of Engineers, Detroit District, "Phase II Report on Great Lakes Flood Levels - Big Bay De Noc", July 1981.

12. FEMA, "Guidelines for Great Lakes Wave Runup Computation and Mapping", 1990.

13. U.S. Army Corps of Engineers, Detroit District, "Great Lakes Wave Runup Methodology Study," June 1989.

APPENDIX A
TO
TECHNICAL LETTER REPORT ON WAVE RUNUP COMPUTATIONS
BANGOR TOWNSHIP, MICHIGAN

Prepared by the U.S. Army Corps of Engineers
for the Federal Emergency Management Agency

Detroit, Michigan
January 1992

ECL 5

SYNOPSIS

Appendix A outlines the procedures utilized to calculate the wave runup component and the maximum wave runup elevation associated with the 100-year flood level for the Bangor Township shoreline. The following list shows the three Bangor Township sites and the 100-year wave runup flood profiles. Computations of these elevations are included in this Appendix.

Bangor Township FIS Sites	Computed Wave Runup (ft.)	100-year Wave Wave Runup Elevation (ft., NGVD)
1. Bangor-1	0.0	585.7 *
2. Bangor-2	5.8	591.5
3. Bangor-3	2.8	588.5

FIS PROFILE
BANGOR 1

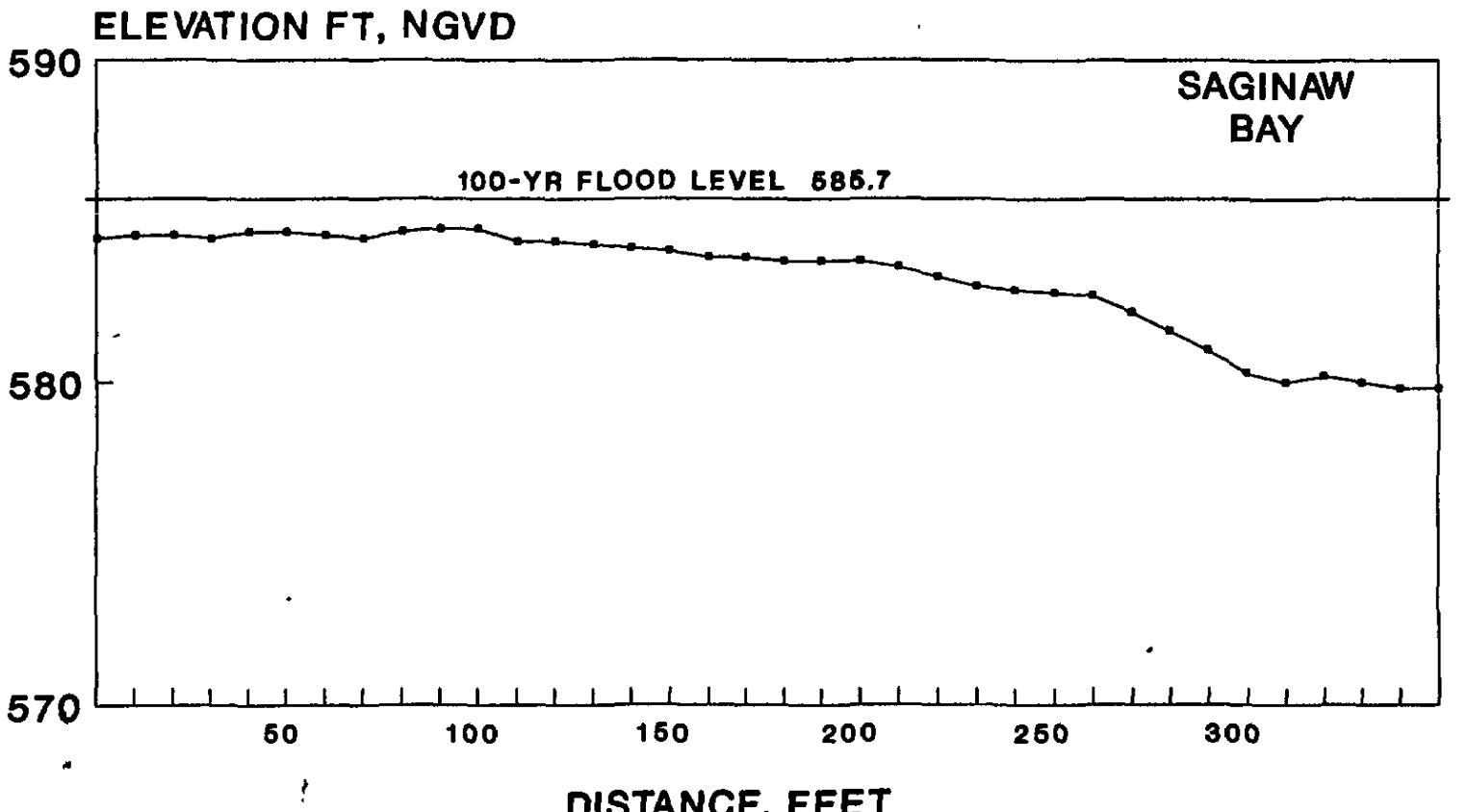
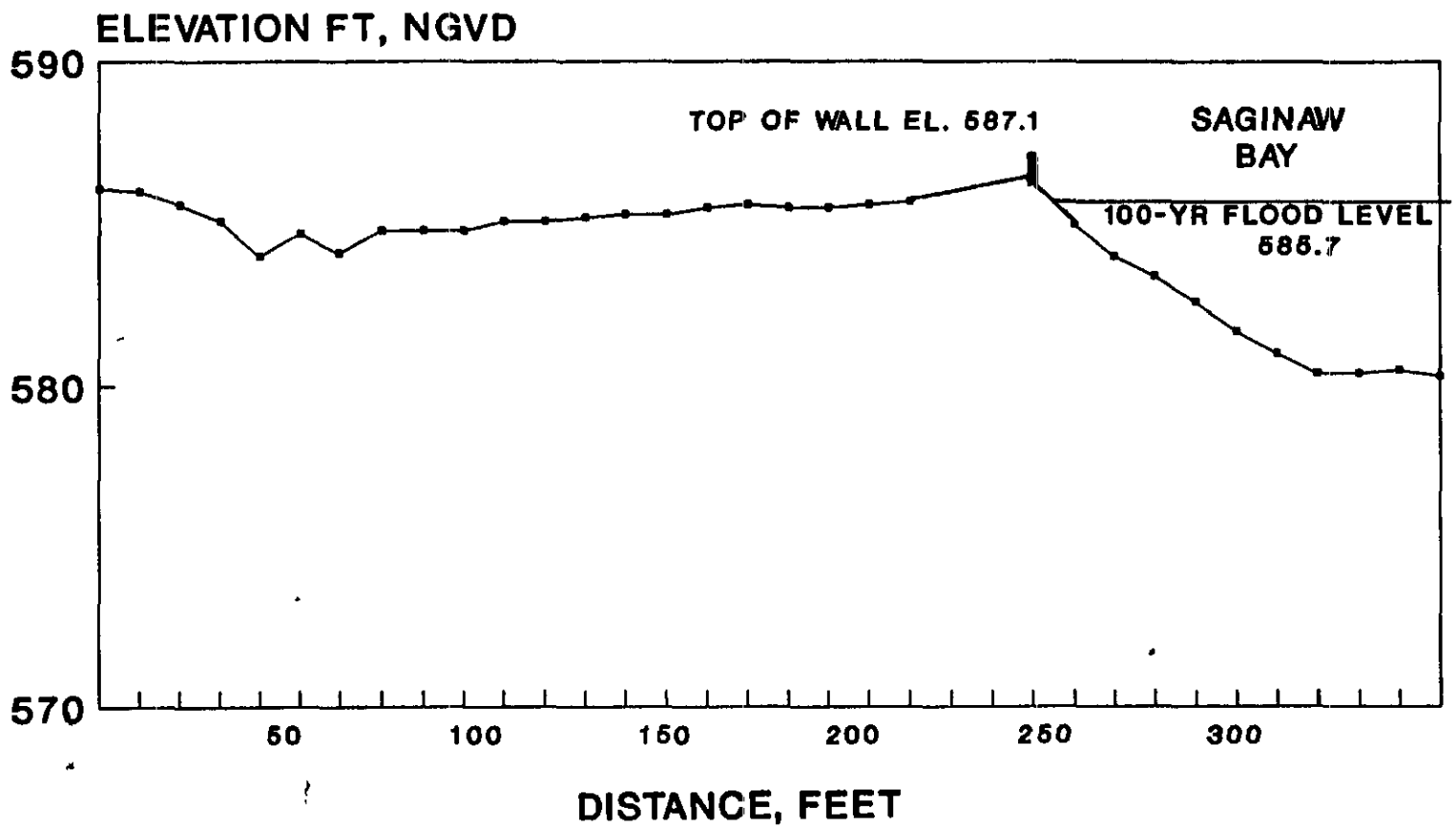


Figure BG-1

RUNUP COMPUTATION
WAVE RUNUP AT BANGOR TOWNSHIP, BANGOR-1

NOTE: SHORE INUNDATED BY 100-YEAR FLOOD, THEREFORE NO WAVE RUNUP WAS COMPUTED.

FIS PROFILE
BANGOR 2



RUNUP COMPUTATION

WAVE RUNUP FOR BANGOR TOWNSHIP BANGOR-2

runup on:	beach
100-year flood:	585.7
water depth at toe:	26.0
100-year wave period T:	11.4
T':	5.7
L:	329.59
100-yr deep water wave H:	24.9
K:	2.0
alpha:	0.0110
Hmo:	11.0
d bar:	0.0062
epsilon:	0.0083
Hs/Hmo:	1.018
Hs in deep water:	11.2
beach slope:	0.07000
beach (Greek ltr) xi:	0.540
beach runup:	5.8
runup elevation:	591.5

FIS PROFILE
BANGOR 3

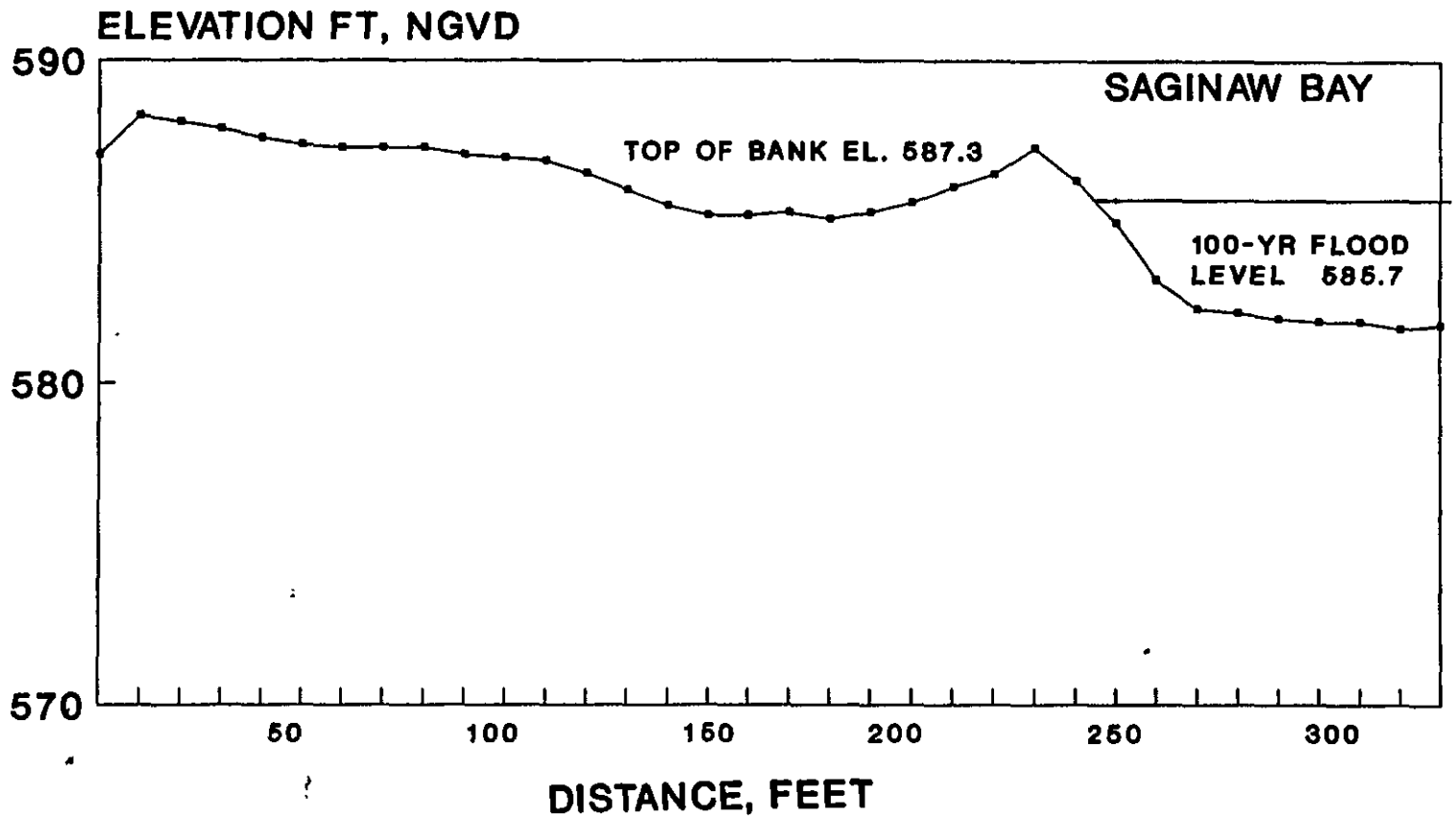


FIGURE BG-3

RUNUP COMPUTATION

WAVE RUNUP FOR BANGOR TOWNSHIP BANGOR-3

runup on:	beach
100-year flood:	585.7
water depth at toe:	26.0
100-year wave period T:	11.4
T':	5.7
L:	329.59
100-yr deep water wave H:	24.9
K:	2.0
alpha:	0.0110
Hmo:	11.0
d bar:	0.0062
epsilon:	0.0083
Hs/Hmo:	1.018
Hs in deep water:	11.2
beach slope:	0.03333
beach (Greek ltr) xi:	0.257
beach runup:	2.8
runup elevation:	588.5

8.0 DEFINITION OF TERMS

SYMBOL	DEFINITION
a	Wave transmission coefficient
b	Wave transmission coefficient
d	Relative depth (ft.)
n	Surf parameter
e	Significant wave steepness
f'	Frequency (sec.)
g	Gravitational constant (ft./sec^2)
H_i	Incident wave height (ft.)
H_o,	Unrefracted deepwater wave height (ft.)
H_{mo}	Zero-moment wave height (ft.)
H_s	Average height of the 1/3 highest waves (ft.)
k	Dimensionless wave number
L_m	Wavelength (ft.)
L_o	Deepwater wavelength (ft.)
h	Structure slope (degrees)
R	Wave runup (ft.)
T'	Wave period (sec.)
T_m	Spectral peak period (sec.)
a	Spectral parameter

BANGOR, TOWNSHIP
MICHIGAN

TRANSECT LOCATION MAP

CROSS SECTION WORKMAP/COMM	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ.FT)	MEAN VELOCITY (FT/SEC)	REGULATORY FEET (NGVD)	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY FEET (NGVD)	INCREASE (FEET)
SAGINAW RIVER at Bangor Twp.								
A	0.023	1297/660[2]	16826	3.9	585.7	579.3[3]	579.4	0.1
B	0.335	1016/560[2]	14930	4.4	585.7	579.6[3]	579.7	0.1
C	1.189	1520/730[2]	16050	4.1	585.7	580.4[3]	580.5	0.1
D	1.761	687/380[2]	12886	5.1	585.7	580.9[3]	581.0	0.1
E	2.223	774/360[2]	13951	4.7	585.7	581.3[3]	581.4	0.1
F	2.576	733/435[2]	16265	4.1	585.7	581.6[3]	581.7	0.1
G	2.809	683/470[2]	13607	4.9	585.7	581.6[3]	581.7	0.1
H	2.947	1080/520[2]	17472	3.8	585.7	581.9[3]	582.0	0.1
I	3.350	1134/620[2]	16230	4.1	585.7	582.1[3]	582.2	0.1
SAGINAW RIVER at Bay City								
H/A	2.947	1080/560[2]	17472	3.8	585.7	581.9[3]	582.0	0.1
I/B	3.350	1134/514[2]	16230	4.1	585.7	582.1[3]	582.2	0.1
J/C	3.601	669	12799	5.2	585.7	582.1[3]	582.2	0.1
K/D	3.646	744	15452	4.3	585.7	582.3[3]	582.3	0.0
L/E	3.690	603	13236	5.0	585.7	582.2[3]	582.3	0.1
M/F	4.366	763	16231	4.1	585.7	582.7[3]	582.7	0.0
N/G	4.678	657	13814	4.8	585.7	582.8[3]	582.8	0.0
O/H	4.835	822	17347	3.8	585.7	583.0[3]	583.0	0.0
P/I	4.968	807	14257	4.6	585.7	583.0[3]	583.0	0.0

[1]Mile Above Mouth
[2]Total Width/Width Within Corporate Limit
[3]Elevation Without Consideration of Backwater From Saginaw Bay
[4]Does not include the Designated Floodway West of Middle Ground Island

	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ.FT)	MEAN VELOCITY (FT/SEC)	REGULATORY FEET (NGVD)	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY FEET (NGVD)	INCREASE (FEET)
SAGINAW RIVER at Bay City								
Q/J	5.152	732	14669	4.5	585.7	583.1[3]	583.1	0.0
R/K	5.326	597	11262	5.9	585.7	583.0[3]	583.0	0.0
S/L	5.905	1164	15304	4.3	585.7	583.7[3]	583.7	0.0
T/M	6.222	579[4]	11429	5.0	585.7	583.9[3]	583.9	0.0
U/N	6.520	447[4]	9209	6.3	585.7	583.9[3]	583.9	0.0
V/O	7.016	730[4]	12965	4.4	585.7	584.5[3]	584.5	0.0
W/P	7.567	658[4]	14601	3.9	585.7	584.9[3]	584.9	0.0
X/Q	8.099	520/150[4]	12319	4.7	585.7	585.1[3]	585.1	0.0
Y/R	8.241	913/80	16495	4.0	585.7	585.2[3]	585.2	0.0
Z/S	9.079	1725/1200	19836	3.4	585.8	585.8	585.8	0.0
AA/T	9.584	1580/975	17637	3.8	586.1	586.1	586.1	0.0
SAGINAW RIVER at Frankenlust Twp.								
W/A	7.567	658/0[4]	14601	3.9	585.7	584.9[3]	584.9	0.0
X/B	8.099	520/370[4]	12319	4.7	585.7	585.1[3]	585.1	0.0
Y/C	8.241	913/833	16495	4.0	585.7	585.2[3]	585.2	0.0
Z/D	9.079	1725/525	19836	3.4	585.8	585.8	585.8	0.0
AA/E	9.584	1580/605	17637	3.8	586.1	586.1	586.1	0.0
AB/F	10.240	2275/1836	24760	2.7	586.5	586.5	586.6	0.1
AC/G	10.993	991/456	16221	4.2	586.7	586.7	586.8	0.1

[1]Mile Above Mouth
[2]Total Width/Width Within Corporate Limit
[3]Elevation Without Consideration of Backwater From Saginaw Bay
[4]Does not include the Designated Floodway West of Middle Ground Island

CROSS SECTION WORKMAP/COMM	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ.FT)	MEAN VELOCITY (FT/SEC)	REGULATORY FEET (NGVD)	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY FEET (NGVD)	INCREASE (FEET)
SAGINAW RIVER at Portsmouth Twp.								
AB/A	10.240	2275/439	24760	2.7	586.5	586.5	586.6	0.1
AC/B	10.993	991/535	16221	4.2	586.7	586.7	586.8	0.1
SAGINAW RIVER at Zilwaukee Twp.								
AD/A	11.802	923	14252	4.8	587.2	587.2	587.3	0.1
AE/B	12.569	1416	20955	3.3	587.8	587.8	587.9	0.1
AF/C	13.249	1085	15405	4.4	588.0	588.0	588.1	0.1
AG/D	13.747	1195/710	17540	3.9	588.3	588.3	588.4	0.1
AH/E	14.385	537/257	14224	4.8	588.6	588.6	588.7	0.1
AI/F	14.407	540/260	10764	6.4	588.3	588.3	588.4	0.1
SAGINAW RIVER at Zilwaukee City								
AG/A	13.747	1195/485	17540	3.9	588.3	588.3	588.4	0.1
AH/B	14.385	537/280	14224	4.8	588.6	588.6	588.7	0.1
AI/C	14.407	540/280	10764	6.4	588.3	588.3	588.4	0.1
AJ/D	15.156	713/395	15498	4.4	589.1	589.1	589.2	0.1
SAGINAW RIVER at Buena Vista Twp.								
AJ/A	15.156	713/318	15498	4.4	589.1	589.1	589.2	0.1

[1]Mile Above Mouth
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[4]Does not include the Designated Floodway West of Middle Ground Island

CROSS SECTION WORKMAP/COMM	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ.FT)	MEAN VELOCITY (FT/SEC)	REGULATORY FEET (NGVD)	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY FEET (NGVD)	INCREASE (FEET)
SAGINAW RIVER at Carrollton Twp.								
AK/A	15.612	545/295	13361	5.1	589.3	589.3	589.4	0.1
AL/B	16.169	1009/800	14687	4.7	589.7	589.7	589.8	0.1
AM/C	16.500	659/445	16294	4.2	589.9	589.9	590.0	0.1
AN/D	16.758	447/242	14365	4.7	590.0	590.0	590.1	0.1
AO/E	16.776	561/281	12181	5.6	589.9	589.9	590.0	0.1
AP/F	17.282	592/340	14446	4.7	590.3	590.3	590.4	0.1
SAGINAW RIVER at Saginaw City								
AK/A	15.612	545/250	13361	5.1	589.3	589.3	589.4	0.1
AL/B	16.169	1009/209	14687	4.7	589.7	589.7	589.8	0.1
AM/C	16.500	659/214	16294	4.2	589.9	589.9	590.0	0.1
AN/D	16.758	447/205	14365	4.7	590.0	590.0	590.1	0.1
AO/E	16.776	561/280	12181	5.6	589.9	589.9	590.0	0.1
AP/F	17.282	592/252	14446	4.7	590.3	590.3	590.4	0.1
AQ/G	17.758	450	12384	5.5	590.5	590.5	590.6	0.1
AR/H	17.791	732	15750	4.3	590.7	590.7	590.8	0.1
AS/I	18.134	560	13585	5.0	590.8	590.8	590.9	0.1
AT/J	18.161	531	12616	5.4	590.7	590.7	590.8	0.1
AU/K	18.268	518	12345	5.5	590.8	590.8	590.9	0.1
AV/L	18.335	430	12428	5.5	590.9	590.9	591.0	0.1
AW/M	18.431	441	10255	6.6	590.8	590.8	590.9	0.1

[1]Mile Above Mouth
[2]Total Width/Width Within Corporate Limit
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[4]Does not include the Designated Floodway West of Middle Ground Island

CROSS SECTION WORKMAP/COMM	DISTANCE[1]	WIDTH[2] (FEET)	SECTION AREA (SQ.FT)	MEAN VELOCITY (FT/SEC)	REGULATORY FEET (NGVD)	WITHOUT FLOODWAY FEET (NGVD)	WITH FLOODWAY FEET (NGVD)	INCREASE (FEET)
SAGINAW RIVER at Saginaw City								
AX/N	18.598	435	11431	5.9	591.1	591.1	591.2	0.1
AY/O	18.871	460	12171	5.6	591.3	591.3	591.4	0.1
AZ/P	18.939	550	11467	5.9	591.3	591.3	591.4	0.1
BA/Q	19.432	510	11830	5.7	591.7	591.7	591.8	0.1
BB/R	19.463	575	12717	5.3	591.9	591.9	592.0	0.1
BC/S	20.116	510	10866	6.3	592.2	592.2	592.3	0.1
BD/T	20.287	690	15073	4.5	592.6	592.6	592.7	0.1
BE/U	20.514	620	13228	5.1	592.7	592.7	592.8	0.1
BF/V	21.059	598	13502	5.0	593.0	593.0	593.1	0.1
BG/W	21.093	782	15125	4.5	593.1	593.1	593.2	0.1
BH/X	21.722	1500	21743	3.1	593.6	593.6	593.6	0.0
BI/Y	22.186	1900	24735	2.7	593.8	593.8	593.8	0.0

[1]Mile Above Mouth
[2]Total Width/Width Within Corporate Limit
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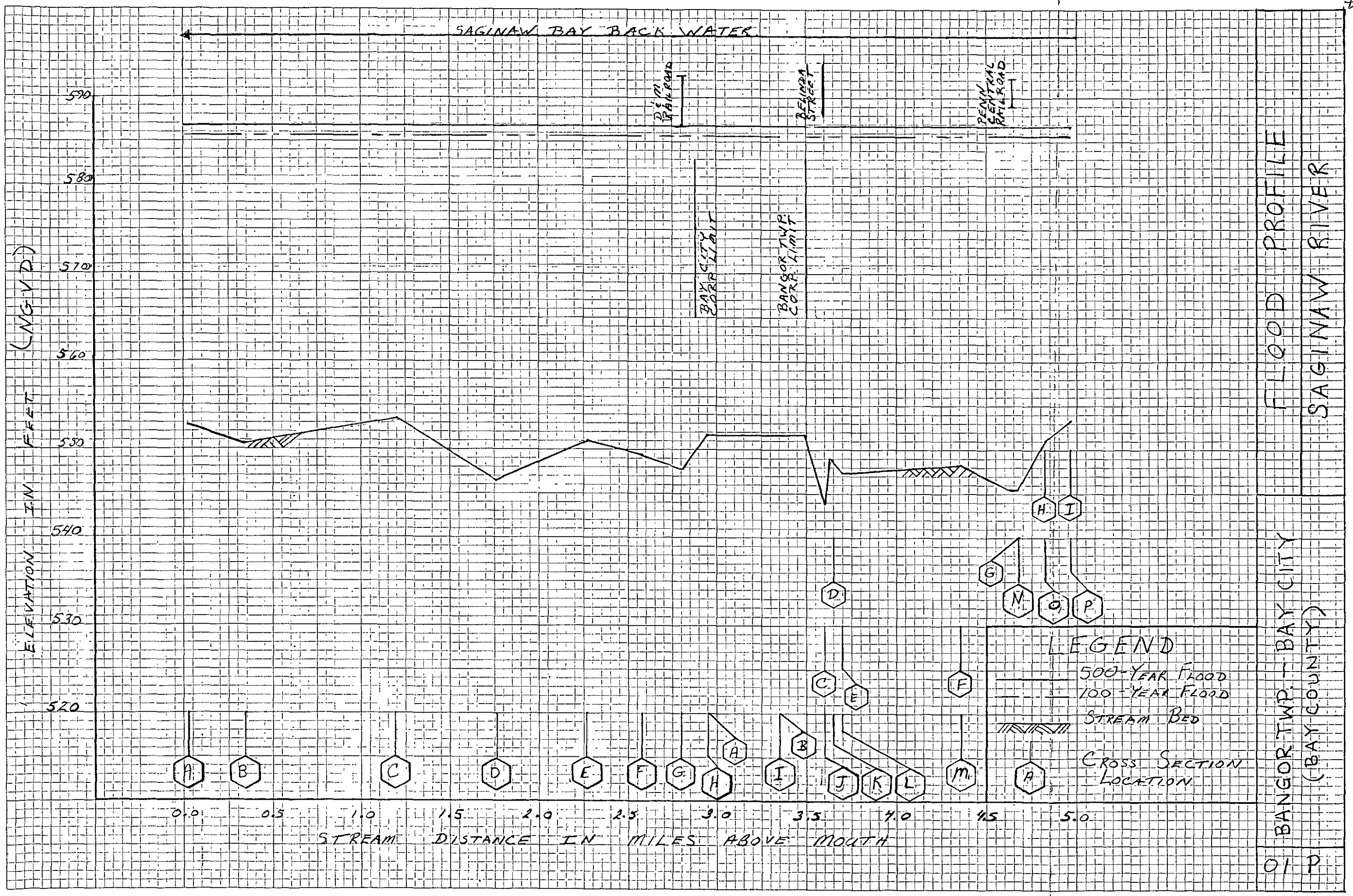

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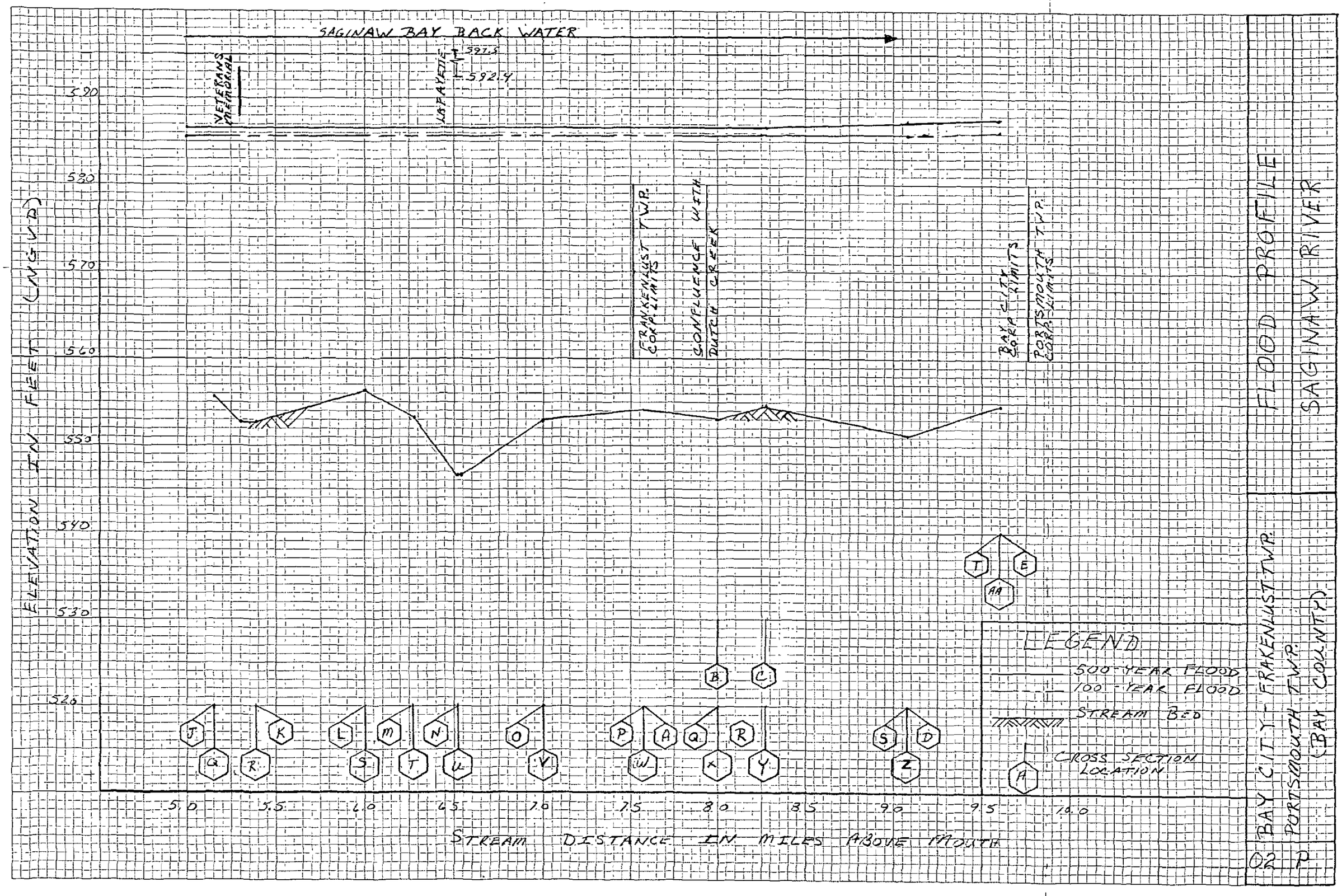

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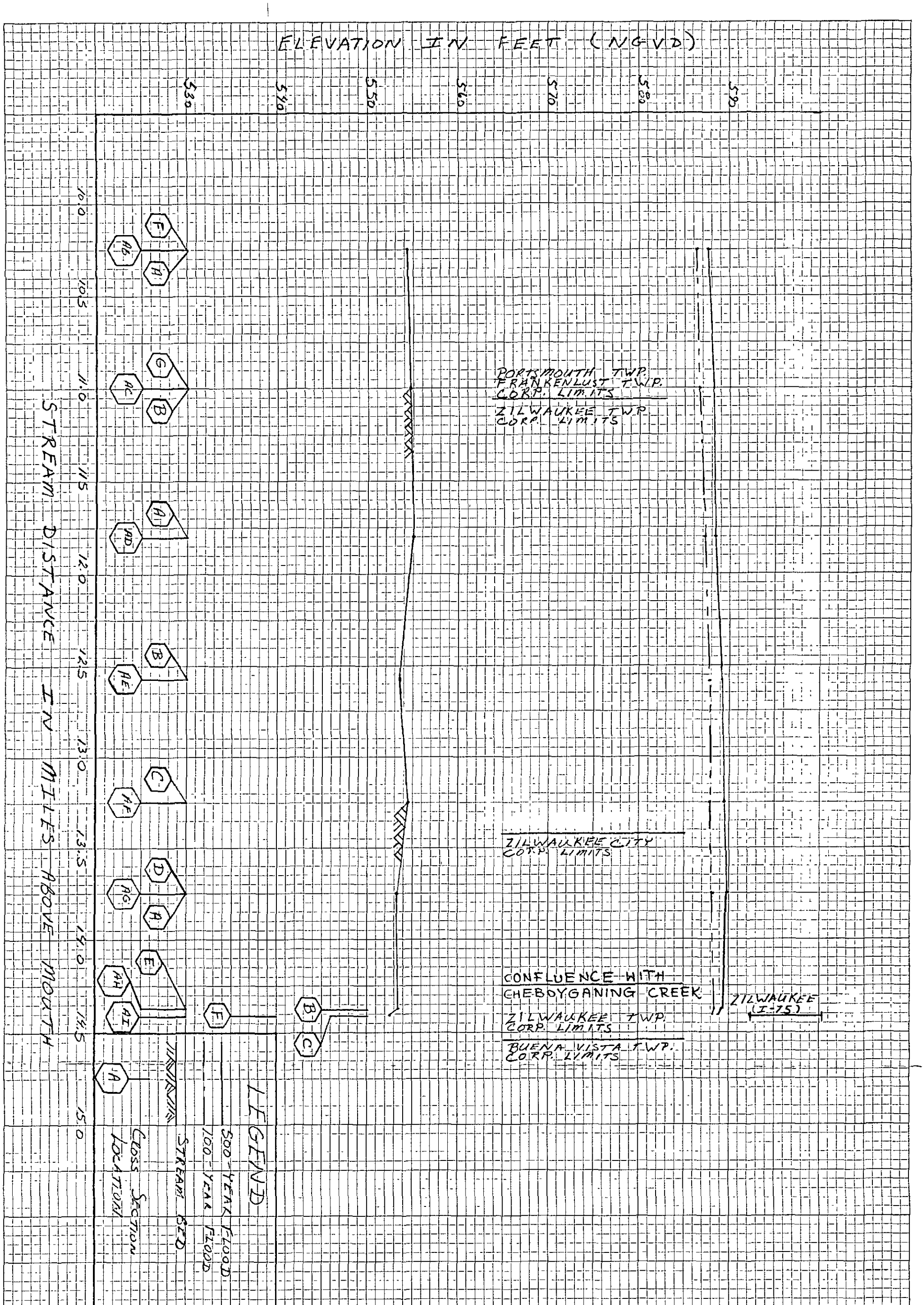
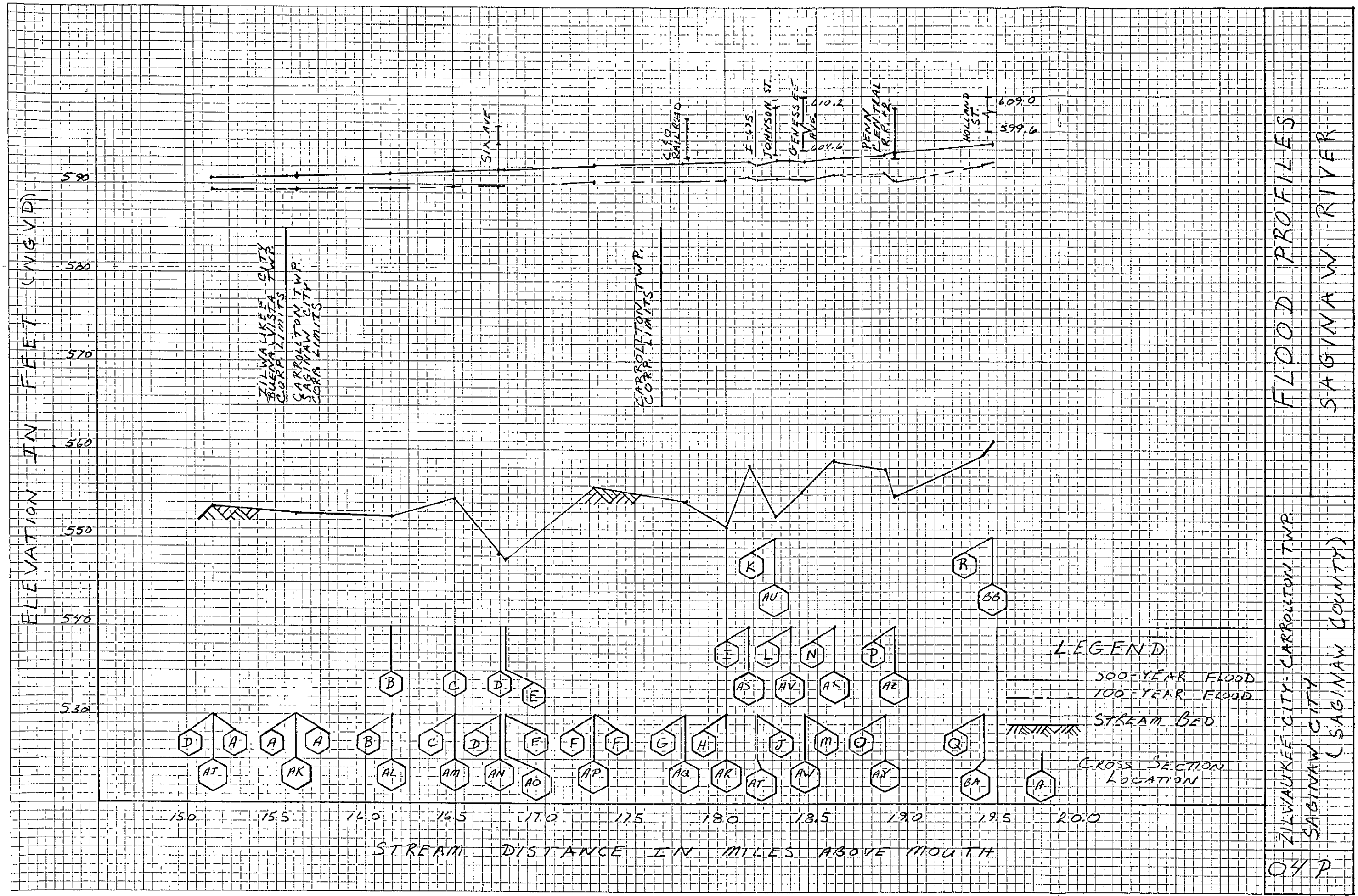


03P	PORTSMOUTH TWP.-FRAKENLUST TWP. ZILWAUKEE TWP.-ZILWAUKEE CITY (BAY COUNTY - SAGINAW COUNTY)	FLOOD PROFILE SAGINAW RIVER



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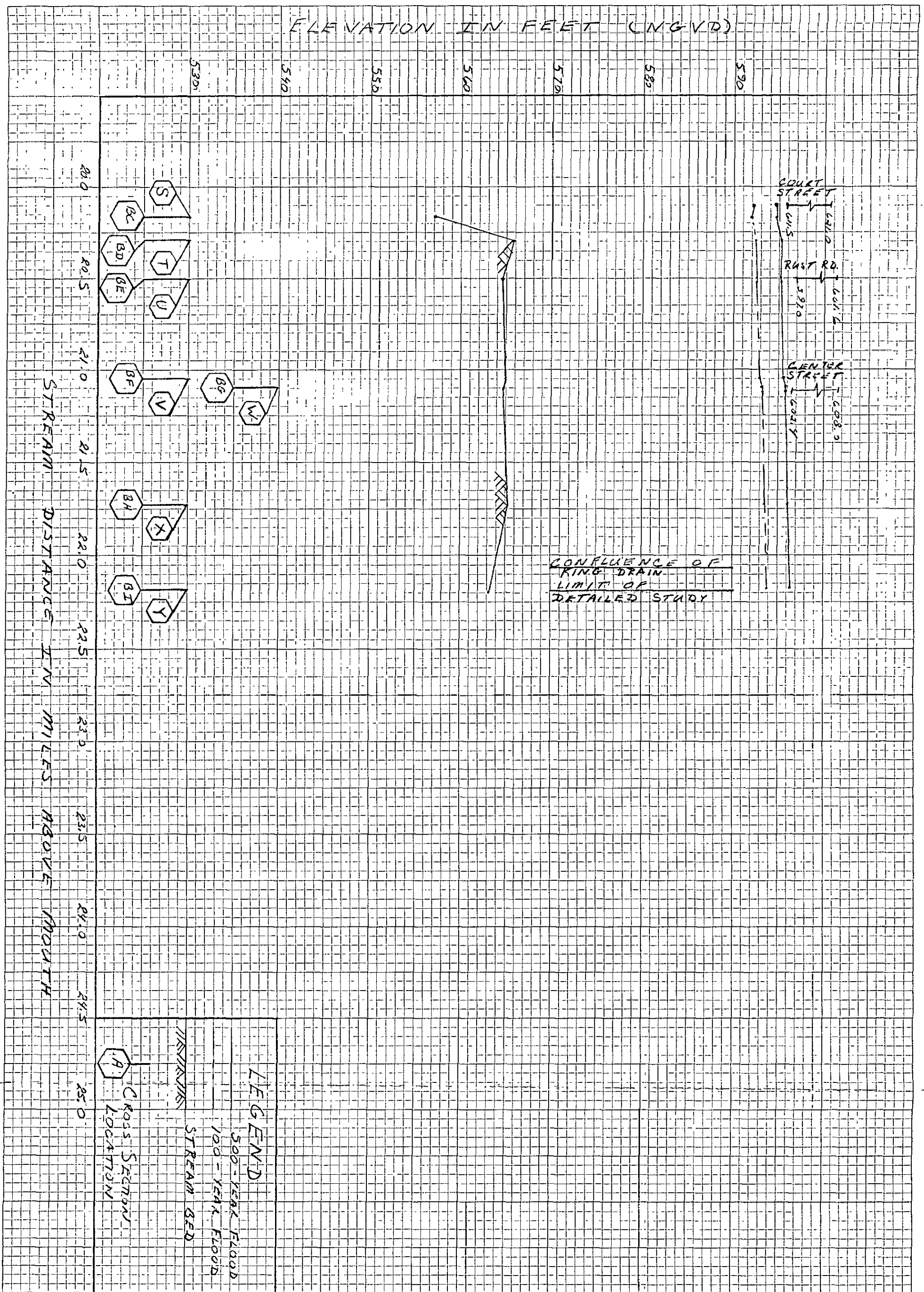

FLOOD PROFILES

SAGINAW RIVER

SAGINAW CITY
(SAGINAW COUNTY)

05 P

NO 341D 10 DIETZGEN GRAPH PAPER
10 X 10 PER INCH

DIETZGEN CORPORATION
MADE IN U S A

This is to certify that all work accomplished in the conduct of this FIS was done in accordance with the Statement of Work and General Provisions of Interagency Agreement No. EMW-91-E-3525, Project Order No. 2, and all amendments thereto, together with all such modifications, either written or oral, as the Regional PO and/or the Contracting Officer or their representatives have directed, as such modifications affect this contract, and that all such work has been accomplished in accordance with sound and accepted engineering practice within the contract provisions for respective phases of the work.

David L. Schweiger

DAVID L. SCHWEIGER, P.E.
Chief, Riverine and Coastal Section,
Great Lakes Hydraulics and Hydrology
Branch

ERCL 2

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

SAGINAW RIVER

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	AV	HL	OLOSS	UCH	DEPTH	TOPWID
.02	120.00	0.00	0.00	552.90	47100.00	579.34	.12	0.00	0.00	47100.00	26.44	1297.10
.02	120.00	0.00	0.00	552.90	60600.00	579.34	.20	0.00	0.00	60600.00	26.44	1297.10
.02	120.00	0.00	0.00	552.90	66100.00	579.34	.24	0.00	0.00	66100.00	26.44	1297.10
.02	120.00	0.00	0.00	552.90	78600.00	579.34	.34	0.00	0.00	78600.00	26.44	1297.10
.34	1650.00	0.00	0.00	550.80	47100.00	579.41	.16	.10	.01	47100.00	28.61	1013.13
.34	1650.00	0.00	0.00	550.80	60600.00	579.46	.26	.16	.01	60600.00	28.66	1013.87
.34	1650.00	0.00	0.00	550.80	66100.00	579.48	.31	.19	.01	66100.00	28.68	1014.32
.34	1650.00	0.00	0.00	550.80	78600.00	579.54	.44	.27	.02	78600.00	28.74	1015.50
1.19	4510.00	0.00	0.00	553.30	47100.00	579.77	.15	.35	.00	47100.00	26.47	1494.03
1.19	4510.00	0.00	0.00	553.30	60600.00	580.04	.24	.57	.00	60600.00	26.74	1502.31
1.19	4510.00	0.00	0.00	553.30	66100.00	580.17	.28	.66	.00	66100.00	26.87	1506.23
1.19	4510.00	0.00	0.00	553.30	78600.00	580.51	.37	.90	.01	78600.00	27.21	1524.39
1.76	3020.00	0.00	0.00	546.30	47100.00	579.95	.23	.24	.02	47100.00	33.65	674.97
1.76	3020.00	0.00	0.00	546.30	60600.00	580.32	.37	.38	.02	60600.00	34.02	681.24
1.76	3020.00	0.00	0.00	546.30	66100.00	580.49	.43	.44	.03	66100.00	34.19	684.14
1.76	3020.00	0.00	0.00	546.30	78600.00	580.92	.58	.58	.04	78600.00	34.62	687.92
2.22	2440.00	0.00	0.00	551.00	47100.00	580.16	.20	.18	.00	47100.00	29.16	767.05
2.22	2440.00	0.00	0.00	551.00	60600.00	580.65	.32	.29	.00	60600.00	29.65	769.19
2.22	2440.00	0.00	0.00	551.00	66100.00	580.88	.37	.32	.01	66100.00	29.88	770.16
2.22	2440.00	0.00	0.00	551.00	78600.00	581.44	.49	.42	.01	78600.00	30.44	775.22
2.58	1860.00	0.00	0.00	549.40	47100.00	580.33	.15	.11	.01	47100.00	30.93	721.51
2.58	1860.00	0.00	0.00	549.40	60600.00	580.92	.23	.17	.01	60600.00	31.52	727.04
2.58	1860.00	0.00	0.00	549.40	66100.00	581.18	.27	.19	.01	66100.00	31.78	729.45
2.58	1860.00	0.00	0.00	549.40	78600.00	581.84	.36	.25	.01	78600.00	32.44	735.15
2.81	1232.00	0.00	0.00	547.90	47100.00	580.38	.17	.07	.01	47100.00	32.48	677.89
2.81	1232.00	0.00	0.00	547.90	60600.00	580.99	.27	.11	.01	60600.00	33.09	683.00
2.81	1232.00	0.00	0.00	547.90	66100.00	581.27	.31	.12	.01	66100.00	33.37	683.00
2.81	1232.00	0.00	0.00	547.90	78600.00	581.95	.42	.16	.01	78600.00	34.05	683.00
2.81	1.00	0.00	0.00	547.90	47100.00	580.35	.21	.00	.01	47100.00	32.45	617.74
2.81	1.00	0.00	0.00	547.90	60600.00	580.95	.33	.00	.01	60600.00	33.05	623.00
2.81	1.00	0.00	0.00	547.90	66100.00	581.22	.38	.00	.01	66100.00	33.32	623.00
2.81	1.00	0.00	0.00	547.90	78600.00	581.88	.51	.00	.02	78600.00	33.98	623.00
2.81	17.00	0.00	0.00	547.90	47100.00	580.35	.21	.00	.00	47100.00	32.45	617.75
2.81	17.00	0.00	0.00	547.90	60600.00	580.95	.33	.00	.00	60600.00	33.05	623.00
2.81	17.00	0.00	0.00	547.90	66100.00	581.22	.38	.00	.00	66100.00	33.32	623.00
2.81	17.00	0.00	0.00	547.90	78600.00	581.88	.51	.00	.00	78600.00	33.98	623.00
2.81	1.00	0.00	0.00	547.90	47100.00	580.39	.17	.00	.00	47100.00	32.49	677.96
2.81	1.00	0.00	0.00	547.90	60600.00	581.02	.27	.00	.01	60600.00	33.12	683.00
2.81	1.00	0.00	0.00	547.90	66100.00	581.30	.31	.00	.01	66100.00	33.40	683.00
2.81	1.00	0.00	0.00	547.90	78600.00	581.99	.41	.00	.01	78600.00	34.09	683.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2.95	709.00	0.00	0.00	551.80	47100.00	580.48	.14	.05	.00	47100.00	28.68	1029.22
2.95	709.00	0.00	0.00	551.80	60600.00	581.15	.21	.07	.01	60600.00	29.35	1055.49
2.95	709.00	0.00	0.00	551.80	66100.00	581.46	.24	.08	.01	66100.00	29.66	1067.40
2.95	709.00	0.00	0.00	551.80	78600.00	582.21	.30	.10	.01	78599.84	30.41	1084.33
3.35	2130.00	0.00	0.00	551.60	47100.00	580.59	.16	.13	.01	47100.00	28.99	1115.38
3.35	2130.00	0.00	0.00	551.60	60600.00	581.32	.24	.20	.01	60600.00	29.72	1128.49
3.35	2130.00	0.00	0.00	551.60	66100.00	581.65	.28	.22	.01	66100.00	30.05	1132.62
3.35	2130.00	0.00	0.00	551.60	78600.00	582.45	.35	.28	.01	78598.31	30.85	1181.72
3.60	1322.00	0.00	0.00	544.00	47100.00	580.66	.17	.08	.00	47100.00	36.66	658.19
3.60	1322.00	0.00	0.00	544.00	60600.00	581.42	.26	.11	.00	60600.00	37.42	662.26
3.60	1322.00	0.00	0.00	544.00	66100.00	581.76	.30	.13	.00	66100.00	37.76	665.26
3.60	1322.00	0.00	0.00	544.00	78600.00	582.57	.40	.16	.01	78600.00	38.57	684.65
3.60	1.00	0.00	0.00	544.00	47100.00	580.60	.24	.00	.02	47100.00	36.60	569.12
3.60	1.00	0.00	0.00	544.00	60600.00	581.33	.38	.00	.02	60600.00	37.33	572.44
3.60	1.00	0.00	0.00	544.00	66100.00	581.65	.43	.00	.03	66100.00	37.65	575.31
3.60	1.00	0.00	0.00	544.00	78600.00	582.43	.57	.00	.04	78600.00	38.43	590.57
3.62	73.50	0.00	0.00	544.00	47100.00	580.61	.24	.01	.00	47100.00	36.61	569.12
3.62	73.50	0.00	0.00	544.00	60600.00	581.34	.35	.01	.00	60600.00	37.34	572.50
3.62	73.50	0.00	0.00	544.00	66100.00	581.66	.43	.01	.00	66100.00	37.66	575.38
3.62	73.50	0.00	0.00	544.00	78600.00	582.45	.57	.01	.00	78600.00	38.45	590.95
3.62	1.00	0.00	0.00	544.00	47100.00	580.69	.17	.00	.01	47100.00	36.69	658.21
3.62	1.00	0.00	0.00	544.00	60600.00	581.47	.26	.00	.01	60600.00	37.47	662.66
3.62	1.00	0.00	0.00	544.00	66100.00	581.81	.30	.00	.01	66100.00	37.81	665.72
3.62	1.00	0.00	0.00	544.00	78600.00	582.64	.39	.00	.02	78600.00	38.64	687.14
3.65	162.50	0.00	0.00	548.90	47100.00	580.70	.17	.01	.00	47100.00	31.80	735.96
3.65	162.50	0.00	0.00	548.90	60600.00	581.48	.26	.01	.00	60600.00	32.58	740.25
3.65	162.50	0.00	0.00	548.90	66100.00	581.83	.30	.01	.00	66100.00	32.93	742.15
3.65	162.50	0.00	0.00	548.90	78600.00	582.67	.39	.02	.00	78599.58	33.77	746.16
3.69	231.00	0.00	0.00	547.40	47100.00	580.69	.20	.01	.01	47100.00	33.29	593.89
3.69	231.00	0.00	0.00	547.40	60600.00	581.46	.31	.02	.01	60600.00	34.06	600.28
3.69	231.00	0.00	0.00	547.40	66100.00	581.80	.36	.02	.01	66100.00	34.40	603.02
3.69	231.00	0.00	0.00	547.40	78600.00	582.63	.47	.03	.02	78600.00	35.23	608.02
3.69	1.00	0.00	0.00	547.40	47100.00	580.67	.23	.00	.00	47100.00	33.27	547.79
3.69	1.00	0.00	0.00	547.40	60600.00	581.43	.35	.00	.01	60600.00	34.03	554.02
3.69	1.00	0.00	0.00	547.40	66100.00	581.77	.41	.00	.01	66100.00	34.37	556.73
3.69	1.00	0.00	0.00	547.40	78600.00	582.58	.53	.00	.01	78600.00	35.18	557.80
3.70	35.50	0.00	0.00	547.40	47100.00	580.67	.23	.00	.00	47100.00	33.27	547.82
3.70	35.50	0.00	0.00	547.40	60600.00	581.43	.35	.00	.00	60600.00	34.03	554.06
3.70	35.50	0.00	0.00	547.40	66100.00	581.77	.40	.00	.00	66100.00	34.37	556.77
3.70	35.50	0.00	0.00	547.40	78600.00	582.59	.53	.01	.00	78600.00	35.19	557.83

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.70	1.00	0.00	0.00	547.40	47100.00	580.70	.20	.00	.00	47100.00	33.30	593.91
3.70	1.00	0.00	0.00	547.40	60600.00	581.48	.31	.00	.00	60600.00	34.08	600.41
3.70	1.00	0.00	0.00	547.40	66100.00	581.82	.36	.00	.00	66100.00	34.42	603.15
3.70	1.00	0.00	0.00	547.40	78600.00	582.66	.47	.00	.01	78600.00	35.26	608.14
4.37	3550.00	0.00	0.00	548.20	47100.00	580.96	.16	.21	.00	47100.00	32.76	751.93
4.37	3550.00	0.00	0.00	548.20	60600.00	581.87	.24	.31	.01	60600.00	33.67	758.36
4.37	3550.00	0.00	0.00	548.20	66100.00	582.27	.27	.35	.01	66100.00	34.07	760.84
4.37	3550.00	0.00	0.00	548.20	78600.00	583.23	.35	.44	.01	78600.00	35.03	765.71
4.68	1649.00	0.00	0.00	545.50	47100.00	581.04	.18	.10	.01	47100.00	35.54	657.00
4.68	1649.00	0.00	0.00	545.50	60600.00	581.98	.26	.14	.01	60600.00	36.48	657.00
4.68	1649.00	0.00	0.00	545.50	66100.00	582.39	.32	.16	.01	66100.00	36.89	657.00
4.68	1649.00	0.00	0.00	545.50	78600.00	583.38	.42	.20	.01	78600.00	37.88	657.00
4.68	1.00	0.00	0.00	545.50	47100.00	581.01	.21	.00	.01	47100.00	35.51	612.00
4.68	1.00	0.00	0.00	545.50	60600.00	581.94	.32	.00	.01	60600.00	36.44	612.00
4.68	1.00	0.00	0.00	545.50	66100.00	582.35	.37	.00	.01	66100.00	36.85	612.00
4.68	1.00	0.00	0.00	545.50	78600.00	583.32	.48	.00	.01	78600.00	37.82	612.00
4.68	20.00	0.00	0.00	545.50	47100.00	581.01	.21	.00	.00	47100.00	35.51	612.00
4.68	20.00	0.00	0.00	545.50	60600.00	581.94	.32	.00	.00	60600.00	36.44	612.00
4.68	20.00	0.00	0.00	545.50	66100.00	582.35	.37	.00	.00	66100.00	36.85	612.00
4.68	20.00	0.00	0.00	545.50	78600.00	583.33	.48	.00	.00	78600.00	37.83	612.00
4.68	1.00	0.00	0.00	545.50	47100.00	581.05	.18	.00	.00	47100.00	35.55	657.00
4.68	1.00	0.00	0.00	545.50	60600.00	581.99	.27	.00	.00	60600.00	36.49	657.00
4.68	1.00	0.00	0.00	545.50	66100.00	582.41	.32	.00	.01	66100.00	36.91	657.00
4.68	1.00	0.00	0.00	545.50	78600.00	583.40	.41	.00	.01	78600.00	37.90	657.00
4.84	809.00	0.00	0.00	551.00	47100.00	581.14	.14	.05	.00	47100.00	30.14	816.72
4.84	809.00	0.00	0.00	551.00	60600.00	582.14	.21	.07	.01	60600.00	31.14	821.60
4.84	809.00	0.00	0.00	551.00	66100.00	582.58	.24	.08	.01	66099.94	31.58	824.66
4.84	809.00	0.00	0.00	551.00	78600.00	583.62	.30	.09	.01	78594.51	32.62	858.52
4.97	702.00	0.00	0.00	553.20	47100.00	581.16	.17	.04	.01	47100.00	27.96	807.00
4.97	702.00	0.00	0.00	553.20	60600.00	582.17	.25	.06	.01	60600.00	28.97	807.00
4.97	702.00	0.00	0.00	553.20	66100.00	582.61	.29	.07	.01	66100.00	29.41	807.00
4.97	702.00	0.00	0.00	553.20	78600.00	583.65	.37	.08	.01	78600.00	30.45	807.00
4.97	1.00	0.00	0.00	553.20	47100.00	581.13	.21	.00	.01	47100.00	27.93	732.00
4.97	1.00	0.00	0.00	553.20	60600.00	582.12	.31	.00	.01	60600.00	28.92	732.00
4.97	1.00	0.00	0.00	553.20	66100.00	582.56	.35	.00	.01	66100.00	29.36	732.00
4.97	1.00	0.00	0.00	553.20	78600.00	583.59	.45	.00	.02	78600.00	30.39	732.00
4.98	34.00	0.00	0.00	553.20	47100.00	581.14	.21	.00	.00	47100.00	27.94	732.00
4.98	34.00	0.00	0.00	553.20	60600.00	582.13	.31	.01	.00	60600.00	28.93	732.00
4.98	34.00	0.00	0.00	553.20	66100.00	582.56	.35	.01	.00	66100.00	29.36	732.00
4.98	34.00	0.00	0.00	553.20	78600.00	583.60	.45	.01	.00	78600.00	30.40	732.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
4.98	1.00	0.00	0.00	553.20	47100.00	581.18	.17	.00	.00	47100.00	27.98	807.00
4.98	1.00	0.00	0.00	553.20	60600.00	582.19	.23	.00	.01	60600.00	28.99	807.00
4.98	1.00	0.00	0.00	553.20	66100.00	582.63	.29	.00	.01	66100.00	29.43	807.00
4.98	1.00	0.00	0.00	553.20	78600.00	583.68	.37	.00	.01	78600.00	30.48	807.00
5.15	932.00	0.00	0.00	555.90	47000.00	581.23	.20	.07	.00	47000.00	25.33	720.52
5.15	932.00	0.00	0.00	555.90	60500.00	582.26	.29	.10	.01	60500.00	26.36	730.64
5.15	932.00	0.00	0.00	555.90	65900.00	582.71	.33	.12	.01	65899.96	26.81	735.22
5.15	932.00	0.00	0.00	555.90	78400.00	583.78	.42	.14	.01	78367.97	27.88	1151.86
5.33	920.00	0.00	0.00	552.90	47000.00	581.28	.22	.07	.01	47000.00	28.38	580.10
5.33	920.00	0.00	0.00	552.90	60500.00	582.33	.33	.10	.01	60500.00	29.43	597.80
5.33	920.00	0.00	0.00	552.90	65900.00	582.79	.38	.11	.01	65899.62	29.89	602.54
5.33	920.00	0.00	0.00	552.90	78400.00	583.86	.49	.14	.01	78385.32	30.96	649.77
5.33	1.00	0.00	0.00	552.90	47000.00	581.20	.32	.00	.02	47000.00	28.30	492.82
5.33	1.00	0.00	0.00	552.90	60500.00	582.21	.49	.00	.03	60500.00	29.31	504.61
5.33	1.00	0.00	0.00	552.90	65900.00	582.65	.55	.00	.03	65899.83	29.75	509.19
5.33	1.00	0.00	0.00	552.90	78400.00	583.68	.71	.00	.04	78390.44	30.78	544.53
5.34	68.00	0.00	0.00	552.90	47000.00	581.21	.32	.01	.00	47000.00	28.31	492.87
5.34	68.00	0.00	0.00	552.90	60500.00	582.22	.49	.01	.00	60500.00	29.32	504.89
5.34	68.00	0.00	0.00	552.90	65900.00	582.66	.55	.01	.00	65899.32	29.76	509.20
5.34	68.00	0.00	0.00	552.90	78400.00	583.70	.71	.02	.00	78390.05	30.80	544.57
5.34	1.00	0.00	0.00	552.90	47000.00	581.32	.22	.00	.01	47000.00	28.42	580.41
5.34	1.00	0.00	0.00	552.90	60500.00	582.34	.33	.00	.02	60500.00	29.49	599.44
5.34	1.00	0.00	0.00	552.90	65900.00	582.86	.36	.00	.02	65899.49	29.96	603.06
5.34	1.00	0.00	0.00	552.90	78400.00	583.95	.49	.00	.02	78382.43	31.05	656.04
5.91	2990.00	0.00	0.00	556.30	47000.00	581.62	.21	.28	.00	47000.00	25.32	1151.78
5.91	2990.00	0.00	0.00	556.30	60500.00	582.83	.29	.39	.01	60500.00	26.53	1163.67
5.91	2990.00	0.00	0.00	556.30	65900.00	583.36	.31	.42	.01	65899.00	27.06	1185.32
5.91	2990.00	0.00	0.00	556.30	78400.00	584.53	.36	.49	.01	78364.25	28.28	1241.30
6.22	1670.00	0.00	0.00	553.10	42370.00	581.76	.27	.15	.01	42370.00	28.66	577.51
6.22	1670.00	0.00	0.00	553.10	53400.00	583.00	.37	.24	.02	53399.10	29.90	585.38
6.22	1670.00	0.00	0.00	553.10	57650.00	583.53	.41	.26	.02	57646.95	30.43	589.15
6.22	1670.00	0.00	0.00	553.10	67300.00	584.76	.50	.29	.03	67272.04	31.66	661.03
6.52	1573.00	0.00	0.00	546.10	42370.00	581.93	.23	.13	.00	42370.00	35.83	447.00
6.52	1573.00	0.00	0.00	546.10	53400.00	583.22	.33	.17	.00	53400.00	37.12	447.00
6.52	1573.00	0.00	0.00	546.10	57650.00	583.76	.37	.19	.00	57650.00	37.66	447.00
6.52	1573.00	0.00	0.00	546.10	67300.00	585.02	.46	.22	.00	67300.00	38.92	447.00
6.52	1.00	0.00	0.00	546.70	42370.00	581.80	.39	.00	.03	42370.00	35.10	367.00
6.52	1.00	0.00	0.00	546.70	53400.00	583.03	.56	.00	.05	53400.00	36.33	367.00
6.52	1.00	0.00	0.00	546.70	57650.00	583.56	.63	.00	.05	57650.00	36.86	367.00
6.52	1.00	0.00	0.00	546.70	67300.00	584.77	.78	.00	.06	67300.00	38.07	367.00

Divided Flow

Divided Flow

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	-V	HL	OLOSS	QCH	DEPTH	TOPWID
6.53	42.00	0.00	0.00	546.70	42370.00	581.81	.39	.01	.00	42370.00	35.11	367.00
6.53	42.00	0.00	0.00	546.70	53400.00	583.04	.56	.01	.00	53400.00	36.34	367.00
6.53	42.00	0.00	0.00	546.70	57650.00	583.57	.63	.01	.00	57650.00	36.87	367.00
6.53	42.00	0.00	0.00	546.70	67300.00	584.78	.78	.01	.00	67300.00	38.08	367.00
6.53	1.00	0.00	0.00	546.10	42370.00	581.99	.23	.00	.02	42370.00	35.89	447.00
6.53	1.00	0.00	0.00	546.10	53400.00	583.30	.33	.00	.02	53400.00	37.20	447.00
6.53	1.00	0.00	0.00	546.10	57650.00	583.85	.37	.00	.03	57650.00	37.75	447.00
6.53	1.00	0.00	0.00	546.10	67300.00	585.13	.46	.00	.03	67300.00	39.03	447.00
7.02	2578.00	0.00	0.00	553.00	42370.00	582.20	.22	.20	.00	42370.00	29.20	729.18
7.02	2578.00	0.00	0.00	553.00	53400.00	583.60	.29	.27	.00	53400.00	30.60	730.00
7.02	2578.00	0.00	0.00	553.00	57650.00	584.19	.32	.29	.00	57650.00	31.19	730.00
7.02	2578.00	0.00	0.00	553.00	67300.00	585.55	.38	.33	.01	67257.87	32.55	813.30
7.57	2910.00	0.00	0.00	554.10	42370.00	582.47	.15	.21	.01	42369.93	28.37	651.10
7.57	2910.00	0.00	0.00	554.10	53400.00	583.94	.23	.27	.01	53395.32	29.84	676.00
7.57	2910.00	0.00	0.00	554.10	57650.00	584.55	.25	.29	.01	57637.53	30.45	691.96
7.57	2910.00	0.00	0.00	554.10	67300.00	585.95	.30	.32	.01	66461.79	31.85	1192.83
8.10	2810.00	0.00	0.00	553.00	42370.00	582.61	.23	.19	.01	42369.90	29.61	523.65
8.10	2810.00	0.00	0.00	553.00	53400.00	584.12	.32	.25	.02	53373.91	31.12	626.98
8.10	2810.00	0.00	0.00	553.00	57650.00	584.74	.35	.27	.02	57573.52	31.74	632.45
8.10	2810.00	0.00	0.00	553.00	67300.00	586.16	.42	.30	.02	67014.84	33.16	640.00
8.24	750.00	0.00	0.00	554.30	47000.00	582.74	.17	.06	.01	46999.99	28.44	827.41
8.24	750.00	0.00	0.00	554.30	60500.00	584.29	.24	.08	.01	60372.48	29.99	1040.95
8.24	750.00	0.00	0.00	554.30	65900.00	584.92	.26	.08	.01	65629.92	30.62	1295.28
8.24	750.00	0.00	0.00	554.30	78400.00	586.38	.31	.09	.01	77061.26	32.08	1910.29
9.08	4420.00	0.00	0.00	551.10	47900.00	563.10	.16	.36	.00	47529.16	32.00	1843.56
9.08	4420.00	0.00	0.00	551.10	61400.00	564.77	.20	.44	.00	59589.16	33.67	1871.72
9.08	4420.00	0.00	0.00	551.10	67100.00	565.44	.21	.45	.00	64430.10	34.34	1882.34
9.08	4420.00	0.00	0.00	551.10	80000.00	566.96	.23	.50	.01	74921.38	35.86	1893.28
9.58	2670.00	0.00	0.00	554.70	47900.00	583.33	.19	.25	.01	45986.13	28.63	2042.38
9.58	2670.00	0.00	0.00	554.70	61400.00	585.04	.21	.29	.00	56591.06	30.34	2236.43
9.58	2670.00	0.00	0.00	554.70	67100.00	585.73	.22	.29	.00	60749.07	31.03	2237.47
9.58	2670.00	0.00	0.00	554.70	80000.00	587.27	.23	.30	.00	69579.77	32.57	2239.80
10.24	3460.00	0.00	0.00	554.60	47900.00	563.69	.15	.32	.00	42930.41	29.09	2349.31
10.24	3460.00	0.00	0.00	554.60	61400.00	565.44	.17	.35	.00	51406.22	30.84	2356.87
10.24	3460.00	0.00	0.00	554.60	67100.00	566.13	.18	.35	.00	54734.20	31.53	2359.87
10.24	3460.00	0.00	0.00	554.60	80000.00	567.67	.18	.35	.00	61795.02	33.07	2366.52
10.99	3980.00	0.00	0.00	554.80	48300.00	584.00	.20	.34	.01	43299.39	29.20	994.65
10.99	3980.00	0.00	0.00	554.80	62300.00	585.75	.26	.39	.02	62292.49	30.95	1000.02
10.99	3980.00	0.00	0.00	554.80	68400.00	586.44	.29	.40	.02	68386.27	31.64	1002.48
10.99	3980.00	0.00	0.00	554.80	82400.00	587.96	.35	.43	.03	82353.89	33.16	1020.60

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	QLOSS	QCH	DEPTH	TOPWID
11.43	2325.00	0.00	0.00	554.85	48300.00	584.20	.22	.21	.00	48300.00	29.35	850.00
11.43	2325.00	0.00	0.00	554.85	62300.00	585.99	.29	.26	.00	62300.00	31.14	850.00
11.43	2325.00	0.00	0.00	554.85	68400.00	586.70	.32	.29	.01	68400.00	31.85	850.00
11.43	2325.00	0.00	0.00	554.85	82400.00	588.25	.39	.32	.01	82400.00	33.40	850.00
11.80	1945.00	0.00	0.00	554.90	48300.00	584.33	.29	.19	.01	47953.81	29.43	987.32
11.80	1945.00	0.00	0.00	554.90	62300.00	586.16	.38	.23	.02	60882.66	31.26	1057.64
11.80	1945.00	0.00	0.00	554.90	68400.00	586.88	.42	.25	.02	66326.45	31.98	1060.71
11.80	1945.00	0.00	0.00	554.90	82400.00	588.46	.50	.29	.02	78450.32	33.56	1067.46
12.57	4050.00	0.00	0.00	553.40	48300.00	584.80	.15	.32	.01	44518.91	31.40	1612.18
12.57	4050.00	0.00	0.00	553.40	62300.00	586.75	.18	.38	.02	55307.41	33.35	1649.71
12.57	4050.00	0.00	0.00	553.40	68400.00	587.52	.20	.40	.02	59860.48	34.12	1654.43
12.57	4050.00	0.00	0.00	553.40	82400.00	589.20	.22	.44	.03	69999.53	35.80	1668.02
13.25	3590.00	0.00	0.00	554.60	48300.00	584.98	.23	.24	.02	48286.58	30.38	597.29
13.25	3590.00	0.00	0.00	554.60	62300.00	586.93	.32	.29	.03	62054.10	32.33	1044.06
13.25	3590.00	0.00	0.00	554.60	68400.00	587.70	.36	.31	.03	67817.76	33.10	1079.11
13.25	3590.00	0.00	0.00	554.60	82400.00	589.37	.43	.34	.04	80528.25	34.77	1176.00
13.75	2630.00	0.00	0.00	553.10	48300.00	585.19	.22	.20	.00	46052.60	32.09	1222.24
13.75	2630.00	0.00	0.00	553.10	62300.00	587.23	.27	.24	.00	57584.16	34.13	1264.68
13.75	2630.00	0.00	0.00	553.10	68400.00	588.03	.29	.26	.01	62432.31	34.93	1305.97
13.75	2630.00	0.00	0.00	553.10	82400.00	589.77	.34	.29	.01	73148.82	36.67	1355.00
14.39	3370.00	0.00	0.00	553.40	48300.00	585.43	.23	.25	.00	48213.36	32.03	600.00
14.39	3370.00	0.00	0.00	553.40	62300.00	587.49	.32	.30	.01	62014.82	34.09	600.00
14.39	3370.00	0.00	0.00	553.40	68400.00	589.30	.36	.33	.01	68002.74	34.90	600.00
14.39	3370.00	0.00	0.00	553.40	82400.00	590.05	.46	.37	.02	81693.61	36.65	600.00
14.41	114.00	0.00	0.00	552.40	48300.00	585.41	.26	.01	.01	48300.00	33.01	533.66
14.41	114.00	0.00	0.00	552.40	62300.00	587.47	.37	.01	.01	62300.00	35.07	538.88
14.41	114.00	0.00	0.00	552.40	68400.00	588.27	.41	.01	.01	68400.00	35.87	540.92
14.41	114.00	0.00	0.00	552.40	82400.00	590.01	.52	.02	.01	82400.00	37.61	545.34
14.41	1.00	0.00	0.00	552.40	48300.00	585.29	.41	.00	.03	48300.00	32.89	443.35
14.41	1.00	0.00	0.00	552.40	62300.00	587.30	.57	.00	.04	62300.00	34.90	448.45
14.41	1.00	0.00	0.00	552.40	68400.00	589.09	.65	.00	.05	68400.00	35.69	450.45
14.41	1.00	0.00	0.00	552.40	82400.00	589.78	.92	.00	.06	82400.00	37.38	454.74
14.42	70.00	0.00	0.00	552.40	48300.00	585.31	.41	.02	.00	48300.00	32.91	443.38
14.42	70.00	0.00	0.00	552.40	62300.00	587.33	.57	.02	.00	62300.00	34.93	448.49
14.42	70.00	0.00	0.00	552.40	68400.00	588.11	.65	.03	.00	68400.00	35.71	450.49
14.42	70.00	0.00	0.00	552.40	82400.00	589.81	.91	.03	.00	82400.00	37.41	454.81
14.42	1.00	0.00	0.00	552.40	48300.00	585.45	.26	.00	.02	48300.00	33.03	533.32
14.42	1.00	0.00	0.00	552.40	62300.00	587.56	.36	.00	.02	62300.00	35.16	539.10
14.42	1.00	0.00	0.00	552.40	68400.00	588.37	.41	.00	.02	68400.00	35.97	541.17
14.42	1.00	0.00	0.00	552.40	82400.00	590.14	.52	.00	.03	82400.00	37.74	545.66

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	-V	HL	OLOSS	QCH	DEPTH	TOPWID
15.16	3884.00	0.00	0.00	553.60	48300.00	585.87	.21	.33	.01	48300.00	32.27	687.81
15.16	3884.00	0.00	0.00	553.60	62300.00	588.06	.28	.41	.01	62300.00	34.46	706.77
15.16	3884.00	0.00	0.00	553.60	68400.00	589.92	.31	.44	.01	68400.00	35.32	713.00
15.16	3884.00	0.00	0.00	553.60	82400.00	590.80	.36	.51	.01	82400.00	37.20	713.00
15.47	1657.00	0.00	0.00	552.91	48300.00	585.95	.28	.14	.01	48029.06	33.04	754.59
15.47	1657.00	0.00	0.00	552.91	62300.00	588.15	.37	.17	.02	61267.02	35.24	782.70
15.47	1657.00	0.00	0.00	552.91	68400.00	589.02	.41	.18	.02	66913.78	36.11	793.81
15.47	1657.00	0.00	0.00	552.91	82400.00	590.91	.49	.20	.02	79599.64	38.00	800.00
15.61	750.00	0.00	0.00	552.60	48300.00	586.02	.27	.07	.00	48013.45	33.42	669.43
15.61	750.00	0.00	0.00	552.60	62300.00	588.24	.36	.08	.00	61452.86	35.64	697.72
15.61	750.00	0.00	0.00	552.60	68400.00	589.12	.40	.09	.00	67232.29	36.52	708.88
15.61	750.00	0.00	0.00	552.60	82400.00	591.01	.49	.10	.00	80299.28	38.41	710.00
16.17	2940.00	0.00	0.00	552.70	48300.00	586.30	.24	.24	.00	45294.16	33.60	702.78
16.17	2940.00	0.00	0.00	552.70	62300.00	588.59	.31	.30	.00	62140.64	35.89	796.51
16.17	2940.00	0.00	0.00	552.70	68400.00	589.50	.34	.32	.01	68131.01	36.80	818.36
16.17	2940.00	0.00	0.00	552.70	82400.00	591.47	.40	.36	.01	81805.84	38.77	865.64
16.50	1750.00	0.00	0.00	554.30	48300.00	586.48	.19	.12	.01	48300.00	32.18	659.00
16.50	1750.00	0.00	0.00	554.30	62300.00	588.31	.25	.15	.01	62300.00	34.51	659.00
16.50	1750.00	0.00	0.00	554.30	68400.00	589.73	.28	.16	.01	68400.00	35.43	659.00
16.50	1750.00	0.00	0.00	554.30	82400.00	591.71	.35	.18	.01	82400.00	37.41	659.00
16.76	1360.00	0.00	0.00	548.10	48000.00	586.53	.22	.03	.01	47965.30	38.43	476.82
16.76	1360.00	0.00	0.00	548.10	62000.00	588.86	.31	.10	.01	61853.57	40.76	548.11
16.76	1360.00	0.00	0.00	548.10	68000.00	589.78	.35	.11	.01	67749.90	41.68	568.58
16.76	1360.00	0.00	0.00	548.10	82000.00	591.76	.45	.12	.02	81337.78	43.66	600.00
16.78	95.00	0.00	0.00	547.80	48000.00	586.50	.27	.01	.01	48000.00	38.70	554.17
16.78	95.00	0.00	0.00	547.80	62000.00	588.83	.36	.01	.01	62000.00	41.03	559.02
16.78	95.00	0.00	0.00	547.80	68000.00	589.75	.40	.01	.01	68000.00	41.95	560.84
16.78	95.00	0.00	0.00	547.80	82000.00	591.72	.50	.01	.01	82000.00	43.92	564.57
16.78	1.00	0.00	0.00	547.80	48000.00	586.45	.33	.00	.01	48000.00	38.65	500.06
16.78	1.00	0.00	0.00	547.80	62000.00	588.76	.45	.00	.02	62000.00	40.96	503.36
16.78	1.00	0.00	0.00	547.80	68000.00	589.67	.50	.00	.02	68000.00	41.87	505.91
16.78	1.00	0.00	0.00	547.80	82000.00	591.63	.62	.00	.02	82000.00	43.83	510.32
16.78	27.00	0.00	0.00	547.80	48000.00	586.45	.33	.00	.00	48000.00	38.65	500.07
16.78	27.00	0.00	0.00	547.80	62000.00	588.77	.45	.00	.00	62000.00	40.97	503.87
16.78	27.00	0.00	0.00	547.80	68000.00	589.68	.50	.00	.00	68000.00	41.88	505.92
16.78	27.00	0.00	0.00	547.80	82000.00	591.64	.62	.01	.00	82000.00	43.84	510.33
16.78	1.00	0.00	0.00	547.30	48000.00	586.52	.27	.00	.01	48000.00	38.72	554.21
16.78	1.00	0.00	0.00	547.80	62000.00	588.86	.36	.00	.01	62000.00	41.06	559.08
16.78	1.00	0.00	0.00	547.80	68000.00	589.78	.40	.00	.01	68000.00	41.98	560.91
16.78	1.00	0.00	0.00	547.80	82000.00	591.77	.50	.00	.01	82000.00	43.97	564.65

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
17.28	2644.00	0.00	0.00	555.80	48000.00	586.77	.24	.21	.00	48000.00	30.97	592.00
17.28	2644.00	0.00	0.00	555.80	62000.00	589.17	.32	.25	.00	62000.00	33.37	592.00
17.28	2644.00	0.00	0.00	555.80	68000.00	590.12	.35	.23	.01	68000.00	34.32	592.00
17.28	2644.00	0.00	0.00	555.80	82000.00	592.16	.44	.32	.01	82000.00	36.36	592.00
17.76	2510.00	0.00	0.00	554.20	48000.00	586.93	.31	.22	.01	48000.00	32.73	450.00
17.76	2510.00	0.00	0.00	554.20	62000.00	589.35	.43	.27	.02	62000.00	35.15	450.00
17.76	2510.00	0.00	0.00	554.20	68000.00	590.30	.46	.29	.02	68000.00	36.10	450.00
17.76	2510.00	0.00	0.00	554.20	82000.00	592.35	.50	.33	.03	82000.00	38.15	450.00
17.79	173.00	0.00	0.00	551.20	48000.00	587.09	.18	.02	.01	48000.00	35.89	728.44
17.79	173.00	0.00	0.00	551.20	62000.00	589.58	.23	.02	.02	62000.00	38.38	729.35
17.79	173.00	0.00	0.00	551.20	68000.00	590.57	.25	.02	.02	68000.00	39.37	729.71
17.79	173.00	0.00	0.00	551.20	82000.00	592.69	.31	.02	.03	82000.00	41.49	730.48
17.79	1.00	593.00	592.60	551.20	48000.00	587.07	.20	.00	.00	48000.00	35.87	682.00
17.79	1.00	593.00	592.60	551.20	62000.00	589.56	.26	.00	.01	62000.00	38.36	682.00
17.79	1.00	593.00	592.60	551.20	68000.00	590.53	.29	.00	.01	68000.00	39.33	697.00
17.79	1.00	593.00	592.60	551.20	82000.00	592.63	.32	.00	.01	82000.00	41.43	732.00
17.80	32.00	593.00	592.60	551.20	48000.00	587.08	.20	.00	.00	48000.00	35.88	682.00
17.80	32.00	593.00	592.60	551.20	62000.00	589.56	.26	.00	.00	62000.00	38.36	682.00
17.80	32.00	593.00	592.60	551.20	68000.00	590.54	.29	.01	.00	68000.00	39.34	697.00
17.80	32.00	593.00	592.60	551.20	82000.00	592.65	.33	.01	.00	82000.00	41.45	732.00
17.80	1.00	0.00	0.00	551.20	48000.00	587.11	.18	.00	.00	48000.00	35.91	728.44
17.80	1.00	0.00	0.00	551.20	62000.00	589.60	.23	.00	.00	62000.00	38.40	729.35
17.80	1.00	0.00	0.00	551.20	68000.00	590.58	.25	.00	.00	68000.00	39.38	729.71
17.80	1.00	0.00	0.00	551.20	82000.00	592.73	.31	.00	.01	82000.00	41.53	730.49
18.13	1783.00	0.00	0.00	558.10	48000.00	587.19	.27	.16	.02	48000.00	29.09	560.00
18.13	1783.00	0.00	0.00	558.10	62000.00	589.68	.36	.18	.03	62000.00	31.58	560.00
18.13	1783.00	0.00	0.00	558.10	68000.00	590.66	.40	.19	.03	68000.00	32.56	560.00
18.13	1783.00	0.00	0.00	558.10	82000.00	592.80	.49	.21	.04	82000.00	34.70	560.00
18.16	141.00	0.00	0.00	556.80	48000.00	587.19	.29	.01	.00	48000.00	30.38	536.21
18.16	141.00	0.00	0.00	556.80	62000.00	589.67	.39	.02	.01	62000.00	32.87	538.96
18.16	141.00	0.00	0.00	556.80	68000.00	590.65	.43	.02	.01	68000.00	33.85	543.35
18.16	141.00	0.00	0.00	556.80	82000.00	592.78	.53	.02	.01	81897.03	35.98	650.00
18.16	1.00	0.00	0.00	556.80	48000.00	587.17	.31	.00	.00	48000.00	30.37	516.00
18.16	1.00	0.00	0.00	556.80	62000.00	589.65	.41	.00	.00	62000.00	32.85	516.00
18.16	1.00	0.00	0.00	556.80	68000.00	590.63	.46	.00	.01	68000.00	33.83	516.00
18.16	1.00	0.00	0.00	556.80	82000.00	592.76	.56	.00	.01	82000.00	35.96	519.00
18.18	96.00	0.00	0.00	556.80	48000.00	587.18	.31	.01	.00	48000.00	30.38	516.00
18.18	96.00	0.00	0.00	556.80	62000.00	589.66	.41	.01	.00	62000.00	32.86	516.00
18.18	96.00	0.00	0.00	556.80	68000.00	590.64	.46	.02	.00	68000.00	33.84	516.00
18.18	96.00	0.00	0.00	556.80	82000.00	592.77	.56	.02	.00	82000.00	35.97	519.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
18.18	1.00	0.00	0.00	556.80	48000.00	587.20	.29	.00	.00	48000.00	30.40	536.22
18.18	1.00	0.00	0.00	556.80	62000.00	589.69	.39	.00	.00	62000.00	32.89	538.98
18.18	1.00	0.00	0.00	556.80	68000.00	590.67	.43	.00	.00	67999.99	33.87	544.99
18.18	1.00	0.00	0.00	556.80	82000.00	592.81	.53	.00	.00	81893.71	36.01	650.00
18.27	467.00	0.00	0.00	552.60	48000.00	587.28	.26	.04	.00	48000.00	34.68	518.00
18.27	467.00	0.00	0.00	552.60	62000.00	589.78	.36	.05	.00	62000.00	37.18	518.00
18.27	467.00	0.00	0.00	552.60	68000.00	590.77	.40	.05	.00	68000.00	38.17	518.00
18.27	467.00	0.00	0.00	552.60	82000.00	592.91	.49	.06	.00	82000.00	40.31	518.00
18.27	1.00	589.10	593.30	552.60	48000.00	587.23	.32	.00	.01	48000.00	34.63	480.00
18.27	1.00	589.10	593.30	552.60	62000.00	589.72	.43	.00	.01	62000.00	37.12	500.00
18.27	1.00	589.10	593.30	552.60	68000.00	590.70	.48	.00	.02	68000.00	38.10	500.00
18.27	1.00	589.10	593.30	552.60	82000.00	592.82	.61	.00	.02	82000.00	40.22	500.00
18.27	26.00	589.10	593.30	552.60	48000.00	587.24	.32	.00	.00	48000.00	34.64	480.00
18.27	26.00	589.10	593.30	552.60	62000.00	589.72	.43	.00	.00	62000.00	37.12	500.00
18.27	26.00	589.10	593.30	552.60	68000.00	590.71	.48	.00	.00	68000.00	38.11	500.00
18.27	26.00	589.10	593.30	552.60	82000.00	592.83	.61	.01	.00	82000.00	40.23	500.00
18.27	1.00	0.00	0.00	552.60	48000.00	587.29	.26	.00	.01	48000.00	34.69	518.00
18.27	1.00	0.00	0.00	552.60	62000.00	589.80	.36	.00	.01	62000.00	37.20	518.00
18.27	1.00	0.00	0.00	552.60	68000.00	590.80	.40	.00	.01	68000.00	38.20	518.00
18.27	1.00	0.00	0.00	552.60	82000.00	592.95	.49	.00	.01	82000.00	40.35	518.00
18.34	326.00	0.00	0.00	555.70	48000.00	587.29	.30	.03	.01	48000.00	31.59	430.00
18.34	326.00	0.00	0.00	555.70	62000.00	589.79	.42	.03	.01	62000.00	34.09	430.00
18.34	326.00	0.00	0.00	555.70	68000.00	590.77	.47	.04	.01	68000.00	35.07	430.00
18.34	326.00	0.00	0.00	555.70	82000.00	592.91	.59	.04	.02	82000.00	37.21	430.00
18.43	507.00	0.00	0.00	555.40	48000.00	587.32	.33	.05	.01	47994.77	31.92	438.43
18.43	507.00	0.00	0.00	555.40	62000.00	589.82	.46	.06	.01	61991.78	34.42	438.96
18.43	507.00	0.00	0.00	555.40	68000.00	590.81	.51	.07	.01	67990.41	35.41	439.16
18.43	507.00	0.00	0.00	555.40	82000.00	592.96	.63	.08	.01	81987.01	37.56	439.62
18.43	1.00	0.00	0.00	555.40	48000.00	587.21	.47	.00	.03	48000.00	31.81	428.50
18.43	1.00	0.00	0.00	555.40	62000.00	589.68	.63	.00	.03	62000.00	34.28	428.50
18.43	1.00	0.00	0.00	555.40	68000.00	590.66	.69	.00	.04	68000.00	35.26	428.50
18.43	1.00	0.00	0.00	555.40	82000.00	592.79	.85	.00	.04	82000.00	37.39	428.50
18.44	64.00	0.00	0.00	555.40	48000.00	587.22	.47	.01	.00	48000.00	31.82	428.50
18.44	64.00	0.00	0.00	555.40	62000.00	589.70	.63	.01	.00	62000.00	34.30	428.50
18.44	64.00	0.00	0.00	555.40	68000.00	590.68	.69	.02	.00	68000.00	35.28	428.50
18.44	64.00	0.00	0.00	555.40	82000.00	592.80	.85	.02	.00	82000.00	37.40	428.50
18.45	1.00	0.00	0.00	555.40	48000.00	587.37	.33	.00	.01	47994.75	31.97	438.44
18.45	1.00	0.00	0.00	555.40	62000.00	589.89	.45	.00	.02	61991.75	34.49	438.97
18.45	1.00	0.00	0.00	555.40	68000.00	590.88	.51	.00	.02	67990.36	35.48	439.18
18.45	1.00	0.00	0.00	555.40	82000.00	593.04	.63	.00	.02	81986.96	37.64	439.64

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
18.60	817.00	0.00	0.00	558.90	48000.00	587.44	.37	.10	.01	48000.00	28.54	434.80
18.60	817.00	0.00	0.00	558.90	62000.00	589.97	.50	.12	.01	62000.00	31.07	434.96
18.60	817.00	0.00	0.00	558.90	68000.00	590.97	.56	.12	.01	68000.00	32.07	435.00
18.60	817.00	0.00	0.00	558.90	82000.00	593.14	.69	.14	.01	82000.00	34.24	435.00
18.87	1440.00	0.00	0.00	557.90	48000.00	587.65	.33	.16	.00	48000.00	29.75	457.35
18.87	1440.00	0.00	0.00	557.90	62000.00	590.23	.44	.20	.01	62000.00	32.33	460.00
18.87	1440.00	0.00	0.00	557.90	68000.00	591.25	.49	.21	.01	68000.00	33.35	460.00
18.87	1440.00	0.00	0.00	557.90	82000.00	593.46	.61	.24	.01	82000.00	35.56	460.00
18.94	357.00	0.00	0.00	554.90	48000.00	587.73	.28	.03	.00	48000.00	32.83	515.61
18.94	357.00	0.00	0.00	554.90	62000.00	590.34	.36	.04	.01	62000.00	35.44	539.01
18.94	357.00	0.00	0.00	554.90	68000.00	591.38	.41	.04	.01	68000.00	36.48	550.00
18.94	357.00	0.00	0.00	554.90	82000.00	593.63	.50	.05	.01	82000.00	38.73	552.93
18.94	1.00	593.60	592.50	554.90	48000.00	587.62	.42	.00	.03	48000.00	32.72	429.17
18.94	1.00	593.60	592.50	554.90	62000.00	590.20	.56	.00	.04	62000.00	35.30	453.87
18.94	1.00	593.60	592.50	554.90	68000.00	591.22	.61	.00	.04	68000.00	36.32	465.63
18.94	1.00	593.60	592.50	554.90	82000.00	593.38	.81	.00	.06	82000.00	38.48	537.06
18.94	24.00	593.60	592.50	554.90	48000.00	587.63	.42	.00	.00	48000.00	32.73	429.21
18.94	24.00	593.60	592.50	554.90	62000.00	590.20	.56	.00	.00	62000.00	35.30	453.59
18.94	24.00	593.60	592.50	554.90	68000.00	591.22	.61	.00	.00	68000.00	36.32	465.63
18.94	24.00	593.60	592.50	554.90	82000.00	593.39	.81	.01	.00	82000.00	38.49	537.06
18.95	1.00	0.00	0.00	554.90	48000.00	587.78	.28	.00	.01	48000.00	32.88	516.18
18.95	1.00	0.00	0.00	554.90	62000.00	590.40	.37	.00	.02	62000.00	35.50	539.24
18.95	1.00	0.00	0.00	554.90	68000.00	591.44	.41	.00	.02	68000.00	36.54	550.00
18.95	1.00	0.00	0.00	554.90	82000.00	594.02	.49	.00	.03	82000.00	39.12	550.00
19.43	2577.00	0.00	0.00	559.90	48000.00	588.00	.37	.29	.02	48000.00	28.10	507.22
19.43	2577.00	0.00	0.00	559.90	62000.00	590.66	.47	.33	.02	62000.00	30.76	510.00
19.43	2577.00	0.00	0.00	559.90	68000.00	591.71	.52	.35	.02	68000.00	31.81	510.00
19.43	2577.00	0.00	0.00	559.90	82000.00	594.30	.61	.37	.02	82000.00	34.40	510.00
19.46	165.00	0.00	0.00	560.90	48000.00	588.10	.29	.02	.01	48000.00	27.20	557.87
19.46	165.00	0.00	0.00	560.90	62000.00	590.79	.38	.02	.01	62000.00	29.89	570.60
19.46	165.00	0.00	0.00	560.90	68000.00	591.85	.41	.03	.01	68000.00	30.95	575.65
19.46	165.00	0.00	0.00	560.90	82000.00	594.46	.45	.03	.01	82000.00	33.56	588.05
19.46	1.00	601.10	600.40	560.90	48000.00	588.08	.32	.00	.00	48000.00	27.18	537.82
19.46	1.00	601.10	600.40	560.90	62000.00	590.76	.41	.00	.01	62000.00	29.86	550.49
19.46	1.00	601.10	600.40	560.90	68000.00	591.82	.45	.00	.01	68000.00	30.92	555.53
19.46	1.00	601.10	600.40	560.90	82000.00	594.43	.52	.00	.01	82000.00	33.53	567.90
19.48	68.00	601.10	600.40	560.90	48000.00	588.10	.32	.01	.00	48000.00	27.20	537.87
19.48	68.00	601.10	600.40	560.90	62000.00	590.77	.41	.01	.00	62000.00	29.87	550.54
19.48	68.00	601.10	600.40	560.90	68000.00	591.83	.45	.01	.00	68000.00	30.93	555.58
19.48	68.00	601.10	600.40	560.90	82000.00	594.44	.52	.01	.00	82000.00	33.54	567.96

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
19.48	1.00	0.00	0.00	560.90	48000.00	588.12	.29	.00	.00	48000.00	27.22	557.91
19.48	1.00	0.00	0.00	560.90	62000.00	590.81	.36	.00	.00	62000.00	29.91	570.71
19.48	1.00	0.00	0.00	560.90	68000.00	591.87	.41	.00	.00	68000.00	30.97	575.76
19.48	1.00	0.00	0.00	560.90	82000.00	594.48	.50	.00	.00	82000.00	33.58	588.18
20.12	3379.00	0.00	0.00	557.00	48000.00	588.47	.32	.37	.01	48000.00	31.47	471.43
20.12	3379.00	0.00	0.00	557.00	62000.00	591.20	.42	.43	.01	62000.00	34.20	494.02
20.12	3379.00	0.00	0.00	557.00	68000.00	592.28	.47	.45	.01	68000.00	35.28	513.02
20.12	3379.00	0.00	0.00	557.00	82000.00	594.90	.55	.47	.01	81999.22	37.90	524.00
20.12	1.00	0.00	0.00	557.00	48000.00	588.39	.42	.00	.02	48000.00	31.39	411.67
20.12	1.00	0.00	0.00	557.00	62000.00	591.09	.56	.00	.03	62000.00	34.09	430.02
20.12	1.00	0.00	0.00	557.00	68000.00	592.16	.61	.00	.03	68000.00	35.16	449.01
20.12	1.00	0.00	0.00	557.00	82000.00	594.76	.72	.00	.04	82000.00	37.76	461.50
20.13	60.00	0.00	0.00	557.00	48000.00	588.40	.42	.01	.00	48000.00	31.40	411.71
20.13	60.00	0.00	0.00	557.00	62000.00	591.10	.56	.01	.00	62000.00	34.10	430.19
20.13	60.00	0.00	0.00	557.00	68000.00	592.17	.61	.01	.00	68000.00	35.17	449.18
20.13	60.00	0.00	0.00	557.00	82000.00	594.78	.72	.01	.00	82000.00	37.78	461.50
20.13	1.00	0.00	0.00	557.00	48000.00	588.52	.36	.00	.01	48000.00	31.52	471.65
20.13	1.00	0.00	0.00	557.00	62000.00	591.25	.42	.00	.01	62000.00	34.25	495.02
20.13	1.00	0.00	0.00	557.00	68000.00	592.34	.46	.00	.02	68000.00	35.34	514.01
20.13	1.00	0.00	0.00	557.00	82000.00	594.97	.55	.00	.02	81999.17	37.97	524.00
20.29	839.00	0.00	0.00	565.90	48000.00	588.70	.24	.09	.01	48000.00	22.80	686.43
20.29	839.00	0.00	0.00	565.90	62000.00	591.49	.29	.10	.01	62000.00	25.59	690.00
20.29	839.00	0.00	0.00	565.90	68000.00	592.60	.32	.10	.01	68000.00	26.70	690.00
20.29	839.00	0.00	0.00	565.90	82000.00	595.27	.37	.11	.02	82000.00	29.37	690.00
20.51	1199.00	0.00	0.00	564.60	48000.00	588.80	.28	.13	.01	48000.00	24.20	601.60
20.51	1199.00	0.00	0.00	564.60	62000.00	591.59	.35	.14	.01	62000.00	26.99	614.44
20.51	1199.00	0.00	0.00	564.60	68000.00	592.70	.38	.15	.01	68000.00	28.10	619.53
20.51	1199.00	0.00	0.00	564.60	82000.00	595.36	.44	.15	.01	82000.00	30.76	625.00
20.51	1.00	0.00	0.00	564.60	48000.00	588.78	.30	.00	.00	48000.00	24.18	577.54
20.51	1.00	0.00	0.00	564.60	62000.00	591.57	.38	.00	.01	62000.00	26.97	590.31
20.51	1.00	0.00	0.00	564.60	68000.00	592.67	.41	.00	.01	68000.00	28.07	595.39
20.51	1.00	0.00	0.00	564.60	82000.00	595.33	.46	.00	.01	82000.00	30.73	601.00
20.53	70.00	0.00	0.00	564.60	48000.00	588.79	.30	.01	.00	48000.00	24.19	577.59
20.53	70.00	0.00	0.00	564.60	62000.00	591.58	.38	.01	.00	62000.00	26.98	590.36
20.53	70.00	0.00	0.00	564.60	68000.00	592.69	.41	.01	.00	68000.00	28.08	595.44
20.53	70.00	0.00	0.00	564.60	82000.00	595.35	.45	.01	.00	82000.00	30.75	601.00
20.53	1.00	0.00	0.00	564.60	48000.00	588.82	.26	.00	.00	48000.00	24.22	601.64
20.53	1.00	0.00	0.00	564.60	62000.00	591.61	.35	.00	.00	62000.00	27.01	614.55
20.53	1.00	0.00	0.00	564.60	68000.00	592.72	.38	.00	.00	68000.00	28.12	619.64
20.53	1.00	0.00	0.00	564.60	82000.00	595.39	.44	.00	.00	82000.00	30.79	625.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
21.06	2804.00	0.00	0.00	564.90	48000.00	589.13	.29	.32	.00	48000.00	24.23	573.76
21.06	2804.00	0.00	0.00	564.90	62000.00	591.96	.36	.35	.00	62000.00	27.05	591.98
21.06	2804.00	0.00	0.00	564.90	68000.00	593.06	.39	.36	.00	68000.00	28.16	599.19
21.06	2804.00	0.00	0.00	564.90	82000.00	595.74	.46	.36	.00	82000.00	30.84	605.00
21.09	179.00	0.00	0.00	563.70	48000.00	589.20	.23	.02	.01	48000.00	25.50	759.17
21.09	179.00	0.00	0.00	563.70	62000.00	592.06	.28	.02	.01	62000.00	28.36	778.27
21.09	179.00	0.00	0.00	563.70	68000.00	593.19	.30	.02	.01	68000.00	29.49	781.87
21.09	179.00	0.00	0.00	563.70	82000.00	595.89	.34	.02	.01	82000.00	32.19	790.50
21.09	1.00	0.00	0.00	563.70	48000.00	589.20	.24	.00	.00	48000.00	25.50	741.17
21.09	1.00	0.00	0.00	563.70	62000.00	592.05	.29	.00	.00	62000.00	28.35	760.25
21.09	1.00	0.00	0.00	563.70	68000.00	593.17	.31	.00	.00	68000.00	29.47	763.85
21.09	1.00	0.00	0.00	563.70	82000.00	595.88	.35	.00	.00	82000.00	32.18	772.48
21.11	80.00	0.00	0.00	563.70	48000.00	589.21	.24	.01	.00	48000.00	25.51	741.24
21.11	80.00	0.00	0.00	563.70	62000.00	592.06	.29	.01	.00	62000.00	28.36	760.28
21.11	80.00	0.00	0.00	563.70	68000.00	593.19	.31	.01	.00	68000.00	29.49	763.88
21.11	80.00	0.00	0.00	563.70	82000.00	595.89	.35	.01	.00	82000.00	32.19	772.51
21.11	1.00	0.00	0.00	563.70	48000.00	589.22	.23	.00	.00	48000.00	25.52	759.24
21.11	1.00	0.00	0.00	563.70	62000.00	592.07	.28	.00	.00	62000.00	28.37	778.28
21.11	1.00	0.00	0.00	563.70	68000.00	593.20	.30	.00	.00	68000.00	29.50	781.90
21.11	1.00	0.00	0.00	563.70	82000.00	595.91	.34	.00	.00	82000.00	32.21	790.53
21.72	3239.00	0.00	0.00	565.30	48000.00	589.63	.15	.32	.01	33755.49	24.33	1770.00
21.72	3239.00	0.00	0.00	565.30	62000.00	592.52	.14	.29	.01	38752.02	27.22	1770.00
21.72	3239.00	0.00	0.00	565.30	68000.00	593.66	.14	.28	.02	40866.10	28.36	1770.00
21.72	3239.00	0.00	0.00	565.30	82000.00	596.39	.14	.26	.02	45494.23	31.09	1770.00
22.19	2450.00	0.00	0.00	563.30	48000.00	589.87	.08	.16	.01	30529.84	26.57	3178.61
22.19	2450.00	0.00	0.00	563.30	62000.00	592.73	.07	.13	.01	32958.31	29.43	3200.00
22.19	2450.00	0.00	0.00	563.30	68000.00	593.86	.06	.12	.01	34101.39	30.56	3200.00
22.19	2450.00	0.00	0.00	563.30	82000.00	596.57	.06	.10	.01	36544.75	33.27	3200.00
-5.91	0.00	0.00	0.00	556.30	47000.00	581.62	.21	0.00	0.00	47000.00	25.32	1151.78
-5.91	0.00	0.00	0.00	556.30	60500.00	582.83	.26	0.00	0.00	60500.00	26.53	1163.62
-5.91	0.00	0.00	0.00	556.30	65900.00	583.36	.31	0.00	0.00	65899.03	27.06	1185.04
-5.91	0.00	0.00	0.00	556.30	78400.00	584.58	.36	0.00	0.00	78364.09	28.28	1241.43
6.22	1670.00	0.00	0.00	571.10	4630.00	582.01	.03	.20	.02	4607.38	10.91	700.50
6.22	1670.00	0.00	0.00	571.10	7100.00	583.34	.05	.25	.02	7040.75	12.24	715.02
6.22	1670.00	0.00	0.00	571.10	8250.00	583.90	.05	.26	.03	8170.99	12.80	738.38
6.22	1670.00	0.00	0.00	571.10	11100.00	585.19	.16	.28	.03	10938.87	14.09	835.98
6.52	1573.00	0.00	0.00	569.10	4630.00	582.15	.04	.14	.00	4630.00	13.05	427.02
6.52	1573.00	0.00	0.00	569.10	7100.00	583.50	.05	.17	.00	7100.00	14.40	463.83
6.52	1573.00	0.00	0.00	569.10	8250.00	584.07	.07	.18	.00	8250.00	14.97	476.80
6.52	1573.00	0.00	0.00	569.10	11100.00	585.36	.09	.19	.01	11100.00	16.26	496.00

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW RIVER BASIN

3) WATERCOURSE: SAGINAW RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

THIS RUN EXECUTED 19AUG91 15:08 18

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*************************************************
  HEC2 RELEASE DATED SEP 88 UPDATED JUN  1990

  ERROR CORR -  01,02,03,04
  MODIFICATION -
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

100-YEAR FLOOD

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
0.023	579.34	0.00	579.58	1297.10	0.00	66100.00	0.00	0.00	0.00	44.00	1396.00	0.00
0.023	579.44	0.10	579.68	1296.82	0.00	66100.00	0.00	1297.00	99.00	44.00	1396.00	1396.00
0.335	579.55	0.00	579.86	1015.82	0.00	66100.00	0.00	0.00	0.00	349.00	1401.00	0.00
0.335	579.65	0.09	579.95	1015.75	0.00	66100.00	0.00	1016.00	385.00	349.00	1401.00	1401.00
1.189	580.45	0.00	580.71	1520.24	0.00	66100.00	0.00	0.00	0.00	299.00	1911.00	0.00
1.189	580.52	0.07	580.78	1520.00	0.00	66100.00	0.00	1520.00	317.00	299.00	1911.00	1837.00
1.761	580.89	0.00	581.30	687.59	0.00	66100.00	0.00	0.00	0.00	297.00	1002.00	0.00
1.761	580.95	0.06	581.36	687.00	0.00	66100.00	0.00	687.00	308.00	297.00	1002.00	995.00
2.223	581.32	0.00	581.67	773.98	0.00	66100.00	0.00	0.00	0.00	499.00	1281.00	0.00
2.223	581.38	0.06	581.73	773.78	0.00	66100.00	0.00	774.00	507.00	499.00	1281.00	1281.00
2.576	581.62	0.00	581.87	733.28	0.00	66100.00	0.00	0.00	0.00	64.00	801.00	0.00
2.576	581.67	0.06	581.93	732.85	0.00	66100.00	0.00	733.00	67.00	64.00	801.00	800.00
2.808	581.70	0.00	582.00	683.00	0.00	66100.00	0.00	0.00	0.00	400.00	1083.00	0.00
2.808	581.75	0.06	582.05	683.00	0.00	66100.00	0.00	0.00	400.00	400.00	1083.00	1083.00
2.809	581.65	0.00	582.01	623.00	0.00	66100.00	0.00	0.00	0.00	400.00	1083.00	0.00
2.809	581.70	0.06	582.07	623.00	0.00	66100.00	0.00	0.00	400.00	400.00	1083.00	1083.00
2.813	581.65	0.00	582.02	623.00	0.00	66100.00	0.00	0.00	0.00	400.00	1083.00	0.00
2.813	581.70	0.06	582.07	623.00	0.00	66100.00	0.00	0.00	400.00	400.00	1083.00	1083.00
2.814	581.72	0.00	582.02	683.00	0.00	66100.00	0.00	0.00	0.00	400.00	1083.00	0.00
2.814	581.78	0.06	582.08	683.00	0.00	66100.00	0.00	0.00	400.00	400.00	1083.00	1083.00
2.947	581.89	0.00	582.11	1081.15	0.00	66100.00	0.00	0.00	0.00	35.00	1115.00	0.00
2.947	581.94	0.05	582.16	1080.00	0.00	66100.00	0.00	0.00	35.00	35.00	1115.00	1115.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	3.350	582.11	0.00	582.37	1138.56	0.00	66099.98	0.02	0.00	0.00	59.00	1193.00	0.00
	3.350	582.16	0.05	582.42	1134.00	0.00	66100.00	0.00	0.00	59.00	59.00	1193.00	1193.00
	3.600	582.23	0.00	582.52	672.35	0.00	66100.00	0.00	0.00	0.00	500.00	1200.00	0.00
	3.600	582.28	0.05	582.57	672.00	0.00	66100.00	0.00	672.00	519.00	500.00	1200.00	1191.00
*	3.601	582.13	0.00	582.55	581.10	0.00	66100.00	0.00	0.00	0.00	500.00	1200.00	0.00
*	3.601	582.18	0.05	582.59	580.00	0.00	66100.00	0.00	669.00	521.00	500.00	1200.00	1190.00
	3.615	582.14	0.00	582.56	581.26	0.00	66100.00	0.00	0.00	0.00	500.00	1200.00	0.00
	3.615	582.20	0.05	582.61	580.00	0.00	66100.00	0.00	669.00	521.00	500.00	1200.00	1190.00
*	3.616	582.29	0.00	582.57	674.30	0.00	66100.00	0.00	0.00	0.00	500.00	1200.00	0.00
*	3.616	582.34	0.05	582.62	674.00	0.00	66100.00	0.00	674.00	518.00	500.00	1200.00	1192.00
	3.646	582.30	0.00	582.59	744.44	0.10	66099.90	0.00	0.00	0.00	400.00	1143.00	0.00
	3.646	582.35	0.05	582.64	744.33	0.13	66099.87	0.00	745.00	398.00	400.00	1143.00	1143.00
	3.689	582.28	0.00	582.62	606.19	0.00	66100.00	0.00	0.00	0.00	400.00	1025.00	0.00
	3.689	582.33	0.05	582.67	606.00	0.00	66100.00	0.00	606.00	419.00	400.00	1025.00	1025.00
	3.690	582.24	0.00	582.63	557.00	0.00	66100.00	0.00	0.00	0.00	400.00	1025.00	0.00
	3.690	582.29	0.05	582.68	557.00	0.00	66100.00	0.00	603.00	422.00	400.00	1025.00	1025.00
	3.697	582.25	0.00	582.64	557.00	0.00	66100.00	0.00	0.00	0.00	400.00	1025.00	0.00
	3.697	582.30	0.05	582.69	557.00	0.00	66100.00	0.00	603.00	422.00	400.00	1025.00	1025.00
	3.698	582.30	0.00	582.64	606.32	0.00	66100.00	0.00	0.00	0.00	400.00	1025.00	0.00
	3.698	582.35	0.05	582.69	606.00	0.00	66100.00	0.00	606.00	419.00	400.00	1025.00	1025.00
	4.366	582.72	0.00	582.98	763.17	0.00	66100.00	0.00	0.00	0.00	298.00	1065.00	0.00
	4.366	582.77	0.05	583.03	762.84	0.00	66100.00	0.00	763.00	299.00	298.00	1065.00	1062.00
	4.677	582.83	0.00	583.14	657.00	0.00	66100.00	0.00	0.00	0.00	300.00	957.00	0.00
	4.677	582.88	0.05	583.18	657.00	0.00	66100.00	0.00	0.00	300.00	300.00	957.00	957.00
	4.678	582.79	0.00	583.15	612.00	0.00	66100.00	0.00	0.00	0.00	300.00	957.00	0.00
	4.678	582.84	0.05	583.19	612.00	0.00	66100.00	0.00	0.00	300.00	300.00	957.00	957.00
	4.682	582.79	0.00	583.15	612.00	0.00	66100.00	0.00	0.00	0.00	300.00	957.00	0.00
	4.682	582.84	0.05	583.20	612.00	0.00	66100.00	0.00	0.00	300.00	300.00	957.00	957.00
	4.683	582.85	0.00	583.16	657.00	0.00	66100.00	0.00	0.00	0.00	300.00	957.00	0.00
	4.683	582.89	0.05	583.20	657.00	0.00	66100.00	0.00	0.00	300.00	300.00	957.00	957.00
	4.835	583.01	0.00	583.23	836.39	0.65	66099.35	0.00	0.00	0.00	124.00	946.00	0.00
	4.835	583.05	0.05	583.28	822.00	0.00	66100.00	0.00	0.00	124.00	124.00	946.00	946.00
	4.967	583.03	0.00	583.30	807.00	0.00	66100.00	0.00	0.00	0.00	100.00	907.00	0.00
	4.967	583.07	0.05	583.35	807.00	0.00	66100.00	0.00	0.00	100.00	100.00	907.00	907.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	4.968	582.98	0.00	583.32	732.00	0.00	66100.00	0.00	0.00	0.00	100.00	907.00	0.00
	4.968	583.03	0.05	583.36	732.00	0.00	66100.00	0.00	0.00	100.00	100.00	907.00	907.00
	4.975	582.99	0.00	583.32	732.00	0.00	66100.00	0.00	0.00	0.00	100.00	907.00	0.00
	4.975	583.03	0.05	583.37	732.00	0.00	66100.00	0.00	0.00	100.00	100.00	907.00	907.00
	4.976	583.05	0.00	583.33	807.00	0.00	66100.00	0.00	0.00	0.00	100.00	907.00	0.00
	4.976	583.10	0.04	583.37	807.00	0.00	66100.00	0.00	0.00	100.00	100.00	907.00	907.00
	5.152	583.12	0.00	583.44	750.27	0.66	65899.34	0.00	0.00	0.00	599.00	1331.00	0.00
	5.152	583.17	0.04	583.48	732.00	0.00	65900.00	0.00	0.00	599.00	599.00	1331.00	1331.00
	5.325	583.18	0.00	583.55	619.65	0.77	65898.25	0.98	0.00	0.00	280.00	877.00	0.00
	5.325	583.23	0.04	583.59	597.00	0.00	65900.00	0.00	0.00	280.00	280.00	877.00	877.00
*	5.326	583.05	0.00	583.58	514.54	0.83	65899.17	0.00	0.00	0.00	280.00	877.00	0.00
*	5.326	583.09	0.04	583.63	507.00	0.00	65900.00	0.00	0.00	280.00	280.00	877.00	877.00
	5.339	583.07	0.00	583.60	515.50	0.85	65899.12	0.03	0.00	0.00	280.00	877.00	0.00
	5.339	583.11	0.04	583.64	507.00	0.00	65900.00	0.00	0.00	280.00	280.00	877.00	877.00
*	5.340	583.25	0.00	583.62	625.36	0.87	65897.80	1.33	0.00	0.00	280.00	877.00	0.00
*	5.340	583.29	0.04	583.66	597.00	0.00	65900.00	0.00	0.00	280.00	280.00	877.00	877.00
	5.905	583.73	0.00	584.02	1444.95	4.37	65825.53	70.10	0.00	0.00	182.00	1346.00	0.00
	5.905	583.78	0.04	584.06	1164.00	0.00	65900.00	0.00	1164.00	182.00	182.00	1346.00	1346.00
	6.222	583.91	0.00	584.30	598.61	3.48	57643.82	2.70	900.00	933.00	989.00	1568.00	1833.00
	6.222	583.95	0.04	584.34	579.00	0.00	57650.00	0.00	0.14	989.00	989.00	1568.00	1568.00
	6.519	584.12	0.00	584.48	447.00	0.00	57650.00	0.00	1020.00	1106.00	1390.00	1837.00	2126.00
	6.519	584.16	0.04	584.52	447.00	0.00	57650.00	0.00	0.15	1390.00	1390.00	1837.00	1837.00
*	6.520	583.92	0.00	584.53	367.00	0.00	57650.00	0.00	800.00	1106.00	1390.00	1837.00	1906.00
*	6.520	583.96	0.04	584.57	367.00	0.00	57650.00	0.00	0.18	1390.00	1390.00	1837.00	1837.00
	6.528	583.93	0.00	584.54	367.00	0.00	57650.00	0.00	800.00	1106.00	1390.00	1837.00	1906.00
	6.528	583.97	0.04	584.58	367.00	0.00	57650.00	0.00	0.18	1390.00	1390.00	1837.00	1837.00
*	6.529	584.21	0.00	584.57	447.00	0.00	57650.00	0.00	1020.00	1106.00	1390.00	1837.00	2126.00
*	6.529	584.25	0.04	584.60	447.00	0.00	57650.00	0.00	0.13	1390.00	1390.00	1837.00	1837.00
	7.016	584.54	0.00	584.85	778.20	0.00	57646.14	3.86	815.00	2030.00	2030.00	2760.00	2845.00
	7.016	584.58	0.04	584.89	730.00	0.00	57650.00	0.00	0.18	2030.00	2030.00	2760.00	2760.00
	7.567	584.89	0.00	585.13	934.29	45.99	57583.58	20.43	1300.00	1190.00	1742.00	2400.00	2490.00
	7.567	584.92	0.03	585.16	658.00	0.00	57650.00	0.00	0.15	1742.00	1742.00	2400.00	2400.00
	8.099	585.06	0.00	585.40	635.23	95.22	57531.95	22.83	640.00	1342.00	1432.00	1952.00	1962.00
	8.099	585.09	0.03	585.43	520.00	0.00	57650.00	0.00	0.18	1432.00	1432.00	1952.00	1952.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	8.241	585.24	0.00	585.49	1515.79	410.44	65489.56	0.00	1927.00	0.00	1111.00	1927.00	1927.00
	8.241	585.27	0.03	585.52	913.00	208.99	65691.01	0.00	913.00	1010.00	1111.00	1927.00	1923.00
	9.079	585.76	0.00	585.95	1873.24	25.87	63734.40	3339.72	1900.00	0.00	21.00	1086.00	1900.00
	9.079	585.79	0.03	585.99	1721.89	0.00	64436.77	2663.23	0.15	21.00	21.00	1086.00	1745.92
	9.584	586.06	0.00	586.27	2127.99	4762.73	60025.92	2311.35	2250.00	0.00	660.00	1743.00	2250.00
	9.584	586.09	0.03	586.34	1580.00	390.40	64219.17	2490.44	1580.00	560.00	660.00	1743.00	2140.00
	10.240	586.46	0.00	586.62	2361.34	14188.83	52901.86	9.32	0.00	0.00	1575.00	2358.00	0.00
	10.240	586.55	0.09	586.71	2275.00	13759.22	53340.78	0.00	0.01	83.00	1575.00	2358.00	2358.00
	10.993	586.74	0.00	587.02	1006.10	0.00	68379.85	20.15	1290.00	80.00	70.00	1071.00	1370.00
	10.993	586.84	0.10	587.12	991.00	0.00	68400.00	0.00	991.00	80.00	70.00	1071.00	1071.00
	11.433	587.01	0.00	587.32	850.00	0.00	68400.00	0.00	850.00	210.00	70.00	1071.00	1060.00
	11.433	587.10	0.09	587.41	850.00	0.00	68400.00	0.00	850.00	210.00	70.00	1071.00	1060.00
	11.802	587.19	0.00	587.59	1062.05	2502.77	65864.82	32.41	1115.00	380.00	824.00	1426.00	1495.00
	11.802	587.27	0.08	587.67	923.23	2008.95	66391.05	0.00	0.05	502.77	824.00	1426.00	1426.00
	12.569	587.82	0.00	587.99	1656.26	9857.59	58350.49	191.92	0.00	0.00	784.00	1616.00	0.00
	12.569	587.90	0.09	588.10	1416.00	7894.63	60505.37	0.00	1416.00	200.00	784.00	1616.00	1616.00
	13.249	587.98	0.00	588.33	1092.29	593.57	67604.52	201.91	1176.00	230.00	610.00	1187.00	1406.00
	13.249	588.09	0.11	588.43	1085.00	641.71	67541.83	216.46	1085.00	230.00	610.00	1187.00	1315.00
	13.747	588.31	0.00	588.58	1320.99	39.73	61444.65	6915.62	1355.00	275.00	365.00	1013.00	1630.00
	13.747	588.40	0.09	588.69	1195.00	46.73	62545.95	5807.32	1195.00	305.00	365.00	1013.00	1500.00
	14.385	588.55	0.00	588.91	600.00	115.21	67967.61	317.18	600.00	780.00	799.00	1335.00	1380.00
	14.385	588.66	0.10	589.02	536.62	1.36	68398.64	0.00	0.04	798.38	799.00	1335.00	1335.00
	14.406	588.52	0.00	588.93	541.56	0.00	68400.00	0.00	0.00	0.00	4.00	590.00	0.00
	14.406	588.63	0.11	589.03	540.00	0.00	68400.00	0.00	540.00	27.00	4.00	590.00	567.00
*	14.407	588.34	0.00	588.97	451.09	0.00	68400.00	0.00	0.00	0.00	4.00	590.00	0.00
*	14.407	588.45	0.11	589.08	450.00	0.00	68400.00	0.00	540.00	27.00	4.00	590.00	567.00
	14.420	588.36	0.00	588.99	451.13	0.00	68400.00	0.00	0.00	0.00	4.00	590.00	0.00
	14.420	588.47	0.11	589.10	450.00	0.00	68400.00	0.00	540.00	27.00	4.00	590.00	567.00
*	14.421	588.62	0.00	589.02	541.79	0.00	68400.00	0.00	0.00	0.00	4.00	590.00	0.00
*	14.421	588.73	0.11	589.12	540.00	0.00	68400.00	0.00	540.00	27.00	4.00	590.00	567.00
	15.156	589.12	0.00	589.42	713.00	0.00	68400.00	0.00	713.00	1567.00	1567.00	2370.00	2280.00
	15.156	589.22	0.10	589.52	713.00	0.00	68400.00	0.00	713.00	1567.00	1567.00	2370.00	2280.00
	15.470	589.21	0.00	589.61	796.17	561.04	66765.26	1073.70	800.00	2010.00	2114.00	2645.00	2810.00
	15.470	589.30	0.09	589.71	635.00	593.00	67807.00	0.00	635.00	2010.00	2114.00	2645.00	2645.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	15.612	589.29	0.00	589.69	710.00	90.68	67125.93	1183.39	710.00	2100.00	2114.00	2645.00	2810.00
	15.612	589.38	0.09	589.79	545.00	95.41	68304.59	0.00	545.00	2100.00	2114.00	2645.00	2645.00
	16.169	589.68	0.00	590.02	822.76	346.40	68053.60	0.00	1084.00	1000.00	1075.00	2084.00	2084.00
	16.169	589.80	0.12	590.14	750.53	0.00	68400.00	0.00	0.08	1075.00	1075.00	2084.00	2084.00
	16.500	589.92	0.00	590.20	659.00	0.00	68400.00	0.00	659.00	832.00	832.00	1491.00	1491.00
	16.500	590.03	0.11	590.31	659.00	0.00	68400.00	0.00	0.01	832.00	832.00	1491.00	1491.00
	16.758	589.96	0.00	590.31	577.36	12.83	67705.97	281.20	0.00	0.00	54.00	501.00	0.00
	16.758	590.07	0.11	590.42	447.00	0.00	68000.00	0.00	0.00	54.00	54.00	501.00	501.00
	16.775	589.93	0.00	590.33	561.19	0.00	68000.00	0.00	570.00	770.00	770.00	1340.00	1340.00
	16.775	590.05	0.11	590.44	560.00	0.00	68000.00	0.00	560.00	770.00	770.00	1340.00	1330.00
*	16.776	589.86	0.00	590.35	506.33	0.00	68000.00	0.00	572.00	770.00	770.00	1342.00	1342.00
*	16.776	589.97	0.11	590.46	506.00	0.00	68000.00	0.00	561.00	770.00	770.00	1342.00	1331.00
	16.781	589.87	0.00	590.36	506.35	0.00	68000.00	0.00	572.00	770.00	770.00	1342.00	1342.00
	16.781	589.98	0.11	590.47	506.00	0.00	68000.00	0.00	561.00	770.00	770.00	1342.00	1331.00
*	16.782	589.97	0.00	590.37	561.26	0.00	68000.00	0.00	570.00	770.00	770.00	1340.00	1340.00
*	16.782	590.08	0.11	590.48	561.00	0.00	68000.00	0.00	561.00	770.00	770.00	1340.00	1331.00
	17.282	590.30	0.00	590.64	592.00	0.00	68000.00	0.00	592.00	320.00	320.00	912.00	912.00
	17.282	590.40	0.11	590.75	592.00	0.00	68000.00	0.00	0.02	320.00	320.00	912.00	912.00
	17.758	590.45	0.00	590.93	450.00	0.00	68000.00	0.00	450.00	540.00	540.00	990.00	990.00
	17.758	590.55	0.10	591.02	450.00	0.00	68000.00	0.00	0.02	540.00	540.00	990.00	990.00
	17.790	590.71	0.00	590.96	729.76	0.00	68000.00	0.00	0.00	0.00	1125.00	1857.00	0.00
	17.790	590.81	0.09	591.06	729.00	0.00	68000.00	0.00	729.00	1126.00	1125.00	1857.00	1855.00
*	17.791	590.68	0.00	590.97	697.00	0.00	68000.00	0.00	0.00	0.00	1125.00	1857.00	0.00
*	17.791	590.77	0.09	591.06	697.00	0.00	68000.00	0.00	0.00	1125.00	1125.00	1857.00	1857.00
	17.797	590.68	0.00	590.98	697.00	0.00	68000.00	0.00	0.00	0.00	1125.00	1857.00	0.00
	17.797	590.78	0.09	591.07	697.00	0.00	68000.00	0.00	0.00	1125.00	1125.00	1857.00	1857.00
*	17.798	590.73	0.00	590.98	729.77	0.00	68000.00	0.00	0.00	0.00	1125.00	1857.00	0.00
*	17.798	590.82	0.09	591.07	729.00	0.00	68000.00	0.00	729.00	1126.00	1125.00	1857.00	1855.00
	18.134	590.77	0.00	591.17	560.00	0.00	68000.00	0.00	560.00	1275.00	1275.00	1835.00	1835.00
	18.134	590.87	0.09	591.25	560.00	0.00	68000.00	0.00	0.03	1275.00	1275.00	1835.00	1835.00
	18.160	590.76	0.00	591.19	550.78	0.00	67999.92	0.08	650.00	1100.00	1000.00	1640.00	1750.00
	18.160	590.85	0.09	591.28	540.00	0.00	68000.00	0.00	540.00	1100.00	1000.00	1640.00	1640.00
	18.161	590.74	0.00	591.19	516.00	0.00	68000.00	0.00	650.00	1100.00	1063.00	1700.00	1750.00
	18.161	590.83	0.09	591.28	516.00	0.00	68000.00	0.00	531.00	1100.00	1063.00	1700.00	1631.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	18.180	590.76	0.00	591.21	516.00	0.00	68000.00	0.00	650.00	1100.00	1063.00	1700.00	1750.00
	18.180	590.85	0.09	591.30	516.00	0.00	68000.00	0.00	531.00	1100.00	1063.00	1700.00	1631.00
	18.181	590.79	0.00	591.22	552.75	0.00	67999.87	0.13	650.00	1100.00	1000.00	1640.00	1750.00
	18.181	590.88	0.09	591.30	546.00	0.00	67999.73	0.27	546.00	1100.00	1000.00	1640.00	1646.00
	18.267	590.88	0.00	591.27	518.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
	18.267	590.96	0.09	591.36	518.00	0.00	68000.00	0.00	0.01	1075.00	1075.00	1593.00	1593.00
*	18.268	590.81	0.00	591.29	500.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
*	18.268	590.90	0.09	591.37	500.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
	18.273	590.82	0.00	591.29	500.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
	18.273	590.91	0.09	591.38	500.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
*	18.274	590.91	0.00	591.30	518.00	0.00	68000.00	0.00	518.00	1075.00	1075.00	1593.00	1593.00
*	18.274	591.00	0.09	591.39	518.00	0.00	68000.00	0.00	0.01	1075.00	1075.00	1593.00	1593.00
	18.335	590.88	0.00	591.35	430.00	0.00	68000.00	0.00	430.00	418.00	418.00	848.00	848.00
	18.335	590.97	0.09	591.44	430.00	0.00	68000.00	0.00	0.00	418.00	418.00	848.00	848.00
	18.430	590.91	0.00	591.42	439.18	0.00	67997.77	2.23	441.00	400.00	400.00	840.50	841.00
	18.430	591.00	0.09	591.50	438.50	0.00	68000.00	0.00	438.50	402.00	400.00	840.50	840.50
*	18.431	590.77	0.00	591.46	428.50	0.00	68000.00	0.00	441.00	400.00	400.00	840.50	841.00
*	18.431	590.86	0.09	591.54	428.50	0.00	68000.00	0.00	0.00	400.00	400.00	840.50	840.50
	18.444	590.79	0.00	591.48	428.50	0.00	68000.00	0.00	441.00	400.00	400.00	840.50	841.00
	18.444	590.88	0.09	591.56	428.50	0.00	68000.00	0.00	0.00	400.00	400.00	840.50	840.50
*	18.445	590.99	0.00	591.50	439.20	0.00	67997.77	2.23	441.00	400.00	400.00	840.50	841.00
*	18.445	591.08	0.09	591.58	438.50	0.00	68000.00	0.00	438.50	402.00	400.00	840.50	840.50
	18.598	591.06	0.00	591.61	435.00	0.00	68000.00	0.00	435.00	265.00	265.00	700.00	700.00
	18.598	591.15	0.09	591.70	435.00	0.00	68000.00	0.00	0.00	265.00	265.00	700.00	700.00
	18.871	591.32	0.00	591.81	460.00	0.00	68000.00	0.00	460.00	190.00	190.00	650.00	650.00
	18.871	591.41	0.08	591.89	460.00	0.00	68000.00	0.00	0.01	190.00	190.00	650.00	650.00
	18.938	591.45	0.00	591.86	550.00	0.00	68000.00	0.00	0.00	0.00	300.00	850.00	0.00
	18.938	591.53	0.08	591.94	550.00	0.00	68000.00	0.00	0.00	300.00	300.00	850.00	850.00
*	18.939	591.34	0.00	591.89	479.00	0.00	68000.00	0.00	0.00	0.00	300.00	850.00	0.00
*	18.939	591.42	0.08	591.97	479.00	0.00	68000.00	0.00	0.00	300.00	300.00	850.00	850.00
	18.944	591.34	0.00	591.89	479.00	0.00	68000.00	0.00	0.00	0.00	300.00	850.00	0.00
	18.944	591.43	0.08	591.97	479.00	0.00	68000.00	0.00	0.00	300.00	300.00	850.00	850.00
*	18.945	591.50	0.00	591.91	550.00	0.00	68000.00	0.00	0.00	0.00	300.00	850.00	0.00
*	18.945	591.58	0.08	591.99	550.00	0.00	68000.00	0.00	0.00	300.00	300.00	850.00	850.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	GLOB	QCH	GROB	PERENC	STENCL	STCHL	STCHR	STENCR
	19.432	591.75	0.00	592.26	510.00	0.00	68000.00	0.00	510.00	390.00	390.00	900.00	900.00
	19.432	591.83	0.08	592.34	510.00	0.00	68000.00	0.00	0.02	390.00	390.00	900.00	900.00
	19.462	591.88	0.00	592.30	575.83	0.00	68000.00	0.00	603.00	730.00	730.00	1333.00	1333.00
	19.462	591.96	0.08	592.37	575.00	0.00	68000.00	0.00	575.00	730.00	730.00	1333.00	1305.00
	19.463	591.86	0.00	592.30	555.70	0.00	68000.00	0.00	603.00	730.00	730.00	1333.00	1333.00
	19.463	591.93	0.08	592.38	555.00	0.00	68000.00	0.00	575.00	730.00	730.00	1333.00	1305.00
	19.476	591.87	0.00	592.32	555.75	0.00	68000.00	0.00	603.00	730.00	730.00	1333.00	1333.00
	19.476	591.95	0.08	592.39	555.00	0.00	68000.00	0.00	575.00	730.00	730.00	1333.00	1305.00
	19.477	591.91	0.00	592.32	575.95	0.00	68000.00	0.00	603.00	730.00	730.00	1333.00	1333.00
	19.477	591.99	0.08	592.40	575.00	0.00	68000.00	0.00	575.00	730.00	730.00	1333.00	1305.00
	20.115	592.29	0.00	592.75	513.17	0.00	68000.00	0.00	524.00	386.00	386.50	910.00	910.00
	20.115	592.36	0.07	592.82	512.00	0.00	68000.00	0.00	512.00	398.00	386.50	910.00	910.00
*	20.116	592.17	0.00	592.78	449.20	0.00	68000.00	0.00	524.00	386.00	386.50	910.00	910.00
*	20.116	592.24	0.07	592.85	448.00	0.00	68000.00	0.00	510.00	400.00	386.50	910.00	910.00
	20.128	592.19	0.00	592.80	449.41	0.00	68000.00	0.00	524.00	386.00	386.50	910.00	910.00
	20.128	592.26	0.07	592.87	448.00	0.00	68000.00	0.00	510.00	400.00	386.50	910.00	910.00
*	20.129	592.35	0.00	592.81	514.26	0.00	68000.00	0.00	524.00	386.00	386.50	910.00	910.00
*	20.129	592.42	0.07	592.88	513.00	0.00	68000.00	0.00	513.00	397.00	386.50	910.00	910.00
	20.287	592.60	0.00	592.92	690.00	0.00	68000.00	0.00	690.00	120.00	120.00	810.00	810.00
	20.287	592.67	0.07	592.99	690.00	0.00	68000.00	0.00	690.00	120.00	120.00	810.00	810.00
	20.513	592.68	0.00	593.06	619.47	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
	20.513	592.75	0.07	593.13	619.78	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
*	20.514	592.66	0.00	593.07	595.33	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
*	20.514	592.72	0.07	593.14	595.64	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
	20.527	592.68	0.00	593.09	595.39	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
	20.527	592.74	0.07	593.15	595.70	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
*	20.528	592.71	0.00	593.09	619.60	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
*	20.528	592.78	0.07	593.16	619.91	0.00	68000.00	0.00	0.00	0.00	735.00	1360.00	0.00
	21.059	593.02	0.00	593.42	598.93	0.00	68000.00	0.00	605.00	1615.00	1615.00	2220.00	2220.00
	21.059	593.08	0.06	593.48	597.76	0.00	68000.00	0.00	598.00	1615.00	1615.00	2220.00	2213.00
	21.092	593.14	0.00	593.45	781.74	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.092	593.21	0.06	593.51	781.94	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.093	593.13	0.00	593.45	763.72	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.093	593.20	0.06	593.51	763.92	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	21.108	593.15	0.00	593.46	763.74	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.108	593.21	0.06	593.52	763.94	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.109	593.16	0.00	593.46	781.77	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.109	593.22	0.06	593.52	781.97	0.00	68000.00	0.00	0.00	0.00	1165.00	1960.00	0.00
	21.722	593.59	0.00	593.73	1770.00	26928.22	41071.78	0.00	1770.00	530.00	1781.00	2478.00	2300.00
	21.722	593.63	0.04	593.82	1500.00	22399.33	45600.66	0.00	1500.00	800.00	1781.00	2478.00	2300.00
*	22.186	593.77	0.00	593.84	3187.02	25740.78	34406.07	7853.15	3200.00	0.00	1815.00	2387.00	3200.00
	22.186	593.82	0.05	593.98	1900.00	9222.29	48691.62	10086.08	1900.00	1200.00	1815.00	2387.00	3100.00

100-YEAR FLOOD

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	0.023	0.00	0.00	0.00	552.90	66100.00	579.34	0.00	579.58	1.57	3.96	16696.02	52723.91
	0.023	0.00	0.00	0.00	552.90	66100.00	579.44	0.00	579.68	1.53	3.93	16825.69	53412.36
	0.335	1650.00	0.00	0.00	550.80	66100.00	579.55	0.00	579.86	1.65	4.46	14834.24	51501.93
	0.335	1650.00	0.00	0.00	550.80	66100.00	579.65	0.00	579.95	1.61	4.43	14929.67	52051.87
	1.189	4510.00	0.00	0.00	553.30	66100.00	580.45	0.00	580.71	2.17	4.15	15931.60	44909.77
	1.189	4510.00	0.00	0.00	553.30	66100.00	580.52	0.00	580.78	2.11	4.12	16050.12	45458.75
	1.761	3020.00	0.00	0.00	546.30	66100.00	580.89	0.00	581.30	1.59	5.15	12842.05	52487.20
	1.761	3020.00	0.00	0.00	546.30	66100.00	580.95	0.00	581.36	1.57	5.13	12886.16	52798.46
	2.223	2440.00	0.00	0.00	551.00	66100.00	581.32	0.00	581.67	1.44	4.76	13897.10	55121.95
	2.223	2440.00	0.00	0.00	551.00	66100.00	581.38	0.00	581.73	1.42	4.74	13950.82	55482.13
	2.576	1860.00	0.00	0.00	549.40	66100.00	581.62	0.00	581.87	0.76	4.07	16223.71	75614.37
	2.576	1860.00	0.00	0.00	549.40	66100.00	581.67	0.00	581.93	0.76	4.06	16264.85	75965.73
	2.808	1232.00	0.00	0.00	547.90	66100.00	581.70	0.00	582.00	1.25	4.40	15025.44	59048.55
	2.808	1232.00	0.00	0.00	547.90	66100.00	581.75	0.00	582.05	1.24	4.39	15063.15	59289.66
	2.809	1.00	0.00	0.00	547.90	66100.00	581.65	0.00	582.01	2.09	4.87	13572.78	45712.61
	2.809	1.00	0.00	0.00	547.90	66100.00	581.70	0.00	582.07	2.08	4.86	13607.36	45883.03
	2.813	17.00	0.00	0.00	547.90	66100.00	581.65	0.00	582.02	2.09	4.87	13574.55	45721.33
	2.813	17.00	0.00	0.00	547.90	66100.00	581.70	0.00	582.07	2.07	4.86	13609.55	45893.32
	2.814	1.00	0.00	0.00	547.90	66100.00	581.72	0.00	582.02	1.25	4.39	15042.48	59157.48
	2.814	1.00	0.00	0.00	547.90	66100.00	581.78	0.00	582.08	1.24	4.38	15080.09	59378.11
	2.947	709.00	0.00	0.00	551.80	66100.00	581.89	0.00	582.11	1.02	3.80	17413.13	65365.53
	2.947	709.00	0.00	0.00	551.80	66100.00	581.94	0.00	582.16	1.01	3.78	17471.70	65727.15
	3.350	2130.00	0.00	0.00	551.60	66100.00	582.11	0.00	582.37	1.39	4.08	16181.77	56011.95
	3.350	2130.00	0.00	0.00	551.60	66100.00	582.16	0.00	582.42	1.38	4.07	16230.30	56291.20
	3.600	1322.00	0.00	0.00	544.00	66100.00	582.23	0.00	582.52	0.86	4.31	15349.49	71299.25
	3.600	1322.00	0.00	0.00	544.00	66100.00	582.28	0.00	582.57	0.85	4.30	15383.27	71552.71
*	3.601	1.00	0.00	0.00	544.00	66100.00	582.13	0.00	582.55	1.93	5.18	12769.87	47566.57
*	3.601	1.00	0.00	0.00	544.00	66100.00	582.18	0.00	582.59	1.92	5.16	12799.30	47763.51
	3.615	73.50	0.00	0.00	544.00	66100.00	582.14	0.00	582.56	1.93	5.17	12775.83	47593.12
	3.615	73.50	0.00	0.00	544.00	66100.00	582.20	0.00	582.61	1.91	5.16	12805.19	47795.34
*	3.616	1.00	0.00	0.00	544.00	66100.00	582.29	0.00	582.57	0.86	4.30	15384.05	71379.57
*	3.616	1.00	0.00	0.00	544.00	66100.00	582.34	0.00	582.62	0.85	4.29	15417.71	71640.50

SECND	XLCH	ELTRD	ELLC	ELMIN	G	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01A
3.646	162.50	0.00	0.00	548.90	66100.00	582.30	0.00	582.59	0.95	4.29	15414.96	67816.92
3.646	162.50	0.00	0.00	548.90	66100.00	582.35	0.00	582.64	0.94	4.28	15452.01	68083.15
3.689	231.00	0.00	0.00	547.40	66100.00	582.28	0.00	582.62	1.07	4.71	14034.06	63790.46
3.689	231.00	0.00	0.00	547.40	66100.00	582.33	0.00	582.67	1.07	4.70	14064.28	64026.96
3.690	1.00	0.00	0.00	547.40	66100.00	582.24	0.00	582.63	1.59	5.00	13207.96	52424.08
3.690	1.00	0.00	0.00	547.40	66100.00	582.29	0.00	582.68	1.58	4.99	13235.81	52580.68
3.697	35.50	0.00	0.00	547.40	66100.00	582.25	0.00	582.64	1.59	5.00	13210.60	52438.88
3.697	35.50	0.00	0.00	547.40	66100.00	582.30	0.00	582.69	1.58	4.99	13238.43	52595.38
3.698	1.00	0.00	0.00	547.40	66100.00	582.30	0.00	582.64	1.04	4.71	14046.12	64692.35
3.698	1.00	0.00	0.00	547.40	66100.00	582.35	0.00	582.69	1.04	4.70	14076.28	64936.08
4.366	3550.00	0.00	0.00	548.20	66100.00	582.72	0.00	582.98	0.83	4.08	16195.50	72425.03
4.366	3550.00	0.00	0.00	548.20	66100.00	582.77	0.00	583.03	0.83	4.07	16231.30	72696.52
4.677	1649.00	0.00	0.00	545.50	66100.00	582.83	0.00	583.14	0.96	4.46	14834.63	67450.48
4.677	1649.00	0.00	0.00	545.50	66100.00	582.88	0.00	583.18	0.95	4.45	14864.86	67673.76
4.678	1.00	0.00	0.00	545.50	66100.00	582.79	0.00	583.15	1.58	4.79	13785.27	52578.14
4.678	1.00	0.00	0.00	545.50	66100.00	582.84	0.00	583.19	1.57	4.79	13813.53	52738.55
4.682	20.00	0.00	0.00	545.50	66100.00	582.79	0.00	583.15	1.58	4.79	13786.82	52586.95
4.682	20.00	0.00	0.00	545.50	66100.00	582.84	0.00	583.20	1.57	4.78	13815.44	52749.43
4.683	1.00	0.00	0.00	545.50	66100.00	582.85	0.00	583.16	0.96	4.45	14846.84	67540.60
4.683	1.00	0.00	0.00	545.50	66100.00	582.89	0.00	583.20	0.95	4.44	14877.01	67763.55
4.835	809.00	0.00	0.00	551.00	66100.00	583.01	0.00	583.23	0.73	3.82	17313.63	77315.69
4.835	809.00	0.00	0.00	551.00	66100.00	583.05	0.00	583.28	0.73	3.81	17347.17	77523.32
4.967	702.00	0.00	0.00	553.20	66100.00	583.03	0.00	583.30	1.08	4.22	15681.21	63492.70
4.967	702.00	0.00	0.00	553.20	66100.00	583.07	0.00	583.35	1.08	4.21	15717.59	63733.73
4.968	1.00	0.00	0.00	553.20	66100.00	582.98	0.00	583.32	1.80	4.65	14223.44	49271.58
4.968	1.00	0.00	0.00	553.20	66100.00	583.03	0.00	583.36	1.79	4.64	14256.60	49444.27
4.975	34.00	0.00	0.00	553.20	66100.00	582.99	0.00	583.32	1.80	4.65	14227.03	49290.24
4.975	34.00	0.00	0.00	553.20	66100.00	583.03	0.00	583.37	1.79	4.64	14261.03	49467.33
4.976	1.00	0.00	0.00	553.20	66100.00	583.05	0.00	583.33	1.08	4.21	15701.40	63626.41
4.976	1.00	0.00	0.00	553.20	66100.00	583.10	0.00	583.37	1.07	4.20	15737.66	63866.88
5.152	932.00	0.00	0.00	555.90	65900.00	583.12	0.00	583.44	1.11	4.50	14639.35	62554.43
5.152	932.00	0.00	0.00	555.90	65900.00	583.17	0.00	583.48	1.10	4.49	14668.79	62745.46
5.325	920.00	0.00	0.00	552.90	65900.00	583.18	0.00	583.55	1.09	4.86	13563.57	63051.21
5.325	920.00	0.00	0.00	552.90	65900.00	583.23	0.00	583.59	1.09	4.85	13583.95	63125.52

	SECNO	XLCH	ELTRD	ELLC	ELMIN	G	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	5.326	1.00	0.00	0.00	552.90	65900.00	583.05	0.00	583.58	2.32	5.86	11240.94	43295.62
*	5.326	1.00	0.00	0.00	552.90	65900.00	583.09	0.00	583.63	2.31	5.85	11261.74	43388.72
	5.339	68.00	0.00	0.00	552.90	65900.00	583.07	0.00	583.60	2.31	5.86	11246.89	43328.84
	5.339	68.00	0.00	0.00	552.90	65900.00	583.11	0.00	583.64	2.30	5.85	11269.63	43432.75
*	5.340	1.00	0.00	0.00	552.90	65900.00	583.25	0.00	583.62	1.06	4.85	13605.24	63970.87
*	5.340	1.00	0.00	0.00	552.90	65900.00	583.29	0.00	583.66	1.05	4.84	13623.68	64169.50
	5.905	2990.00	0.00	0.00	556.30	65900.00	583.73	0.00	584.02	1.74	4.31	15416.95	49981.21
	5.905	2990.00	0.00	0.00	556.30	65900.00	583.78	0.00	584.06	1.73	4.31	15303.91	50127.99
	6.222	1670.00	0.00	0.00	553.10	57650.00	583.91	0.00	584.30	1.36	5.05	11417.65	49457.73
	6.222	1670.00	0.00	0.00	553.10	57650.00	583.95	0.00	584.34	1.36	5.04	11428.81	49510.50
	6.519	1573.00	0.00	0.00	546.10	57650.00	584.12	0.00	584.48	0.92	4.82	11967.42	59957.63
	6.519	1573.00	0.00	0.00	546.10	57650.00	584.16	0.00	584.52	0.92	4.81	11984.85	60096.76
*	6.520	1.00	0.00	0.00	546.70	57650.00	583.92	0.00	584.53	2.54	6.27	9194.10	36176.35
*	6.520	1.00	0.00	0.00	546.70	57650.00	583.96	0.00	584.57	2.53	6.26	9208.66	36261.13
	6.528	42.00	0.00	0.00	546.70	57650.00	583.93	0.00	584.54	2.54	6.27	9196.75	36191.78
	6.528	42.00	0.00	0.00	546.70	57650.00	583.97	0.00	584.58	2.53	6.26	9211.89	36279.90
*	6.529	1.00	0.00	0.00	546.10	57650.00	584.21	0.00	584.57	0.91	4.80	12007.06	60274.25
*	6.529	1.00	0.00	0.00	546.10	57650.00	584.25	0.00	584.60	0.91	4.79	12024.33	60412.11
	7.016	2578.00	0.00	0.00	553.00	57650.00	584.54	0.00	584.85	1.28	4.46	12952.97	50949.52
	7.016	2578.00	0.00	0.00	553.00	57650.00	584.58	0.00	584.89	1.27	4.45	12964.77	51121.74
	7.567	2910.00	0.00	0.00	554.10	57650.00	584.89	0.00	585.13	0.72	3.95	14764.68	67987.32
	7.567	2910.00	0.00	0.00	554.10	57650.00	584.92	0.00	585.16	0.72	3.95	14601.29	68071.24
	8.099	2810.00	0.00	0.00	553.00	57650.00	585.06	0.00	585.40	1.13	4.68	12479.22	54304.05
	8.099	2810.00	0.00	0.00	553.00	57650.00	585.09	0.00	585.43	1.13	4.68	12319.07	54201.06
	8.241	750.00	0.00	0.00	554.30	65900.00	585.24	0.00	585.49	1.03	4.04	16849.80	65028.95
	8.241	750.00	0.00	0.00	554.30	65900.00	585.27	0.00	585.52	1.03	4.04	16495.11	65050.21
	9.079	4420.00	0.00	0.00	551.10	67100.00	585.76	0.00	585.95	1.05	3.65	20398.09	65352.42
	9.079	4420.00	0.00	0.00	551.10	67100.00	585.79	0.00	585.99	1.08	3.68	19835.85	64708.76
	9.584	2670.00	0.00	0.00	554.70	67100.00	586.06	0.00	586.27	1.34	3.79	20320.06	57943.92
	9.584	2670.00	0.00	0.00	554.70	67100.00	586.09	0.00	586.34	1.53	4.04	17636.94	54329.85
	10.240	3460.00	0.00	0.00	554.60	67100.00	586.46	0.00	586.62	0.79	3.49	25062.25	75344.15
	10.240	3460.00	0.00	0.00	554.60	67100.00	586.55	0.00	586.71	0.79	3.50	24760.29	75278.58
	10.993	3980.00	0.00	0.00	554.80	68400.00	586.74	0.00	587.02	1.25	4.24	16151.63	61106.73
	10.993	3980.00	0.00	0.00	554.80	68400.00	586.84	0.00	587.12	1.24	4.22	16291.49	61459.90

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	11.433	2325.00	0.00	0.00	554.85	68400.00	587.01	0.00	587.32	1.25	4.45	15353.61	61083.65
	11.433	2325.00	0.00	0.00	554.85	68400.00	587.10	0.00	587.41	1.23	4.43	15430.99	61589.07
	11.802	1945.00	0.00	0.00	554.90	68400.00	587.19	0.00	587.59	1.29	5.14	14657.03	60158.91
	11.802	1945.00	0.00	0.00	554.90	68400.00	587.27	0.00	587.67	1.30	5.16	14251.62	60064.96
	12.569	4050.00	0.00	0.00	553.40	68400.00	587.82	0.00	587.99	0.73	3.60	22483.29	80081.30
	12.569	4050.00	0.00	0.00	553.40	68400.00	587.90	0.00	588.10	0.78	3.72	20954.98	77373.58
	13.249	3590.00	0.00	0.00	554.60	68400.00	587.98	0.00	588.33	0.96	4.74	15285.06	69670.44
	13.249	3590.00	0.00	0.00	554.60	68400.00	588.09	0.00	588.43	0.95	4.71	15405.33	70259.56
	13.747	2630.00	0.00	0.00	553.10	68400.00	588.31	0.00	588.58	0.94	4.39	18134.64	70664.27
	13.747	2630.00	0.00	0.00	553.10	68400.00	588.40	0.00	588.69	0.96	4.45	17540.30	69928.61
	14.385	3370.00	0.00	0.00	553.40	68400.00	588.55	0.00	588.91	0.89	4.30	14502.32	72514.46
	14.385	3370.00	0.00	0.00	553.40	68400.00	588.66	0.00	589.02	0.89	4.81	14223.75	72531.15
	14.406	114.00	0.00	0.00	552.40	68400.00	588.52	0.00	588.93	1.07	5.10	13406.39	66111.34
	14.406	114.00	0.00	0.00	552.40	68400.00	588.63	0.00	589.03	1.05	5.08	13465.21	66639.90
*	14.407	1.00	0.00	0.00	552.40	68400.00	588.34	0.00	588.97	2.87	6.38	10713.72	40386.84
*	14.407	1.00	0.00	0.00	552.40	68400.00	588.45	0.00	589.08	2.83	6.35	10763.74	40678.05
	14.420	70.00	0.00	0.00	552.40	68400.00	588.36	0.00	588.99	2.86	6.38	10719.92	40419.52
	14.420	70.00	0.00	0.00	552.40	68400.00	588.47	0.00	589.10	2.82	6.35	10769.83	40710.89
*	14.421	1.00	0.00	0.00	552.40	68400.00	588.62	0.00	589.02	1.06	5.08	13456.43	66499.72
*	14.421	1.00	0.00	0.00	552.40	68400.00	588.73	0.00	589.12	1.04	5.06	13514.50	67032.28
	15.156	3884.00	0.00	0.00	553.60	68400.00	589.12	0.00	589.42	0.98	4.43	15425.25	69168.57
	15.156	3884.00	0.00	0.00	553.60	68400.00	589.22	0.00	589.52	0.96	4.41	15497.98	69700.04
	15.470	1657.00	0.00	0.00	552.91	68400.00	589.21	0.00	589.61	1.04	5.12	14228.25	66964.89
	15.470	1657.00	0.00	0.00	552.91	68400.00	589.30	0.00	589.71	1.09	5.18	13542.70	65515.61
	15.612	750.00	0.00	0.00	552.60	68400.00	589.29	0.00	589.69	1.00	5.07	14117.10	68358.91
	15.612	750.00	0.00	0.00	552.60	68400.00	589.38	0.00	589.79	1.05	5.14	13361.04	66741.98
	16.169	2940.00	0.00	0.00	552.70	68400.00	589.68	0.00	590.02	1.26	4.66	14881.28	60850.52
	16.169	2940.00	0.00	0.00	552.70	68400.00	589.80	0.00	590.14	1.24	4.66	14687.00	61315.97
	16.500	1750.00	0.00	0.00	554.30	68400.00	589.92	0.00	590.20	0.77	4.22	16218.16	77959.70
	16.500	1750.00	0.00	0.00	554.30	68400.00	590.03	0.00	590.31	0.74	4.20	16293.66	79344.81
	16.758	1360.00	0.00	0.00	548.10	68000.00	589.96	0.00	590.31	0.71	4.73	14645.18	80953.80
	16.758	1360.00	0.00	0.00	548.10	68000.00	590.07	0.00	590.42	0.71	4.73	14365.35	80789.91
	16.775	95.00	0.00	0.00	547.80	68000.00	589.93	0.00	590.33	1.16	5.06	13440.30	63191.31
	16.775	95.00	0.00	0.00	547.80	68000.00	590.05	0.00	590.44	1.14	5.04	13503.70	63756.15

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	16.776	1.00	0.00	0.00	547.80	68000.00	589.86	0.00	590.35	3.17	5.61	12122.77	38213.38
*	16.776	1.00	0.00	0.00	547.80	68000.00	589.97	0.00	590.46	3.13	5.58	12180.75	38422.52
	16.781	27.00	0.00	0.00	547.80	68000.00	589.87	0.00	590.36	3.16	5.61	12125.72	38223.55
	16.781	27.00	0.00	0.00	547.80	68000.00	589.98	0.00	590.47	3.13	5.58	12183.66	38432.93
*	16.782	1.00	0.00	0.00	547.80	68000.00	589.97	0.00	590.37	1.15	5.05	13461.41	63346.23
*	16.782	1.00	0.00	0.00	547.80	68000.00	590.08	0.00	590.48	1.13	5.03	13525.08	63840.72
	17.282	2644.00	0.00	0.00	555.80	68000.00	590.30	0.00	590.64	0.93	4.73	14383.28	70547.82
	17.282	2644.00	0.00	0.00	555.80	68000.00	590.40	0.00	590.75	0.90	4.71	14416.00	71766.14
	17.758	2510.00	0.00	0.00	554.20	68000.00	590.45	0.00	590.93	1.13	5.51	12341.31	63860.18
	17.758	2510.00	0.00	0.00	554.20	68000.00	590.55	0.00	591.02	1.08	5.49	12384.48	65373.82
	17.790	173.00	0.00	0.00	551.20	68000.00	590.71	0.00	590.96	0.75	4.02	16899.31	78499.82
	17.790	173.00	0.00	0.00	551.20	68000.00	590.81	0.00	591.06	0.74	4.01	16967.12	79017.67
*	17.791	1.00	593.00	592.60	551.20	68000.00	590.68	0.00	590.97	1.54	4.33	15696.65	54759.05
*	17.791	1.00	593.00	592.60	551.20	68000.00	590.77	0.00	591.06	1.53	4.32	15750.05	55038.27
	17.797	32.00	593.00	592.60	551.20	68000.00	590.68	0.00	590.98	1.54	4.33	15698.73	54769.92
	17.797	32.00	593.00	592.60	551.20	68000.00	590.78	0.00	591.07	1.53	4.32	15752.82	55052.77
*	17.798	1.00	0.00	0.00	551.20	68000.00	590.73	0.00	590.98	0.75	4.02	16912.09	78576.37
*	17.798	1.00	0.00	0.00	551.20	68000.00	590.82	0.00	591.07	0.74	4.00	16979.85	79114.13
	18.134	1783.00	0.00	0.00	558.10	68000.00	590.77	0.00	591.17	1.06	5.02	13533.84	65997.04
	18.134	1783.00	0.00	0.00	558.10	68000.00	590.87	0.00	591.25	1.02	5.01	13584.76	67318.50
	18.160	141.00	0.00	0.00	556.80	68000.00	590.76	0.00	591.19	1.17	5.25	12961.62	62759.55
	18.160	141.00	0.00	0.00	556.80	68000.00	590.85	0.00	591.28	1.16	5.23	13009.74	63079.60
	18.161	1.00	0.00	0.00	556.80	68000.00	590.74	0.00	591.19	2.09	5.41	12568.93	47063.22
	18.161	1.00	0.00	0.00	556.80	68000.00	590.83	0.00	591.28	1.83	5.39	12615.79	50284.08
	18.180	96.00	0.00	0.00	556.80	68000.00	590.76	0.00	591.21	2.08	5.41	12577.00	47105.97
	18.180	96.00	0.00	0.00	556.80	68000.00	590.85	0.00	591.30	1.83	5.39	12623.20	50324.34
	18.181	1.00	0.00	0.00	556.80	68000.00	590.79	0.00	591.22	1.17	5.24	12977.96	62886.56
	18.181	1.00	0.00	0.00	556.80	68000.00	590.88	0.00	591.30	1.16	5.22	13025.70	63264.60
	18.267	467.00	0.00	0.00	552.60	68000.00	590.88	0.00	591.27	1.01	5.04	13497.64	67585.13
	18.267	467.00	0.00	0.00	552.60	68000.00	590.96	0.00	591.36	1.00	5.02	13545.48	67969.44
*	18.268	1.00	589.10	593.30	552.60	68000.00	590.81	0.00	591.29	2.36	5.53	12306.40	44239.83
*	18.268	1.00	589.10	593.30	552.60	68000.00	590.90	0.00	591.37	2.35	5.51	12345.49	44395.47
	18.273	26.00	589.10	593.30	552.60	68000.00	590.82	0.00	591.29	2.36	5.52	12308.37	44247.66
	18.273	26.00	589.10	593.30	552.60	68000.00	590.91	0.00	591.38	2.35	5.51	12347.43	44403.20

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
*	18.274	1.00	0.00	0.00	552.60	68000.00	590.91	0.00	591.30	1.01	5.03	13516.74	67738.56
*	18.274	1.00	0.00	0.00	552 60	68000.00	591.00	0.00	591.39	1.00	5 01	13561.72	68100.13
	18.335	326.00	0.00	0.00	555.70	68000.00	590.88	0.00	591.35	1.10	5.49	12391.01	64796.58
	18.335	326.00	0.00	0.00	555.70	68000.00	590.97	0.00	591.44	1.09	5.47	12428.27	65105.58
	18.430	507.00	0.00	0.00	555.40	68000.00	590.91	0.00	591.42	1.25	5.70	11930.33	60747.71
	18.430	507.00	0.00	0.00	555.40	68000.00	591.00	0.00	591.50	1.29	5.68	11961.64	59815 05
*	18 431	1.00	0.00	0.00	555.40	68000.00	590.77	0.00	591.46	3.51	6.66	10217.17	36271 51
*	18.431	1.00	0.00	0.00	555.40	68000.00	590.86	0.00	591.54	3 48	6.63	10255.34	36466.30
	18.444	64.00	0.00	0.00	555.40	68000.00	590.79	0.00	591.48	3.51	6.65	10223.70	36304.78
	18.444	64.00	0.00	0.00	555.40	68000.00	590.88	0.00	591.56	3.47	6.62	10264.83	36514.79
*	18.445	1 00	0.00	0.00	555.40	68000.00	590.99	0.00	591.50	1.24	5.69	11965.93	61042.79
*	18.445	1.00	0.00	0.00	555.40	68000.00	591.08	0.00	591.58	1.28	5.67	11996.79	60095.05
	18.598	817.00	0.00	0.00	558.90	68000.00	591.06	0.00	591.61	1.39	5 97	11392.20	57575.57
	18.598	817 00	0.00	0.00	558.90	68000.00	591.15	0.00	591.70	1.38	5 95	11430.55	57938.32
	18.871	1440.00	0.00	0.00	557.90	68000.00	591.32	0.00	591 81	1.22	5.60	12132.48	61510 21
	18 871	1440.00	0 00	0.00	557.90	68000.00	591.41	0.00	591.89	1.20	5.59	12171.45	62053.08
	18.938	357.00	0.00	0.00	554.90	68000.00	591.45	0.00	591.86	1.14	5.15	13214.39	63666 39
	18.938	357.00	0.00	0 00	554.90	68000.00	591.53	0.00	591.94	1.13	5.13	13260.48	64022.38
*	18.939	1.00	593 60	592.50	554 90	68000.00	591.34	0.00	591.89	2.72	5.95	11426.30	41227.99
*	18.939	1.00	593 60	592.50	554.90	68000.00	591.42	0.00	591.97	2.69	5.93	11466.83	41422.53
	18.944	24.00	593.60	592.50	554.90	68000 00	591.34	0.00	591.89	2.72	5.95	11428.51	41238.60
	18.944	24 00	593.60	592.50	554 90	68000.00	591.43	0.00	591.97	2.69	5.93	11469.92	41437.36
*	18.945	1.00	0.00	0.00	554 90	68000.00	591.50	0 00	591.91	1.15	5.14	13242.11	63461.98
*	18.945	1.00	0.00	0.00	554 90	68000.00	591.58	0.00	591 99	1.14	5.12	13287.98	63816.35
	19.432	2577.00	0.00	0.00	559.90	68000.00	591.75	0.00	592.26	1.50	5.77	11790.70	55534.46
	19 432	2577.00	0.00	0.00	559 90	68000.00	591.83	0.00	592.34	1.45	5.75	11830.05	56385.93
	19.462	165.00	0.00	0.00	560.90	68000.00	591.88	0.00	592.30	1.25	5.16	13182.68	60750.24
	19.462	165.00	0.00	0.00	560.90	68000.00	591.96	0.00	592.37	1 24	5 14	13226.26	61124.49
	19.463	1.00	601.10	600.40	560.90	68000.00	591.86	0.00	592.30	2 15	5.36	12675.27	46394 23
	19.463	1.00	601.10	600.40	560.90	68000.00	591.93	0.00	592.38	2.13	5.35	12717.45	46638 78
	19.476	68.00	601.10	600.40	560.90	68000.00	591.87	0.00	592.32	2.15	5.36	12681.69	46426.51
	19.476	68.00	601.10	600.40	560 90	68000.00	591 95	0.00	592.39	2.12	5.34	12723.80	46672.36
	19.477	1.00	0.00	0.00	560.90	68000.00	591.91	0.00	592.32	1.22	5.15	13197.69	61438 56
	19.477	1.00	0.00	0.00	560.90	68000.00	591.99	0.00	592.40	1.21	5.14	13241.09	61818.74

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10*KS	VCH	AREA	.01K
	20.115	3379.00	0.00	0.00	557.00	68000.00	592.29	0.00	592.75	1.25	5.47	12421.94	60931.76
	20.115	3379.00	0.00	0.00	557.00	68000.00	592.36	0.00	592.82	1.23	5.46	12457.86	61337.18
*	20.116	1.00	0.00	0.00	557.00	68000.00	592.17	0.00	592.78	2.98	6.28	10834.71	39375.11
*	20.116	1.00	0.00	0.00	557.00	68000.00	592.24	0.00	592.85	2.95	6.26	10866.49	39573.25
	20.128	60.00	0.00	0.00	557.00	68000.00	592.19	0.00	592.80	2.98	6.27	10840.40	39395.37
	20.128	60.00	0.00	0.00	557.00	68000.00	592.26	0.00	592.87	2.95	6.25	10872.11	39600.78
*	20.129	1.00	0.00	0.00	557.00	68000.00	592.35	0.00	592.81	1.30	5.46	12455.27	59718.72
*	20.129	1.00	0.00	0.00	557.00	68000.00	592.42	0.00	592.88	1.28	5.44	12491.06	60082.97
	20.287	839.00	0.00	0.00	565.90	68000.00	592.60	0.00	592.92	1.00	4.53	15025.78	67945.32
	20.287	839.00	0.00	0.00	565.90	68000.00	592.67	0.00	592.99	0.99	4.51	15072.74	68290.93
	20.513	1199.00	0.00	0.00	564.60	68000.00	592.68	0.00	593.06	1.15	4.94	13758.65	63422.38
	20.513	1199.00	0.00	0.00	564.60	68000.00	592.75	0.00	593.13	1.14	4.93	13800.20	63719.71
*	20.514	1.00	0.00	0.00	564.60	68000.00	592.66	0.00	593.07	2.40	5.16	13187.52	43869.34
*	20.514	1.00	0.00	0.00	564.60	68000.00	592.72	0.00	593.14	2.38	5.14	13227.55	44049.37
	20.527	70.00	0.00	0.00	564.60	68000.00	592.68	0.00	593.09	2.40	5.15	13194.92	43902.62
	20.527	70.00	0.00	0.00	564.60	68000.00	592.74	0.00	593.15	2.38	5.14	13234.89	44082.40
*	20.528	1.00	0.00	0.00	564.60	68000.00	592.71	0.00	593.09	1.15	4.94	13776.16	63547.39
*	20.528	1.00	0.00	0.00	564.60	68000.00	592.78	0.00	593.16	1.13	4.92	13817.58	63843.49
	21.059	2804.00	0.00	0.00	564.90	68000.00	593.02	0.00	593.42	1.16	5.05	13464.45	63211.45
	21.059	2804.00	0.00	0.00	564.90	68000.00	593.08	0.00	593.48	1.14	5.04	13502.22	63579.53
	21.092	179.00	0.00	0.00	563.70	68000.00	593.14	0.00	593.45	1.08	4.41	15419.62	65474.69
	21.092	179.00	0.00	0.00	563.70	68000.00	593.21	0.00	593.51	1.07	4.40	15468.79	65802.07
	21.093	1.00	0.00	0.00	563.70	68000.00	593.13	0.00	593.45	1.59	4.51	15077.34	53947.39
	21.093	1.00	0.00	0.00	563.70	68000.00	593.20	0.00	593.51	1.57	4.50	15125.40	54197.49
	21.108	80.00	0.00	0.00	563.70	68000.00	593.15	0.00	593.46	1.59	4.51	15081.20	53967.49
	21.108	80.00	0.00	0.00	563.70	68000.00	593.21	0.00	593.52	1.57	4.49	15129.22	54217.36
	21.109	1.00	0.00	0.00	563.70	68000.00	593.16	0.00	593.46	1.07	4.41	15427.14	65811.74
	21.109	1.00	0.00	0.00	563.70	68000.00	593.22	0.00	593.52	1.06	4.39	15476.24	66146.01
	21.722	3239.00	0.00	0.00	565.30	68000.00	593.59	0.00	593.73	0.59	3.53	24828.51	88553.11
	21.722	3239.00	0.00	0.00	565.30	68000.00	593.63	0.00	593.82	0.72	3.91	21743.37	80046.04
*	22.186	2450.00	0.00	0.00	563.30	68000.00	593.77	0.00	593.84	0.28	2.56	38577.15	127596.98
	22.186	2450.00	0.00	0.00	563.30	68000.00	593.82	0.00	593.98	0.57	3.61	24735.14	90457.62

100-YEAR FLOOD

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	0.023	66100.00	579.34	0.00	0.00	0.00	1297.10	0.00
	0.023	66100.00	579.44	0.10	0.00	0.10	1296.82	0.00
	0.335	66100.00	579.55	0.00	0.21	0.00	1015.82	1650.00
	0.335	66100.00	579.65	0.09	0.21	0.09	1015.75	1650.00
	1.189	66100.00	580.45	0.00	0.89	0.00	1520.24	4510.00
	1.189	66100.00	580.52	0.07	0.87	0.07	1520.00	4510.00
	1.761	66100.00	580.89	0.00	0.44	0.00	687.59	3020.00
	1.761	66100.00	580.95	0.06	0.43	0.06	687.00	3020.00
	2.223	66100.00	581.32	0.00	0.43	0.00	773.98	2440.00
	2.223	66100.00	581.38	0.06	0.43	0.06	773.78	2440.00
	2.576	66100.00	581.62	0.00	0.29	0.00	733.28	1860.00
	2.576	66100.00	581.67	0.06	0.29	0.06	732.85	1860.00
	2.808	66100.00	581.70	0.00	0.08	0.00	683.00	1232.00
	2.808	66100.00	581.75	0.06	0.08	0.06	683.00	1232.00
	2.809	66100.00	581.65	0.00	-0.05	0.00	623.00	1.00
	2.809	66100.00	581.70	0.06	-0.05	0.06	623.00	1.00
	2.813	66100.00	581.65	0.00	0.00	0.00	623.00	17.00
	2.813	66100.00	581.70	0.06	0.00	0.06	623.00	17.00
	2.814	66100.00	581.72	0.00	0.08	0.00	683.00	1.00
	2.814	66100.00	581.78	0.06	0.07	0.06	683.00	1.00
	2.947	66100.00	581.89	0.00	0.16	0.00	1081.15	709.00
	2.947	66100.00	581.94	0.05	0.16	0.05	1080.00	709.00
	3.350	66100.00	582.11	0.00	0.22	0.00	1138.56	2130.00
	3.350	66100.00	582.16	0.05	0.22	0.05	1134.00	2130.00
	3.600	66100.00	582.23	0.00	0.12	0.00	672.35	1322.00
	3.600	66100.00	582.28	0.05	0.12	0.05	672.00	1322.00
*	3.601	66100.00	582.13	0.00	-0.10	0.00	581.10	1.00
*	3.601	66100.00	582.18	0.05	-0.10	0.05	580.00	1.00
	3.615	66100.00	582.14	0.00	0.01	0.00	581.26	73.50
	3.615	66100.00	582.20	0.05	0.01	0.05	580.00	73.50
*	3.616	66100.00	582.29	0.00	0.14	0.00	674.30	1.00
*	3.616	66100.00	582.34	0.05	0.14	0.05	674.00	1.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
3.646	66100.00	582.30	0.00	0.02	0.00	744.44	162.50
3.646	66100.00	582.35	0.05	0.02	0.05	744.33	162.50
3.689	66100.00	582.28	0.00	-0.02	0.00	606.19	231.00
3.689	66100.00	582.33	0.05	-0.02	0.05	606.00	231.00
3.690	66100.00	582.24	0.00	-0.04	0.00	557.00	1.00
3.690	66100.00	582.29	0.05	-0.04	0.05	557.00	1.00
3.697	66100.00	582.25	0.00	0.01	0.00	557.00	35.50
3.697	66100.00	582.30	0.05	0.01	0.05	557.00	35.50
3.698	66100.00	582.30	0.00	0.05	0.00	606.32	1.00
3.698	66100.00	582.35	0.05	0.05	0.05	606.00	1.00
4.366	66100.00	582.72	0.00	0.42	0.00	763.17	3550.00
4.366	66100.00	582.77	0.05	0.42	0.05	762.84	3550.00
4.677	66100.00	582.83	0.00	0.11	0.00	657.00	1649.00
4.677	66100.00	582.88	0.05	0.11	0.05	657.00	1649.00
4.678	66100.00	582.79	0.00	-0.04	0.00	612.00	1.00
4.678	66100.00	582.84	0.05	-0.04	0.05	612.00	1.00
4.682	66100.00	582.79	0.00	0.00	0.00	612.00	20.00
4.682	66100.00	582.84	0.05	0.00	0.05	612.00	20.00
4.683	66100.00	582.85	0.00	0.05	0.00	657.00	1.00
4.683	66100.00	582.89	0.05	0.05	0.05	657.00	1.00
4.835	66100.00	583.01	0.00	0.16	0.00	836.39	809.00
4.835	66100.00	583.05	0.05	0.16	0.05	822.00	809.00
4.967	66100.00	583.03	0.00	0.02	0.00	807.00	702.00
4.967	66100.00	583.07	0.05	0.02	0.05	807.00	702.00
4.968	66100.00	582.98	0.00	-0.05	0.00	732.00	1.00
4.968	66100.00	583.03	0.05	-0.05	0.05	732.00	1.00
4.975	66100.00	582.99	0.00	0.01	0.00	732.00	34.00
4.975	66100.00	583.03	0.05	0.01	0.05	732.00	34.00
4.976	66100.00	583.05	0.00	0.07	0.00	807.00	1.00
4.976	66100.00	583.10	0.04	0.07	0.04	807.00	1.00
5.152	65900.00	583.12	0.00	0.07	0.00	750.27	932.00
5.152	65900.00	583.17	0.04	0.07	0.04	732.00	932.00
5.325	65900.00	583.18	0.00	0.06	0.00	619.65	920.00
5.325	65900.00	583.23	0.04	0.06	0.04	597.00	920.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	5.326	65900.00	583.05	0.00	-0.13	0.00	514.54	1.00
*	5.326	65900.00	583.09	0.04	-0.13	0.04	507.00	1.00
	5.339	65900.00	583.07	0.00	0.02	0.00	515.50	68.00
	5.339	65900.00	583 11	0.04	0.02	0.04	507.00	68.00
*	5.340	65900.00	583.25	0.00	0.19	0.00	625.36	1 00
*	5.340	65900.00	583.29	0.04	0.18	0.04	597.00	1.00
	5.905	65900.00	583.73	0.00	0.48	0.00	1444 95	2990.00
	5.905	65900.00	583.78	0.04	0.48	0.04	1164.00	2990 00
	6.222	57650.00	583.91	0.00	0.17	0.00	598.61	1670.00
	6.222	57650.00	583.95	0.04	0.17	0.04	579 00	1670.00
	6.519	57650.00	584.12	0.00	0.21	0.00	447.00	1573.00
	6.519	57650.00	584 16	0.04	0.21	0 04	447.00	1573.00
*	6.520	57650.00	583.92	0.00	-0.20	0.00	367.00	1.00
*	6.520	57650.00	583.96	0.04	-0.20	0.04	367.00	1.00
	6.528	57650.00	583.93	0.00	0.01	0.00	367.00	42.00
	6.528	57650.00	583.97	0.04	0.01	0.04	367.00	42.00
*	6.529	57650.00	584.21	0.00	0.28	0.00	447.00	1.00
*	6.529	57650.00	584.25	0.04	0.28	0 04	447.00	1.00
	7.016	57650 00	584.54	0.00	0.33	0.00	778.20	2578.00
	7.016	57650 00	584.58	0.04	0.33	0.04	730.00	2578.00
	7.567	57650.00	584.89	0 00	0.35	0.00	934.29	2910.00
	7.567	57650.00	584.92	0 03	0.34	0.03	658.00	2910.00
	8.099	57650.00	585 06	0.00	0.17	0.00	635.23	2810.00
	8.099	57650.00	585 09	0 03	0.17	0.03	520.00	2810.00
	8.241	65900.00	585.24	0 00	0.18	0.00	1515.79	750.00
	8.241	65900.00	585.27	0.03	0.18	0.03	913.00	750.00
	9.079	67100.00	585.76	0.00	0.52	0.00	1873.24	4420.00
	9.079	67100.00	585.79	0.03	0 52	0.03	1721 89	4420.00
	9.584	67100 00	586.06	0.00	0.31	0.00	2127 99	2670 00
	9.584	67100.00	586.09	0 03	0.30	0.03	1580.00	2670.00
	10.240	67100.00	586.46	0.00	0.40	0.00	2361.34	3460.00
	10.240	67100.00	586.55	0.09	0.46	0.09	2275.00	3460.00
	10.993	68400.00	586 74	0.00	0.28	0.00	1006.10	3980.00
	10.993	68400.00	586.84	0.10	0.29	0.10	991.00	3980.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	11.433	68400.00	587.01	0.00	0.27	0.00	850.00	2325.00
	11.433	68400.00	587.10	0.09	0.26	0.09	850.00	2325.00
	11.802	68400.00	587.19	0.00	0.18	0.00	1062.05	1945.00
	11.802	68400.00	587.27	0.08	0.17	0.08	923.23	1945.00
	12.569	68400.00	587.82	0.00	0.63	0.00	1656.26	4050.00
	12.569	68400.00	587.90	0.09	0.63	0.09	1416.00	4050.00
	13.249	68400.00	587.98	0.00	0.17	0.00	1092.29	3590.00
	13.249	68400.00	588.09	0.11	0.19	0.11	1085.00	3590.00
	13.747	68400.00	588.31	0.00	0.33	0.00	1320.99	2630.00
	13.747	68400.00	588.40	0.09	0.31	0.09	1195.00	2630.00
	14.385	68400.00	588.55	0.00	0.24	0.00	600.00	3370.00
	14.385	68400.00	588.66	0.10	0.25	0.10	536.62	3370.00
	14.406	68400.00	588.52	0.00	-0.03	0.00	541.56	114.00
	14.406	68400.00	588.63	0.11	-0.02	0.11	540.00	114.00
*	14.407	68400.00	588.34	0.00	-0.18	0.00	451.09	1.00
*	14.407	68400.00	588.45	0.11	-0.18	0.11	450.00	1.00
	14.420	68400.00	588.36	0.00	0.02	0.00	451.13	70.00
	14.420	68400.00	588.47	0.11	0.02	0.11	450.00	70.00
*	14.421	68400.00	588.62	0.00	0.25	0.00	541.79	1.00
*	14.421	68400.00	588.73	0.11	0.25	0.11	540.00	1.00
	15.156	68400.00	589.12	0.00	0.50	0.00	713.00	3884.00
	15.156	68400.00	589.22	0.10	0.49	0.10	713.00	3884.00
	15.470	68400.00	589.21	0.00	0.09	0.00	796.17	1657.00
	15.470	68400.00	589.30	0.09	0.08	0.09	635.00	1657.00
	15.612	68400.00	589.29	0.00	0.08	0.00	710.00	750.00
	15.612	68400.00	589.38	0.09	0.08	0.09	545.00	750.00
	16.169	68400.00	589.68	0.00	0.39	0.00	822.76	2940.00
	16.169	68400.00	589.80	0.12	0.42	0.12	750.53	2940.00
	16.500	68400.00	589.92	0.00	0.24	0.00	659.00	1750.00
	16.500	68400.00	590.03	0.11	0.23	0.11	659.00	1750.00
	16.758	68000.00	589.96	0.00	0.04	0.00	577.36	1360.00
	16.758	68000.00	590.07	0.11	0.04	0.11	447.00	1360.00
	16.775	68000.00	589.93	0.00	-0.03	0.00	561.19	95.00
	16.775	68000.00	590.05	0.11	-0.03	0.11	560.00	95.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	16.776	68000.00	589.86	0.00	-0.07	0.00	506.33	1.00
*	16.776	68000.00	589 97	0.11	-0.07	0.11	506.00	1.00
	16.781	68000.00	589.87	0.00	0.01	0.00	506.35	27.00
	16.781	68000.00	589.98	0.11	0.01	0.11	506.00	27.00
*	16.782	68000.00	589.97	0 00	0.10	0.00	561.26	1.00
*	16.782	68000.00	590.08	0.11	0 10	0.11	561.00	1.00
	17 282	68000.00	590.30	0.00	0.33	0.00	592.00	2644.00
	17.282	68000.00	590.40	0.11	0.32	0.11	592.00	2644.00
	17.758	68000.00	590.45	0.00	0.16	0 00	450.00	2510.00
	17.758	68000.00	590.55	0.10	0.15	0.10	450.00	2510.00
	17.790	68000.00	590.71	0.00	0.26	0.00	729.76	173.00
	17.790	68000.00	590.81	0.09	0.26	0.09	729.00	173 00
*	17.791	68000.00	590.68	0.00	-0.03	0.00	697.00	1 00
*	17.791	68000.00	590.77	0.09	-0.03	0.09	697.00	1 00
	17.797	68000.00	590.68	0.00	0.01	0.00	697.00	32.00
	17.797	68000.00	590.78	0.09	0.00	0.09	697.00	32.00
*	17.798	68000.00	590.73	0.00	0 04	0.00	729.77	1.00
*	17.798	68000.00	590.82	0 09	0.04	0.09	729.00	1.00
	18.134	68000 00	590.77	0.00	0.04	0.00	560.00	1783.00
	18.134	68000.00	590.87	0.09	0.04	0.09	560.00	1783.00
	18.160	68000.00	590.76	0.00	-0.01	0.00	550.78	141.00
	18.160	68000.00	590.85	0 09	-0.01	0.09	540.00	141.00
	18.161	68000.00	590.74	0.00	-0.02	0.00	516.00	1.00
	18 161	68000.00	590.83	0.09	-0.02	0.09	516.00	1.00
	18.180	68000.00	590 76	0.00	0.02	0.00	516.00	96.00
	18.180	68000.00	590.85	0.09	0.02	0 09	516 00	96.00
	18.181	68000.00	590.79	0 00	0.03	0.00	552.75	1.00
	18 181	68000.00	590.88	0.09	0.03	0.09	546.00	1.00
	18.267	68000.00	590.88	0.00	0.09	0 00	518.00	467.00
	18.267	68000.00	590 96	0 09	0.09	0.09	518.00	467.00
*	18.268	68000.00	590.81	0.00	-0.06	0.00	500.00	1.00
*	18.268	68000.00	590.90	0.09	-0.06	0.09	500 00	1.00
	18.273	68000.00	590.82	0.00	0.01	0.00	500.00	26.00
	18.273	68000.00	590.91	0.09	0.01	0.09	500.00	26.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	18.274	68000.00	590.91	0.00	0.09	0.00	518.00	1.00
*	18.274	68000.00	591.00	0.09	0.09	0.09	518.00	1.00
	18.335	68000.00	590.88	0.00	-0.03	0.00	430.00	326.00
	18.335	68000.00	590.97	0.09	-0.03	0.09	430.00	326.00
	18.430	68000.00	590.91	0.00	0.03	0.00	439.18	507.00
	18.430	68000.00	591.00	0.09	0.03	0.09	438.50	507.00
*	18.431	68000.00	590.77	0.00	-0.15	0.00	428.50	1.00
*	18.431	68000.00	590.86	0.09	-0.14	0.09	428.50	1.00
	18.444	68000.00	590.79	0.00	0.02	0.00	428.50	64.00
	18.444	68000.00	590.88	0.09	0.02	0.09	428.50	64.00
*	18.445	68000.00	590.99	0.00	0.20	0.00	439.20	1.00
*	18.445	68000.00	591.08	0.09	0.20	0.09	438.50	1.00
	18.598	68000.00	591.06	0.00	0.07	0.00	435.00	817.00
	18.598	68000.00	591.15	0.09	0.07	0.09	435.00	817.00
	18.871	68000.00	591.32	0.00	0.26	0.00	460.00	1440.00
	18.871	68000.00	591.41	0.08	0.26	0.08	460.00	1440.00
	18.938	68000.00	591.45	0.00	0.13	0.00	550.00	357.00
	18.938	68000.00	591.53	0.08	0.13	0.08	550.00	357.00
*	18.939	68000.00	591.34	0.00	-0.11	0.00	479.00	1.00
*	18.939	68000.00	591.42	0.08	-0.11	0.08	479.00	1.00
	18.944	68000.00	591.34	0.00	0.01	0.00	479.00	24.00
	18.944	68000.00	591.43	0.08	0.01	0.08	479.00	24.00
*	18.945	68000.00	591.50	0.00	0.15	0.00	550.00	1.00
*	18.945	68000.00	591.58	0.08	0.15	0.08	550.00	1.00
	19.432	68000.00	591.75	0.00	0.25	0.00	510.00	2577.00
	19.432	68000.00	591.83	0.08	0.24	0.08	510.00	2577.00
	19.462	68000.00	591.88	0.00	0.14	0.00	575.83	165.00
	19.462	68000.00	591.96	0.08	0.13	0.08	575.00	165.00
	19.463	68000.00	591.86	0.00	-0.03	0.00	555.70	1.00
	19.463	68000.00	591.93	0.08	-0.03	0.08	555.00	1.00
	19.476	68000.00	591.87	0.00	0.02	0.00	555.75	68.00
	19.476	68000.00	591.95	0.08	0.01	0.08	555.00	68.00
	19.477	68000.00	591.91	0.00	0.04	0.00	575.95	1.00
	19.477	68000.00	591.99	0.08	0.04	0.08	575.00	1.00

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
	20.115	68000.00	592.29	0.00	0.37	0.00	513.17	3379.00
	20.115	68000.00	592.36	0.07	0.37	0.07	512.00	3379.00
*	20.116	68000.00	592.17	0.00	-0.12	0.00	449.20	1.00
*	20.116	68000.00	592.24	0.07	-0.12	0.07	448.00	1.00
	20.128	68000.00	592.19	0.00	0.02	0.00	449.41	60.00
	20.128	68000.00	592.26	0.07	0.02	0.07	448.00	60.00
*	20.129	68000.00	592.35	0.00	0.16	0.00	514.26	1.00
*	20.129	68000.00	592.42	0.07	0.16	0.07	513.00	1.00
	20.287	68000.00	592.60	0.00	0.25	0.00	690.00	839.00
	20.287	68000.00	592.67	0.07	0.25	0.07	690.00	839.00
	20.513	68000.00	592.68	0.00	0.08	0.00	619.47	1199.00
	20.513	68000.00	592.75	0.07	0.08	0.07	619.78	1199.00
*	20.514	68000.00	592.66	0.00	-0.03	0.00	595.33	1.00
*	20.514	68000.00	592.72	0.07	-0.03	0.07	595.64	1.00
	20.527	68000.00	592.68	0.00	0.02	0.00	595.39	70.00
	20.527	68000.00	592.74	0.07	0.02	0.07	595.70	70.00
*	20.528	68000.00	592.71	0.00	0.04	0.00	619.60	1.00
*	20.528	68000.00	592.78	0.07	0.04	0.07	619.91	1.00
	21.059	68000.00	593.02	0.00	0.31	0.00	598.93	2804.00
	21.059	68000.00	593.08	0.06	0.31	0.06	597.76	2804.00
	21.092	68000.00	593.14	0.00	0.12	0.00	781.74	179.00
	21.092	68000.00	593.21	0.06	0.12	0.06	781.94	179.00
	21.093	68000.00	593.13	0.00	-0.01	0.00	763.72	1.00
	21.093	68000.00	593.20	0.06	-0.01	0.06	763.92	1.00
	21.108	68000.00	593.15	0.00	0.01	0.00	763.74	80.00
	21.108	68000.00	593.21	0.06	0.01	0.06	763.94	80.00
	21.109	68000.00	593.16	0.00	0.02	0.00	781.77	1.00
	21.109	68000.00	593.22	0.06	0.02	0.06	781.97	1.00
	21.722	68000.00	593.59	0.00	0.43	0.00	1770.00	3239.00
	21.722	68000.00	593.63	0.04	0.41	0.04	1500.00	3239.00
*	22.186	68000.00	593.77	0.00	0.18	0.00	3187.02	2450.00
	22.186	68000.00	593.82	0.05	0.18	0.05	1900.00	2450.00

SUMMARY OF ERRORS AND SPECIAL NOTES

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WARNING SECNO=      3.601  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.601  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      3.616  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      3.616  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      5.326  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      5.326  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      5.340  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      5.340  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.520  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      6.520  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=      6.529  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=      6.529  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     14.407  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     14.407  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     14.421  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     14.421  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     16.776  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     16.776  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     16.782  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     16.782  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     17.791  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     17.791  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     17.798  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     17.798  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.268  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.268  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.274  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.274  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.431  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.431  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.445  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.445  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     18.939  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.939  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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WARNING SECNO=     18.945  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     18.945  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.116  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.116  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.129  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.129  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.514  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.514  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     20.528  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
WARNING SECNO=     20.528  PROFILE=  2  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE

WARNING SECNO=     22 186  PROFILE=  1  CONVEYANCE CHANGE OUTSIDE ACCEPTABLE RANGE
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FLOODWAY DATA, 100-YEAR FLOOD
PROFILE NO. 2

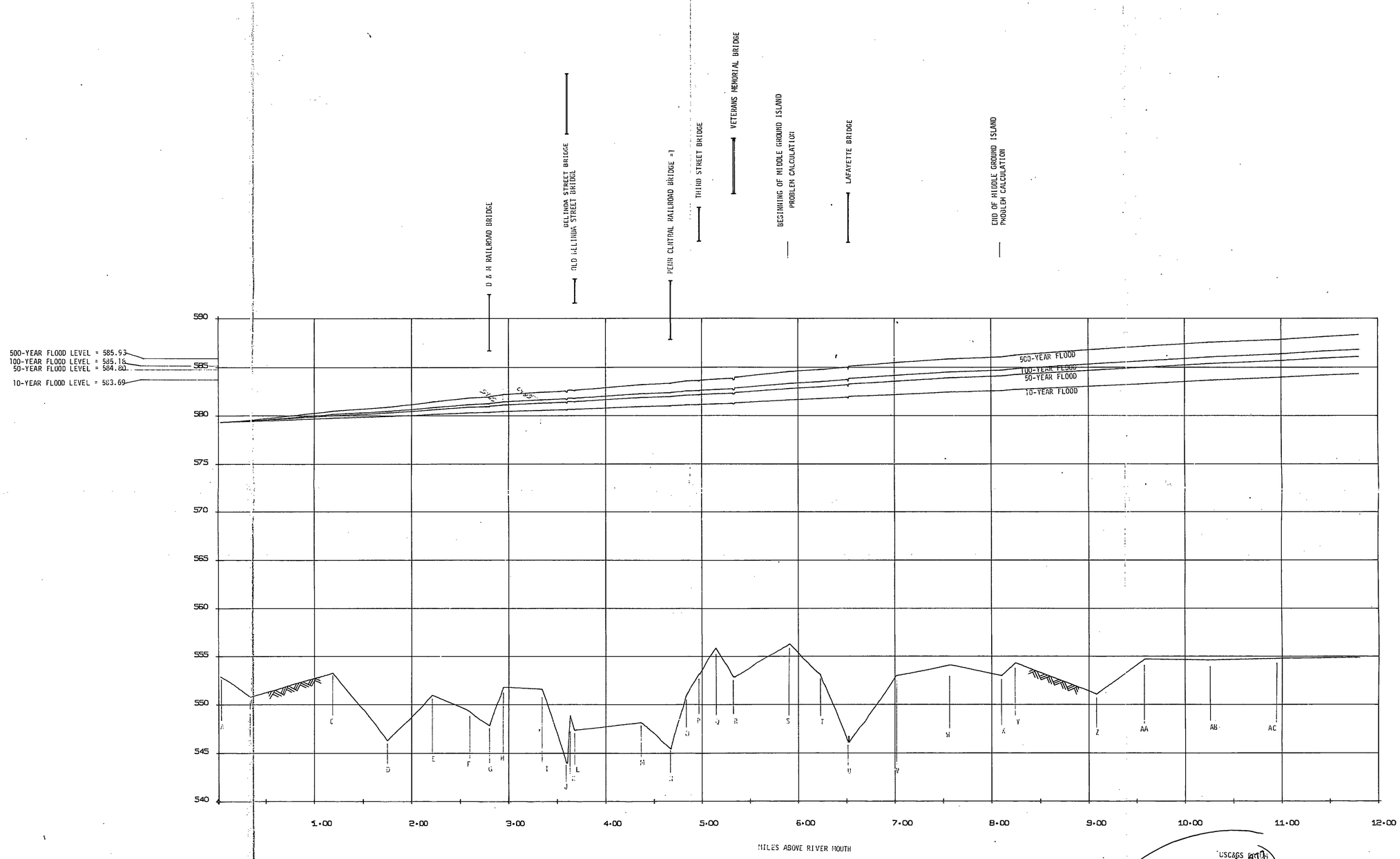
STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
0.023	1297.	16826.	3 9	579.4	579.3	0.1
0.335	1016.	14930.	4.4	579 7	579 6	0.1
1.189	1520.	16050.	4.1	580.5	580.4	0.1
1 761	687.	12886.	5.1	581.0	580.9	0.1
2.223	774.	13951.	4.7	581 4	581.3	0.1
2 576	733	16265.	4 1	581.7	581.6	0.1
2 808	683.	15063.	4.4	581.8	581.7	0.1
2.809	683.	13607.	4.9	581.7	581.6	0 1
2.813	683.	13610.	4 9	581.7	581.6	0 1
2.814	683.	15080.	4.4	581.8	581.7	0.1
2.947	1080.	17472.	3.8	582.0	581.9	0.1
3.350	1134.	16230.	4.1	582 2	582 1	0.1
3.600	672.	15383.	4.3	582.3	582.2	0.1
3.601	669.	12799.	5.2	582.2	582.1	0.1
3.615	669	12805.	5.2	582.2	582.1	0.1
3.616	674.	15418.	4.3	582.3	582.3	0.0
3.646	744	15452.	4.3	582.3	582.3	0.0
3 689	606.	14064.	4.7	582.3	582.3	0.0
3 690	603.	13236.	5.0	582 3	582.2	0.1
3.697	603.	13238.	5.0	582.2	582.2	0 0
3.698	606.	14076.	4.7	582.3	582.3	0.0
4.366	763.	16231.	4.1	582.7	582.7	0.0
4.677	657.	14865.	4.4	582.8	582.8	0.0
4.678	657.	13814.	4.8	582 8	582.8	0 0
4.682	657	13815.	4.8	582.8	582.8	0.0
4.683	657	14877.	4.4	582.8	582.8	0.0
4.835	822.	17347.	3.8	583.0	583.0	0 0
4.967	807.	15718	4.2	583.0	583.0	0.0
4.968	807.	14257.	4.6	583 0	583 0	0.0
4.975	807.	14261.	4.6	583.0	583.0	0.0
4.976	807.	15738.	4.2	583.1	583.1	0.0
5.152	732	14669.	4.5	583.1	583.1	0.0
5.325	597.	13584.	4.9	583 2	583.2	0.0
5.326	597.	11262.	5.9	583.0	583.0	0.0
5.339	597.	11270.	5.8	583 1	583.1	0.0
5.340	597	13624.	4.8	583.3	583.3	0 0
5.905	1164.	15304.	4.3	583.7	583.7	0.0
6 222	579.	11429.	5.0	583.9	583.9	0.0
6.519	447.	11985.	4 8	584 1	584.1	0.0
6.520	447.	9209.	6.3	583.9	583.9	0 0
6 528	447.	9212.	6.3	583.9	583 9	0.0
6.529	447.	12024	4.8	584.2	584.2	0.0

FLOODWAY DATA, 100-YEAR FLOOD
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
7.016	730.	12965.	4.4	584.5	584.5	0.0
7.567	658.	14601.	3.9	584.9	584.9	0.0
8.099	520.	12319.	4.7	585.1	585.1	0.0
8.241	913.	16495.	4.0	585.2	585.2	0.0
9.079	1725.	19836.	3.4	585.8	585.8	0.0
9.584	1580.	17637.	3.8	586.1	586.1	0.0
10.240	2275.	24760.	2.7	586.6	586.5	0.1
10.993	991.	16221.	4.2	586.8	586.7	0.1
11.433	850.	15431.	4.4	587.1	587.0	0.1
11.802	923.	14252.	4.8	587.3	587.2	0.1
12.569	1416.	20955.	3.3	587.9	587.8	0.1
13.249	1085.	15405.	4.4	588.1	588.0	0.1
13.747	1195.	17540.	3.9	588.4	588.3	0.1
14.385	537.	14224.	4.8	588.7	588.6	0.1
14.406	540.	13465.	5.1	588.6	588.5	0.1
14.407	540.	10764.	6.4	588.4	588.3	0.1
14.420	540.	10770.	6.4	588.5	588.4	0.1
14.421	540.	13515.	5.1	588.7	588.6	0.1
15.156	713.	15498.	4.4	589.2	589.1	0.1
15.470	635.	13543.	5.1	589.3	589.2	0.1
15.612	545.	13361.	5.1	589.4	589.3	0.1
16.169	1009.	14687.	4.7	589.8	589.7	0.1
16.500	659.	16294.	4.2	590.0	589.9	0.1
16.758	447.	14365.	4.7	590.1	590.0	0.1
16.775	560.	13504	5.0	590.0	589.9	0.1
16.776	561.	12181.	5.6	590.0	589.9	0.1
16.781	561.	12184.	5.6	590.0	589.9	0.1
16.782	561	13525.	5.0	590.1	590.0	0.1
17.282	592	14446.	4.7	590.4	590.3	0.1
17.758	450.	12384.	5.5	590.6	590.5	0.1
17.790	729.	16967.	4.0	590.8	590.7	0.1
17.791	732.	15750.	4.3	590.8	590.7	0.1
17.797	732.	15753.	4.3	590.8	590.7	0.1
17.798	729.	16980.	4.0	590.8	590.7	0.1
18.134	560.	13585.	5.0	590.9	590.8	0.1
18.160	540.	13010.	5.2	590.9	590.8	0.1
18.161	531.	12616.	5.4	590.8	590.7	0.1
18.180	531.	12623.	5.4	590.9	590.8	0.1
18.181	546.	13026.	5.2	590.9	590.8	0.1
18.267	518.	13545.	5.0	591.0	590.9	0.1
18.268	518	12345.	5.5	590.9	590.8	0.1
18.273	518	12347.	5.5	590.9	590.8	0.1

FLOODWAY DATA, 100-YEAR FLOOD
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
18 274	518.	13562	5. 0	591. 0	590. 9	0. 1
18. 335	430.	12428.	5. 5	591. 0	590. 9	0. 1
18. 430	438.	11962.	5. 7	591. 0	590. 9	0. 1
18. 431	441.	10255	6. 6	590 9	590. 8	0. 1
18. 444	441.	10265	6. 6	590. 9	590. 8	0. 1
18 445	438.	11997	5. 7	591. 1	591. 0	0. 1
18. 598	435.	11431.	5. 9	591 2	591. 1	0. 1
18 871	460.	12171.	5. 6	591. 4	591. 3	0. 1
18. 938	550.	13260.	5. 1	591. 5	591. 4	0. 1
18. 939	550.	11467.	5. 9	591. 4	591. 3	0. 1
18. 944	550.	11470	5. 9	591. 4	591. 3	0. 1
18. 945	550.	13288.	5. 1	591. 6	591. 5	0. 1
19. 432	510	11830.	5. 7	591. 8	591. 7	0. 1
19. 462	575.	13226	5. 1	592. 0	591. 9	0. 1
19. 463	575.	12717.	5. 3	592. 0	591. 9	0. 1
19. 476	575.	12724.	5. 3	592 0	591. 9	0. 1
19 477	575.	13241.	5. 1	592. 0	591. 9	0 1
20. 115	512.	12458.	5. 5	592 4	592 3	0. 1
20. 116	510.	10866.	6. 3	592. 3	592. 2	0. 1
20. 128	510.	10872.	6. 3	592. 3	592. 2	0. 1
20. 129	513	12491.	5. 4	592. 5	592. 4	0. 1
20. 287	690.	15073.	4. 5	592. 7	592. 6	0. 1
20. 513	620	13800.	4. 9	592. 8	592. 7	0. 1
20 514	620.	13228.	5. 1	592 8	592. 7	0. 1
20. 527	620.	13235.	5. 1	592. 8	592. 7	0. 1
20. 528	620.	13818.	4. 9	592. 8	592. 7	0. 1
21 059	598	13502.	5. 0	593 1	593. 0	0. 1
21 092	782.	15469.	4. 4	593 2	593 1	0. 1
21 093	782.	15125.	4. 5	593. 2	593. 1	0. 1
21. 108	782.	15129.	4. 5	593 2	593. 1	0. 1
21 109	782.	15476.	4. 4	593. 3	593. 2	0. 1
21 722	1500.	21743.	3. 1	593. 6	593. 6	0. 0
22. 186	1900.	24735.	2. 7	593. 8	593 8	0. 0



NOTE: SAGINAW BAY FLOOD LEVEL WILL BE EXTENDED IN FINAL FLOOD INSURANCE REPORT.

USC&GS 1977

Note: Model rerun July 1977 Profile unrevised

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

SCALE: VERT. 1" = 5' HORIZ. 1" = 0.5 MI

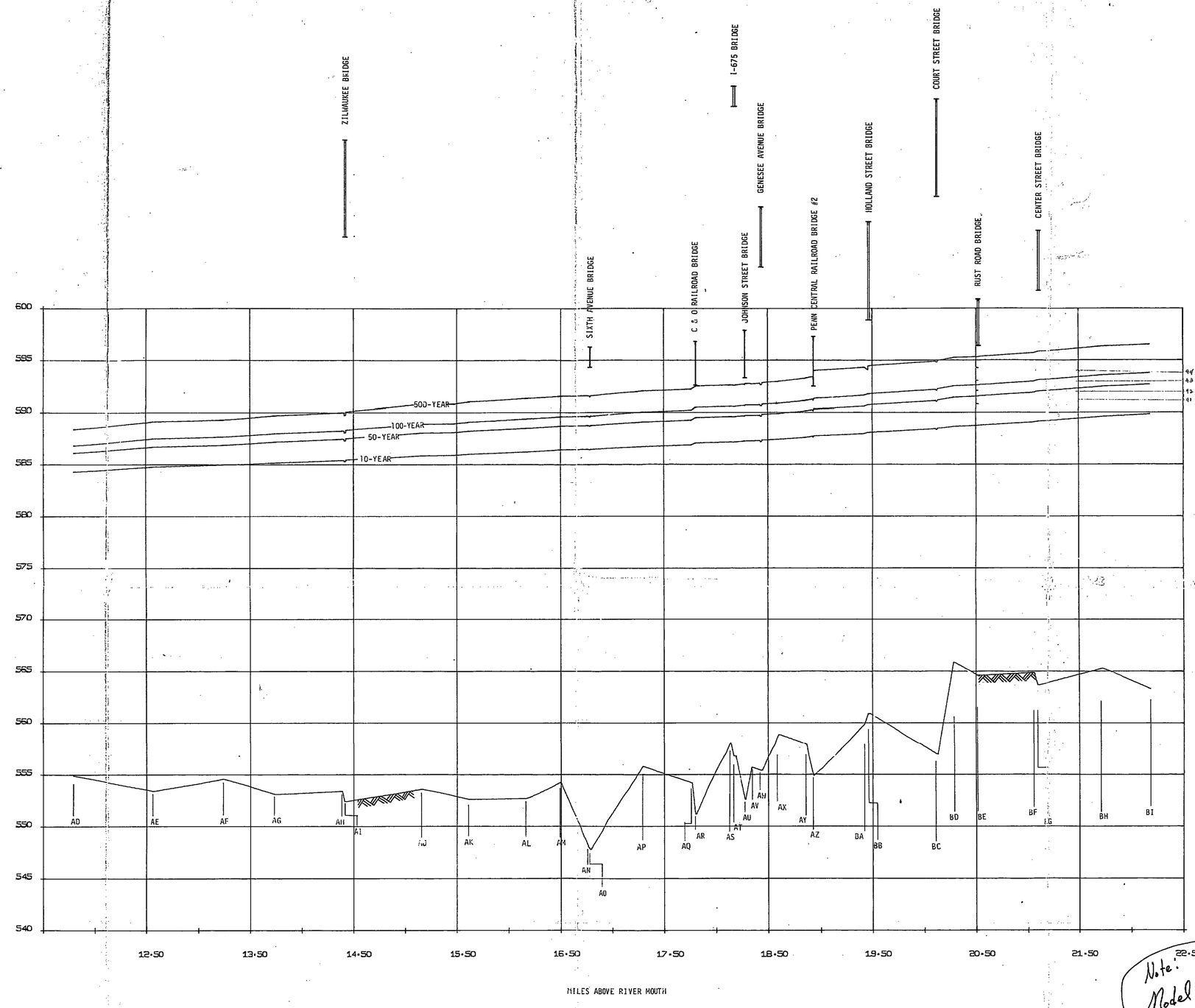
REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

SAGINAW BAY AREA F.I.S.

SAGINAW RIVER
MAIN CHANNEL

JOB NO. 5555
DATE ISSUED 4-14-77
SHEET NO. 1 OF 3



Note: Model rerun July 77
Profile unrevised

NILES ABOVE RIVER MOUTH

Job No.	Contr. No.	Cont. Tab No.	Type of Job No.	Sheet No. of Sheets	As Built	Section	City No. in County	Twp. No. in County	Village No. in County	County No. in State	State	Construction Contract	Job Code No.

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

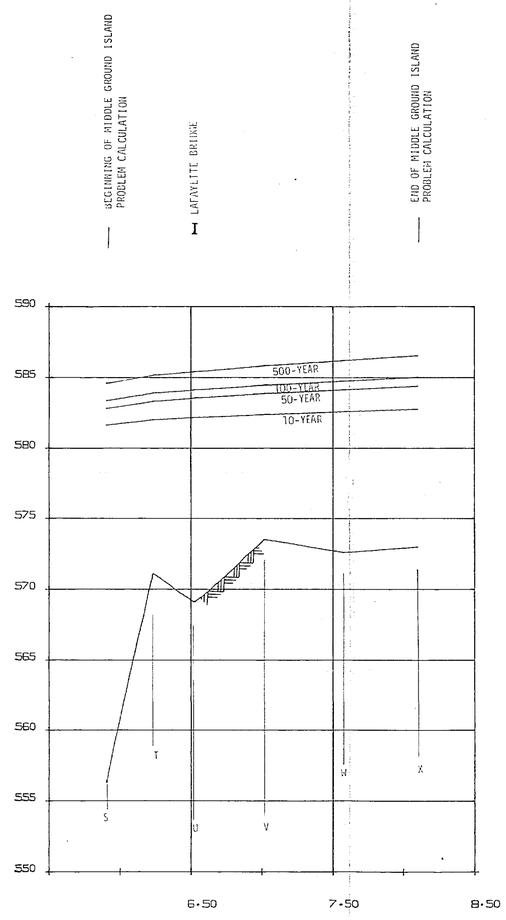
JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

SAGINAW BAY AREA F.I.S.

SAGINAW RIVER
MAIN CHANNEL

SCALE: VERT. 1" = 5'
HORIZ. 1" = 0.5 MI

JOB NO. 5555
DATE ISSUED 4-14-77
SHEET NO. 2 OF 3



WEST BRANCH OF SAGINAW RIVER AT
MIDDLE GROUND ISLAND

Job No. | Contr. No. | Cont. Title No. | Type of Job No. | Sheet No. of Sheets | Alt Bulln | Section | City No. in County | Twp. No. in County | Village No. in County | County No. in State | State | Construction Contract | Job Code No.

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

SCALE: VERT. 1" = 5'
HORIZ. 1" = 0.5 MI

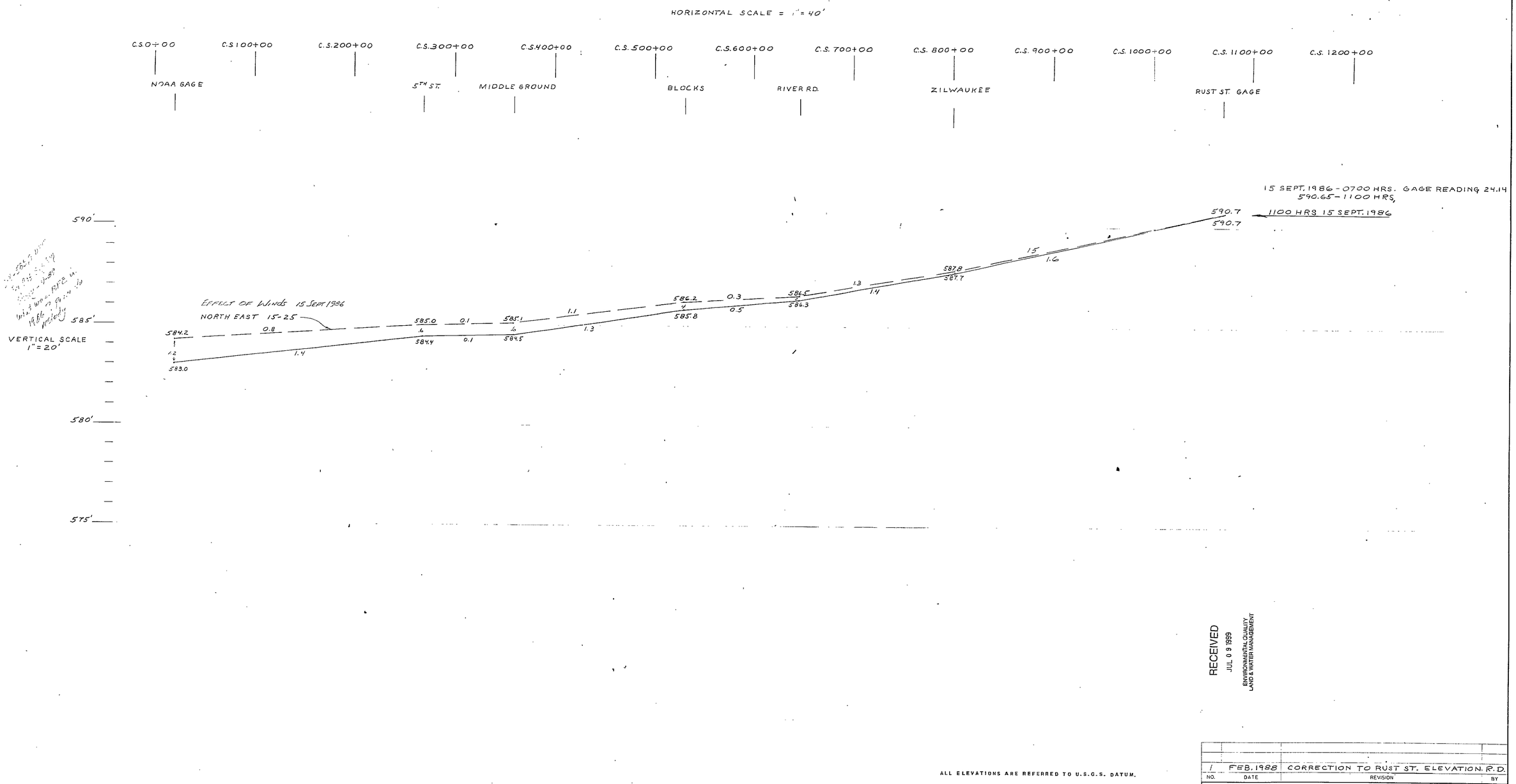
REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

SAGINAW BAY AREA F.I.S.

SAGINAW RIVER
WEST CHANNEL AT MIDDLEGROUND ISLAND

JOB NO. 5555
DATE ISSUED 4-14-77
SHEET NO. 3 OF 3



ALL ELEVATIONS ARE REFERRED TO U.S.G.S. DATUM.

RECEIVED
JUL 09 1999
ENVIRONMENTAL QUALITY
LAND & WATER MANAGEMENT

NO.	DATE	REVISION	BY
1	FEB. 1988	CORRECTION TO RUST ST. ELEVATION.	R.D.

U. S. ARMY ENGINEER DISTRICT, DETROIT
CORPS OF ENGINEERS
DETROIT, MICHIGAN

DRAWN BY R.D.
DESIGNED BY
CHECKED BY E.A.L.
REVIEWED:
SUBMITTED: CHIEF, OPER. & MAINT. BR.
APPROVAL RECOMMENDED: CHIEF, CONST.-OPER. DIV.
DATE
APPROVED: COL., C.E. DISTRICT ENGINEER

SAGINAW RIVER, MI.

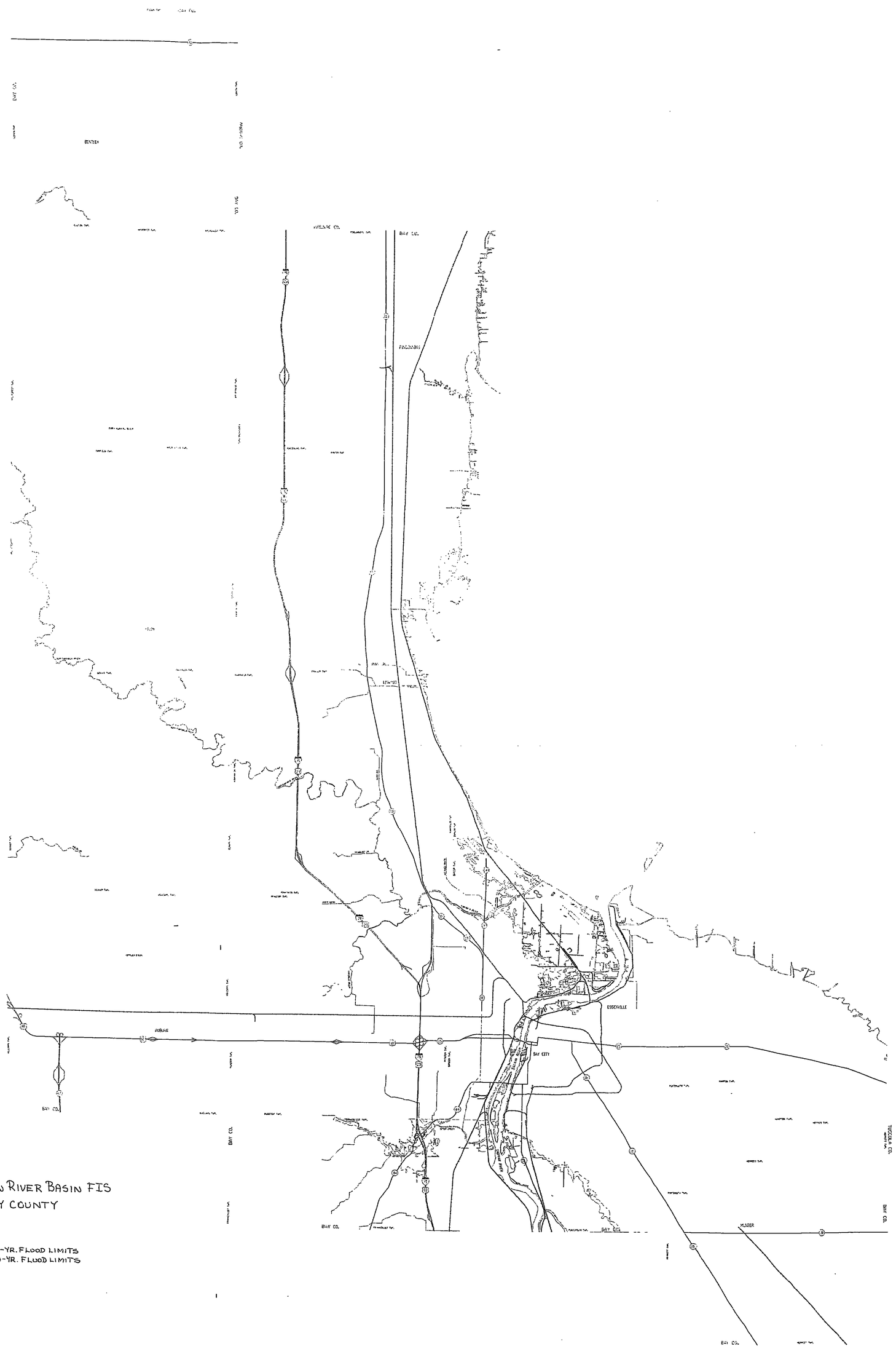
THE GREAT FLOOD OF 1986.
SAGINAW RIVER PROFILE

CONDITION SEPTEMBER, 1986

SAGINAW AREA OFFICE

SCALE: AS NOTED
DRAWING NUMBER
SHEET 1 OF 1

THIS PLAN ACCOMPANIES CONTRACT NO. DACW-
MODIFICATION NO.
INVITATION NO. DACW.



SAGINAW RIVER BASIN FIS
BAY COUNTY

LEGEND:

100-YR. FLOOD LIMITS
500-YR. FLOOD LIMITS

FIGURE 3

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW TWP

3) WATERCOURSE: TITTABAWASSEE RIVER

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

```
 $$$$$$      $$      $$$$$$   $$$$$$$$   $$$$$ $  $$$$$$$$  $$$$$$$$
$$    $$   $$$$    $$    $$     $$     $$    $      $$     $$
$$        $$  $$   $$           $$     $$   $$$     $$     $$
 $$$$$$   $$    $$  $$           $$     $$  $ $$     $$     $$$$$$$
       $$ $$    $$  $$           $$     $$ $$ $$     $$           $$
       $$ $$$$$$$$  $$  $$$$     $$     $$ $  $$     $$           $$
       $$ $$    $$  $$    $$     $$     $$$   $$     $$           $$
$$    $$  $$    $$  $$    $$  $$ $$      $    $$  $$ $$     $$    $$
 $$$$$$   $$    $$   $$$$$$    $$$      $ $$$$$    $$$      $$$$$$
```

494

SAGINAW TOWNSHIP

TITTABAWASSEE RIVER

100-YEAR ENCROACHED RUN

9-20-77

S C O P E 2 L O A D M A P LOADER VERSION 1.0 09/13/77 10.13.45 PAGE 1

PROGRAM WILL BE ENTERED AT HEC2 (373) SCM LENGTH 146670 LCM LENGTH 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11606
CARD	12007	1673
SUMPO	13702	1063
CHIMP	14765	1645
DC	16632	703
FLODIS	17535	444
BLFLO	20201	1003
ADDPTS	21204	334
BWEIR	21540	1356
YCRIT	23116	122
SLARA	23240	256
SCALE	23516	246
XSEC	23764	1264
PROF	25250	1142
/STP.END/	26412	1
/FCL.C./	26413	23
/Q8.IO./	26436	140
Q8NTRY=	26576	1
COMIO=	26577	44
ENDFIL=	26643	45
FECMSK=	26710	41
FLTIN=	26751	156
FLTOUT=	27127	315
FMTAP=	27444	372
FORSYS=	30036	561
FORUTL=	30617	16
GETFIT=	30635	43
INCOM=	30700	256
INPC=	31156	173
KODER=	31351	467
KRAKER=	32040	454
/HEADING/	32514	16
OUTC=	32532	1017
OUTCOM=	33551	204
REWIND=	33755	36
GOTOER=	34013	14
ALOG	34027	77
EXP	34126	102
ITOJ*	34230	52
SYSAID=	34302	1
SYS=1ST	34303	62
XTOY*	34365	55
//	34442	112226

```
*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
*****************************************
```

```
C
1       SAGINAW TOWNSHIP
T2       100-YEAR FLOOD
T3       TITTABAWASSEE RIVER J@A FILE NO. 5555-60 THOMAS BAIER PROJECT MANAGER

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC    HVINS     Q        WSEL     FQ

     -1.       4.       0.       0.  0.000000     0.00      0.0       0.   593.860    0.000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH     FN       ALLDC     IBW      CHNIM    ITRACE

    -1.000    0.000   -1.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

J3      1.000    10.000    11.000    12.000    14.000     8.000     4.000     0.000     0.000     0.000
NC       .080      .150      .030      .300      .500     0.000     0.000     0.000     0.000     0.000
QT@MOUTH 4.000 28600.000 42600.000 48800.000 64000.000 20900.000     0.000     0.000     0.000     0.000
                  Q10       Q50       Q100      Q500
X1      2.628    91.000  2486.000  2820.000    24.500    24.500    24.500     0.000     0.000     0.000
X3      0.000     0.000     0.000   900.000     0.000  3475.000     0.000     0.000     0.000     0.000
GR    592.800     0.000   592.300    85.700   592.300   171.400   592.100   257.100   591.800   300.000
GR    591.600   342.800   591.300   428.600   591.200   514.300   591.000   600.000   590.700   685.700
GR    590.900   771.500   590.900   857.200   590.800   942.900   590.600  1028.600   590.500  1114.400
GR    590.200  1200.100   589.900  1285.800   590.000  1371.500   590.500  1457.300   590.300  1543.000
GR    590.400  1628.700   590.600  1714.400   590.300  1800.200   589.900  1885.900   589.600  1971.600
GR    589.900  2057.300   590.200  2143.100   590.400  2228.800   590.800  2314.500   591.200  2400.200
GR    588.500  2486.000   584.000  2491.800   574.100  2503.300   575.700  2514.800   575.300  2526.300
GR    575.200  2537.800   574.800  2549.300   574.000  2560.800   574.200  2572.300   574.700  2583.900
GR    575.100  2595.400   575.500  2606.900   575.000  2618.400   574.300  2629.900   573.900  2641.400
GR    573.900  2652.900   573.900  2664.500   574.000  2676.000   573.200  2687.500   572.500  2699.000
GR    571.600  2710.500   569.400  2722.000   571.500  2733.500   571.200  2745.100   572.800  2756.600
GR    572.100  2768.100   572.000  2779.600   574.100  2791.100   575.100  2802.600   584.200  2814.100
GR    591.800  2820.000   593.700  2861.800   593.300  2903.600   593.100  2945.400   593.000  2987.300
GR    592.800  3029.100   592.700  3070.900   592.700  3112.800   592.600  3154.600   592.500  3196.400
GR    592.300  3238.300   592.200  3280.100   592.200  3321.900   592.100  3363.800   592.100  3405.600
GR    592.100  3447.400   592.200  3489.300   592.200  3531.100   592.200  3572.900   591.400  3614.800
GR    591.700  3656.600   591.600  3698.400   591.400  3740.300   590.800  3782.100   590.300  3823.900
GR    590.500  3865.800   590.800  3907.600   590.900  3949.400   591.100  3991.300   591.200  4033.100
GR    591.400  4075.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
NH      5.000      .035  1450.000     1.000  2200.000      .035  2400.000      .030  2720.000      .035
NH   3750.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1      2.631    86.000  2400.000  2720.000    24.500    24.500    24.500      .976     0.000     0.000
X3      0.000     0.000     0.000   800.000     0.000  3375.000     0.000     0.000     0.000     0.000
GR    589.900     0.000   589.700   100.000   589.900   200.000   590.200   300.000   590.800   400.000
GR    591.200   500.000   591.400   600.000   591.700   700.000   592.100   800.000   592.000   900.000
GR    592.100  1000.000   592.400  1100.000   592.700  1200.000   592.800  1300.000   593.000  1400.000
GR    593.100  1500.000   593.400  1600.000   593.500  1700.000   593.400  1800.000   593.300  1900.000
GR    594.200  2000.000   594.900  2100.000   595.700  2200.000   596.400  2300.000   597.800  2388.000
GR    592.700  2388.000   592.700  2400.000   587.700  2400.000   570.500  2410.000   575.500  2420.000
GR    574.900  2430.000   575.200  2440.000   574.700  2450.000   574.500  2460.000   592.700  2460.000
GR    592.700  2464.000   573.600  2464.000   572.300  2470.000   572.300  2480.000   573.200  2490.000
GR    573.700  2500.000   574.200  2510.000   574.700  2520.000   573.900  2526.000   592.700  2526.000
GR    592.700  2530.000   573.300  2530.000   572.700  2540.000   572.300  2550.000   571.700  2560.000
GR    571.600  2570.000   572.700  2580.000   573[illegible]00  2590.000   592.700  2590.000   592.700  259[illegible]000
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GR	572.800	2594.000	572.000	2600.000	571.400	2610.000	569.700	2620.000	569.400	2630.000	
GR	571.100	2640.000	570.100	2650.000	573.300	2656.000	592.700	2656.000	592.700	2660.000	
GR	575.400	2660.000	572.900	2670.000	572.700	2680.000	571.700	2690.000	574.500	2700.000	
GR	570.800	2710.000	584.000	2720.000	592.700	2720.000	592.700	2732.000	597.400	2732.000	
GR	595.900	2800.000	594.800	2900.000	594.200	3000.000	593.500	3100.000	593.000	3200.000	
GR	592.700	3300.000	592.800	3400.000	592.700	3500.000	593.100	3600.000	593.000	3700.000	
GR	592.900	3750.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
SB	1.250	1.500	2.500	0.000	320.000	16.000	5952.000	0.000	569.400	569.400	Center Road
X1	2.640	0.000	0.000	0.000	38.000	38.000	38.000	0.000	0.000	0.000	
X2	0.000	0.000	1.000	592.700	592.800	0.000	0.000	0.000	.976	0.000	
X3	0.000	0.000	0.000	780.800	0.000	3294.000	0.000	0.000	0.000	0.000	
BT	41.000	800.000	592.100	0.000	900.000	592.000	0.000	1000.000	592.100	0.000	
BT	1100.000	592.400	0.000	1200.000	592.700	0.000	1300.000	592.800	0.000	1400.000	
BT	593.000	0.000	1500.000	593.100	0.000	1600.000	593.400	0.000	1700.000	593.500	
BT	0.000	1800.000	593.400	0.000	1900.000	593.300	0.000	2000.000	594.200	0.000	
BT	2100.000	594.900	0.000	2200.000	595.700	0.000	2300.000	596.400	0.000	2388.000	
BT	597.800	0.000	2388.000	601.600	592.700	2400.000	601.600	592.700	2460.000	601.600	
BT	592.700	2464.000	601.600	592.700	2526.000	601.600	592.700	2530.000	601.600	592.700	
BT	2590.000	601.600	592.700	2594.000	601.600	592.700	2656.000	601.600	592.700	2660.000	
BT	601.600	592.700	2720.000	601.600	592.700	2732.000	601.600	592.700	2732.000	597.400	
BT	0.000	2800.000	595.900	0.000	2900.000	594.800	0.000	3000.000	594.200	0.000	
BT	3100.000	593.500	0.000	3200.000	593.000	0.000	3300.000	592.700	0.000	3400.000	
BT	592.800	0.000	3500.000	592.700	0.000	3600.000	593.100	0.000	3700.000	593.000	
BT	0.000	3750.000	592.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
NH	5.000	.060	1481.800	1.000	2140.500	.130	2387.500	.030	2727.500	.090	
NH	3856.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	2.643	91.000	2387.500	2727.500	12.200	12.200	12.200	0.000	0.000	0.000	
X3	0.000	0.000	0.000	850.000	0.000	3375.000	0.000	0.000	0.000	0.000	
GR	589.900	0.000	589.500	82.300	589.800	164.600	590.300	246.900	590.500	300.000	
GR	590.600	329.300	591.000	411.600	591.200	493.900	591.400	576.200	591.700	658.600	
GR	592.000	740.900	592.200	823.200	592.000	905.600	591.300	987.900	591.500	1070.200	
GR	591.700	1152.500	591.600	1234.900	591.800	1317.200	591.900	1399.500	591.500	1481.800	
GR	591.400	1564.200	591.600	1646.500	591.800	1728.800	591.500	1811.200	591.200	1893.500	
GR	591.700	1975.800	592.100	2058.100	592.400	2140.500	593.300	2222.800	594.500	2305.100	
GR	591.300	2387.500	583.300	2393.500	573.000	2405.200	575.500	2416.900	575.000	2428.600	
GR	574.800	2440.300	574.400	2452.000	573.000	2463.700	572.800	2475.400	573.300	2487.200	
GR	573.600	2498.900	574.000	2510.600	573.500	2522.300	572.500	2534.000	571.900	2545.700	
GR	571.200	2557.400	569.400	2569.200	572.200	2580.900	572.400	2592.600	571.700	2604.300	
GR	570.800	2616.000	569.400	2627.700	571.600	2639.400	571.700	2651.200	574.400	2662.900	
GR	573.500	2674.600	573.000	2686.300	574.000	2698.000	572.700	2709.700	581.100	2721.400	
GR	592.100	2727.500	593.500	2765.100	592.900	2802.700	592.400	2840.300	592.100	2877.900	
GR	591.800	2915.600	591.700	2953.200	591.600	2990.800	591.500	3028.400	591.200	3066.100	
GR	591.100	3103.700	590.900	3141.300	590.600	3178.900	590.400	3216.600	590.100	3254.200	
GR	589.800	3291.800	589.600	3329.400	589.900	3367.100	590.200	3404.700	590.800	3442.300	
GR	591.400	3479.900	592.100	3517.600	592.800	3555.200	593.000	3592.800	593.200	3630.400	
GR	593.500	3668.100	593.800	3705.700	594.000	3743.300	594.100	3780.900	594.200	3818.600	
GR	594.400	3856.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
NH	6.000	.100	1474.100	1.000	2150.000	.120	2375.000	.030	2735.000	.080	
NH	3385.000	.100	3962.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	
X1	2.645	92.000	2375.000	2735.000	12.300	12.300	12.300	0.000	0.000	0.000	
X3	0.000	0.000	0.000	825.000	0.000	3350.000	0.000	0.000	0.000	0.000	
GR	590.000	0.000	589.300	81.800	589.900	163.700	590.600	245.600	590.900	327.500	
GR	591.200	409.400	591.400	491.300	591.600	573.200	592.000	655.100	592.300	737.000	
GR	592.400	818.900	592.100	900.800	590.700	982.700	590.700	1064.600	590.900	1146.500	
GR	590.500	1228.400	590.800	1310.300	590.900	1392.200	590.100	1474.100	589.600	1556.000	
GR	589.800	1637.900	590.200	1719.800	589.700	1801.700	589.200	1883.600	589.500	1965.500	
GR	589.700	2047.400	589.600	2129.300	589.900	2150.000	590.800	2211.200	592.500	2293.100	
GR	589.900	2375.000	582.700	2381.600	574.000	2394.000	576.200	2406.400	575.100	2418.800	
GR	574.900	2431.100	574.700	2443.500	573.500	2455.900	573.300	2468.300	573.300	2480.700	
GR	573.500	2493.000	573.700	2505.400	573.200	2517.800	572.200	2530.200	571.500	2542.600	
GR	570.800	2554.900	569.400	2567.300	571.700	2579.700	572.100	2592.100	571.900	2604.500	
GR	571.500	2616.800	571.400	2629.200	572.500	2641.600	572.600	2654.000	574.900	2666.400	
GR	[illegible]	[illegible]	[illegible]	[illegible]	574.700	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	

GR	591.500	2735.000	590.100	2775.900	589.700	2816.800	589.300	2857.700	589.100	2898.600
GR	588.900	2939.500	588.800	2980.400	588.900	3021.400	588.800	3062.300	588.600	3103.200
GR	588.500	3144.100	588.300	3185.000	588.000	3225.900	587.700	3266.900	587.300	3307.800
GR	586.800	3348.700	586.500	3385.000	586.500	3389.600	587.100	3430.500	587.700	3471.400
GR	589.000	3512.400	590.200	3553.300	591.600	3594.200	592.900	3635.100	593.300	3676.000
GR	593.700	3716.900	594.100	3757.900	594.600	3798.800	595.000	3839.700	595.300	3880.600
GR	595.600	3921.500	596.000	3962.500	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	.100	1500.000	1.000	2150.000	.120	2350.000	.030	2750.000	.080
NH	3400.000	.120	4175.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.649	81.000	2350.000	2750.000	24.500	24.500	24.500	0.000	0.000	0.000
X3	0.000	0.000	0.000	800.000	0.000	3325.000	0.000	0.000	0.000	0.000
GR	590.100	0.000	588.700	100.000	590.900	200.000	591.600	300.000	591.600	400.000
GR	591.800	500.000	592.000	600.000	592.900	700.000	592.800	800.000	592.300	900.000
GR	588.300	1000.000	589.800	1100.000	588.300	1200.000	588.800	1300.000	588.800	1400.000
GR	586.000	1500.000	586.100	1600.000	587.000	1700.000	585.900	1800.000	584.700	1900.000
GR	585.300	2000.000	583.800	2100.000	584.900	2150.000	586.000	2200.000	589.400	2300.000
GR	587.200	2350.000	580.200	2355.000	578.000	2360.000	577.500	2370.000	576.500	2380.000
GR	577.200	2390.000	575.500	2400.000	575.000	2410.000	575.000	2420.000	575.000	2430.000
GR	574.500	2440.000	574.500	2450.000	574.400	2460.000	573.500	2470.000	573.000	2500.000
GR	572.500	2510.000	572.000	2520.000	571.000	2530.000	570.600	2540.000	570.000	2550.000
GR	569.400	2560.000	569.800	2570.000	570.900	2580.000	571.500	2590.000	572.000	2600.000
GR	572.500	2610.000	573.000	2620.000	573.500	2630.000	574.000	2640.000	574.600	2660.000
GR	575.000	2665.000	575.300	2670.000	575.500	2680.000	575.700	2690.000	575.800	2700.000
GR	575.900	2710.000	576.200	2720.000	577.300	2730.000	580.500	2740.000	590.400	2750.000
GR	583.100	2760.000	583.400	2800.000	583.100	2900.000	582.900	3000.000	583.500	3100.000
GR	583.300	3200.000	583.100	3300.000	581.900	3400.000	580.100	3500.000	582.600	3600.000
GR	587.700	3700.000	593.500	3800.000	594.700	3900.000	596.500	4000.000	598.000	4100.000
GR	599.100	4175.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.100	2150.000	.120	2350.000	.040	2750.000	.080	3400.000	.120
NH	4175.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.992	86.000	2350.000	2750.000	1200.000	2300.000	1850.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1200.000	0.000	3600.000	0.000	0.000	0.000	0.000
GR	590.100	0.000	588.700	100.000	590.900	200.000	591.600	300.000	591.600	400.000
GR	591.800	500.000	592.000	600.000	592.900	700.000	592.800	800.000	592.300	900.000
GR	588.300	1000.000	589.800	1100.000	588.300	1200.000	588.800	1300.000	588.800	1400.000
GR	586.000	1500.000	586.100	1600.000	587.000	1700.000	595.000	1720.000	600.000	1740.000
GR	605.000	1750.000	610.000	1760.000	615.000	1770.000	615.000	2220.000	610.000	2230.000
GR	605.000	2240.000	600.000	2250.000	596.500	2267.000	593.000	2284.000	589.400	2300.000
GR	587.200	2350.000	580.200	2355.000	578.000	2360.000	577.500	2370.000	576.500	2380.000
GR	577.200	2390.000	575.500	2400.000	575.000	2410.000	575.000	2420.000	575.000	2430.000
GR	574.500	2440.000	574.500	2450.000	574.400	2460.000	575.500	2470.000	575.500	2500.000
GR	575.500	2510.000	575.500	2520.000	575.000	2530.000	575.000	2540.000	575.500	2550.000
GR	575.200	2560.000	575.000	2570.000	574.500	2580.000	575.000	2590.000	575.200	2600.000
GR	576.500	2610.000	578.100	2620.000	581.400	2630.000	584.400	2640.000	583.100	2660.000
GR	581.400	2665.000	580.500	2670.000	579.500	2680.000	579.700	2690.000	579.900	2700.000
GR	579.500	2710.000	579.800	2720.000	579.500	2730.000	580.500	2740.000	590.400	2750.000
GR	583.100	2760.000	583.400	2800.000	583.100	2900.000	582.900	3000.000	583.500	3100.000
GR	583.300	3200.000	583.100	3300.000	581.900	3400.000	580.100	3500.000	582.600	3600.000
GR	587.700	3700.000	593.500	3800.000	594.700	3900.000	596.500	4000.000	598.000	4100.000
GR	599.100	4175.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.130	.130	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.456	62.000	400.000	800.000	2500.000	2500.000	2500.000	0.000	0.000	0.000
GR	596.100	0.000	590.800	20.000	586.700	100.000	586.900	200.000	586.800	300.000
GR	584.400	400.000	581.600	410.000	578.100	420.000	575.700	430.000	575.700	440.000
GR	573.500	450.000	572.600	460.000	572.600	470.000	572.600	480.000	572.600	490.000
GR	572.600	500.000	574.100	510.000	574.700	520.000	575.200	530.000	575.800	540.000
GR	575.800	550.000	575.800	560.000	575.900	570.000	575.800	580.000	576.100	590.000
GR	575.900	600.000	576.000	610.000	575.900	620.000	575.700	630.000	576.400	640.000
GR	576.900	650.000	576.700	660.000	576.700	670.000	576.400	680.000	576.600	690.000
GR	577.000	700.000	577.400	710.000	575.100	720.000	575.500	730.000	577.200	740.000
GR	578.500	750.000	581.600	755.000	586.300	770.000	590.400	800.000	585.000	900.000
GR	584.200	1000.000	584.000	1100.000	585.300	1200.000	586.500	1300.000	584.900	1400.000
GR	584.400	1500.000	584.300	1600.000	58[illegible].000	1700.000	583.200	1800.000	583.000	1900.000

GR	582.300	2000.000	581.000	2100.000	580.000	2200.000	582.000	2300.000	585.000	2400.000
GR	590.000	2500.000	592.000	2600.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	8.000	.150	400.000	.040	770.000	.150	871.000	1.000	1386.000	.150
NH	1551.000	1.000	1794.000	.150	1865.000	.150	2510.000	0.000	0.000	0.000
X1	3.693	66.000	400.000	800.000	1250.000	1250.000	1250.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	360.000	0.000	1880.000	0.000	0.000	0.000	0.000
GR	596.100	0.000	590.800	20.000	586.700	100.000	586.900	200.000	586.800	300.000
GR	584.400	400.000	581.600	410.000	578.100	420.000	575.700	430.000	575.700	440.000
GR	573.500	450.000	572.000	460.000	572.300	470.000	572.100	480.000	571.800	490.000
GR	572.000	500.000	574.100	510.000	574.700	520.000	575.200	530.000	575.800	540.000
GR	575.800	550.000	575.800	560.000	575.900	570.000	575.800	580.000	576.100	590.000
GR	575.900	600.000	576.000	610.000	575.900	620.000	575.700	630.000	576.400	640.000
GR	576.900	650.000	576.700	660.000	576.700	670.000	576.400	680.000	576.600	690.000
GR	577.000	700.000	577.400	710.000	575.100	720.000	575.500	730.000	577.200	740.000
GR	578.500	750.000	581.600	755.000	586.300	770.000	590.400	800.000	586.600	871.000
GR	585.000	900.000	584.200	1000.000	584.000	1100.000	585.300	1200.000	586.500	1300.000
GR	585.100	1386.000	584.900	1400.000	584.400	1500.000	584.300	1551.000	584.300	1600.000
GR	591.300	1700.000	581.400	1794.000	580.800	1800.000	582.600	1865.000	583.600	1900.000
GR	590.800	2000.000	593.900	2100.000	594.200	2200.000	595.500	2300.000	595.500	2400.000
GR	596.300	2510.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	.060	420.000	.040	847.000	.070	2000.000	.060	2680.000	0.000
X1	3.711	93.000	420.000	847.000	99.000	99.000	99.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	420.000	0.000	1840.000	0.000	0.000	0.000	0.000
GR	598.300	0.000	598.400	120.000	599.300	320.000	600.000	415.000	599.940	420.000
GR	579.700	420.000	576.200	440.000	575.600	450.000	577.400	455.000	577.400	461.000
GR	595.050	461.000	595.050	468.000	581.300	468.000	581.300	472.000	575.900	473.000
GR	571.800	480.000	571.800	493.000	572.100	505.000	593.600	505.000	593.600	524.000
GR	572.900	524.000	572.900	530.000	574.300	536.000	575.300	540.000	571.800	550.000
GR	573.100	555.000	581.000	556.000	581.000	561.500	595.050	561.500	595.050	565.000
GR	594.270	565.000	594.270	568.000	581.000	568.000	581.000	572.000	577.300	573.000
GR	576.800	580.000	576.500	590.000	577.100	620.000	576.600	650.000	576.800	660.000
GR	577.800	670.000	580.800	680.000	580.500	683.000	594.220	683.000	594.220	691.000
GR	579.500	691.000	577.600	700.000	577.600	720.000	583.500	805.000	594.220	805.000
GR	594.220	808.000	594.220	812.000	582.100	812.000	583.000	820.000	590.000	837.000
GR	590.800	847.000	599.540	847.000	598.500	1320.000	598.740	1412.000	584.000	1412.000
GR	583.700	1420.000	583.000	1438.000	594.950	1438.000	594.950	1442.000	583.000	1442.000
GR	582.300	1450.000	583.500	1460.000	581.700	1468.000	594.930	1468.000	594.930	1472.000
GR	581.700	1472.000	581.900	1498.000	594.920	1498.000	594.920	1502.000	581.900	1502.000
GR	584.500	1528.000	598.800	1528.000	598.400	1620.000	598.400	1820.000	594.140	1820.000
GR	580.700	1821.000	580.700	1839.000	598.370	1840.000	598.200	1920.000	598.100	2000.000
GR	598.100	2020.000	598.000	2120.000	597.700	2220.000	597.500	2320.000	597.300	2420.000
GR	597.100	2520.000	596.600	2620.000	596.400	2680.000	0.000	0.000	0.000	0.000
SB	0.000	1.500	3.000	0.000	1420.000	0.000	7589.000	0.000	571.800	571.800 C to Railroad
X1	3.717	0.000	0.000	0.000	24.000	24.000	24.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	594.200	598.400	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	420.000	0.000	1840.000	0.000	0.000	0.000	0.000
BT	42.000	0.000	598.300	0.000	120.000	598.400	0.000	320.000	599.300	0.000
BT	415.000	600.000	0.000	420.000	599.940	0.000	420.000	599.940	594.510	461.000
BT	600.000	595.050	468.000	600.000	595.050	505.000	600.000	593.600	524.000	600.070
BT	593.600	561.500	600.080	595.050	565.000	600.080	595.050	565.000	604.970	594.270
BT	568.000	605.000	594.270	683.000	605.000	594.220	691.000	605.000	594.220	805.000
BT	604.850	594.220	808.000	604.850	594.220	808.000	599.720	594.220	812.000	599.720
BT	594.220	847.000	599.540	594.170	1320.000	598.500	0.000	1412.000	598.740	594.960
BT	1438.000	598.750	594.950	1442.000	598.750	594.950	1468.000	598.760	594.930	1472.000
BT	598.760	594.930	1498.000	598.770	594.920	1502.000	598.770	594.920	1528.000	598.770
BT	594.910	1620.000	598.400	0.000	1820.000	598.370	594.140	1840.000	598.370	594.140
BT	1920.000	598.200	0.000	2020.000	598.100	0.000	2120.000	598.000	0.000	2220.000
BT	597.700	0.000	2320.000	597.500	0.000	2420.000	597.300	0.000	2520.000	597.100
BT	0.000	2620.000	596.600	0.000	2680.000	596.400	0.000	0.000	0.000	0.000
NH	8.000	.080	400.000	.040	770.000	.150	896.000	1.000	1361.000	.150
NH	1576.000	1.000	1769.000	.150	1887.000	.150	2510.000	0.000	0.000	0.000
X1	3.725	67.000	385.000	812.000	49.000	49.000	49.000	0.000	0.000	0.000

X3	0.000	0.000	0.000	360.000	0.000	1880.000	0.000	0.000	0.000	0.000
GR	596.100	0.000	594.600	20.000	592.500	100.000	592.000	200.000	586.800	300.000
GR	584.400	385.000	580.000	400.000	577.000	410.000	576.000	420.000	575.700	430.000
GR	575.700	440.000	573.500	450.000	572.000	460.000	572.300	470.000	572.100	480.000
GR	571.800	490.000	572.000	500.000	574.100	510.000	574.700	520.000	575.200	530.000
GR	575.800	540.000	575.800	550.000	575.800	560.000	575.900	570.000	575.800	580.000
GR	576.100	590.000	575.900	600.000	576.000	610.000	575.900	620.000	575.700	630.000
GR	576.400	640.000	576.900	650.000	576.700	660.000	576.700	670.000	576.400	680.000
GR	576.600	690.000	577.000	700.000	577.400	710.000	575.100	720.000	575.500	730.000
GR	577.200	740.000	578.500	750.000	579.500	755.000	581.300	770.000	590.400	812.000
GR	585.200	896.000	585.000	900.000	584.200	1000.000	584.000	1100.000	585.300	1200.000
GR	586.500	1300.000	585.500	1361.000	584.900	1400.000	584.400	1500.000	584.300	1576.000
GR	584.300	1600.000	591.300	1700.000	584.100	1769.000	580.800	1800.000	583.200	1887.000
GR	583.600	1900.000	590.800	2000.000	593.900	2100.000	594.200	2200.000	595.500	2300.000
GR	595.500	2400.000	596.300	2510.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.150	800.000	.120	1100.000	.040	1500.000	.120	1600.000	.090
NH	2800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.877	51.000	1100.000	1500.000	800.000	650.000	800.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	800.000	0.000	2700.000	0.000	0.000	0.000	0.000
GR	600.000	0.000	595.000	150.000	590.000	450.000	585.000	500.000	582.000	600.000
GR	585.000	800.000	585.000	1100.000	581.600	1110.000	578.100	1120.000	575.700	1130.000
GR	575.700	1140.000	573.500	1150.000	572.000	1160.000	572.300	1170.000	572.100	1180.000
GR	571.700	1190.000	572.000	1200.000	574.100	1210.000	574.700	1220.000	575.200	1230.000
GR	575.800	1240.000	575.800	1250.000	575.800	1260.000	575.900	1270.000	575.800	1280.000
GR	576.100	1290.000	575.900	1300.000	576.000	1310.000	575.900	1320.000	575.700	1330.000
GR	576.400	1340.000	576.900	1350.000	576.700	1360.000	576.700	1370.000	576.400	1380.000
GR	576.600	1390.000	577.000	1400.000	577.400	1410.000	575.100	1420.000	575.500	1430.000
GR	577.200	1440.000	578.500	1450.000	581.600	1455.000	586.300	1470.000	585.000	1500.000
GR	585.000	1600.000	595.000	2200.000	580.000	2400.000	585.000	2550.000	590.000	2700.000
GR	595.000	2800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.120	.150	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4.451	71.000	3605.000	3840.000	2600.000	3150.000	3050.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1560.000	0.000	4000.000	0.000	0.000	0.000	0.000
GR	599.200	0.000	597.200	100.000	596.500	200.000	596.600	300.000	595.600	400.000
GR	595.700	500.000	595.500	600.000	594.500	700.000	593.100	800.000	588.400	900.000
GR	586.100	1000.000	584.300	1100.000	583.400	1200.000	583.300	1300.000	583.100	1400.000
GR	583.800	1500.000	583.200	1600.000	583.700	1700.000	584.200	1800.000	583.600	1900.000
GR	583.000	2000.000	584.000	2100.000	583.100	2200.000	584.700	2300.000	583.800	2400.000
GR	584.000	2500.000	583.800	2600.000	582.200	2700.000	587.100	2800.000	583.400	2900.000
GR	584.800	3000.000	586.300	3100.000	587.400	3200.000	586.200	3300.000	587.600	3400.000
GR	590.200	3500.000	586.900	3605.000	581.800	3610.000	578.500	3620.000	573.300	3630.000
GR	572.300	3640.000	572.900	3650.000	572.800	3660.000	573.400	3670.000	573.300	3680.000
GR	573.300	3690.000	572.900	3700.000	572.600	3710.000	572.400	3720.000	572.600	3730.000
GR	572.600	3740.000	572.600	3750.000	572.700	3760.000	572.500	3770.000	572.100	3780.000
GR	571.600	3790.000	571.200	3800.000	574.400	3810.000	579.900	3820.000	591.800	3840.000
GR	592.200	3900.000	591.000	4000.000	591.200	4100.000	588.800	4200.000	591.000	4300.000
GR	593.400	4400.000	591.100	4500.000	593.400	4600.000	591.700	4700.000	593.700	4800.000
GR	594.400	4882.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	4.754	63.000	3400.000	3635.000	1050.000	1600.000	1600.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1330.000	0.000	4000.000	0.000	0.000	0.000	0.000
GR	599.200	0.000	597.200	100.000	596.500	200.000	596.600	300.000	595.600	400.000
GR	595.700	500.000	595.500	600.000	594.500	700.000	593.100	800.000	588.400	900.000
GR	586.100	1000.000	584.300	1100.000	583.400	1200.000	583.300	1300.000	583.100	1400.000
GR	583.800	1500.000	583.200	1600.000	583.700	1700.000	584.200	1800.000	583.600	1900.000
GR	583.000	2000.000	584.000	2100.000	583.100	2200.000	584.700	2300.000	583.800	2400.000
GR	584.000	2500.000	583.800	2600.000	582.200	2700.000	587.100	2800.000	583.400	2900.000
GR	584.800	3000.000	586.300	3100.000	587.400	3200.000	586.200	3300.000	587.600	3400.000
GR	581.800	3410.000	578.500	3420.000	573.300	3430.000	572.100	3440.000	572.100	3450.000
GR	572.100	3460.000	572.400	3470.000	572.300	3480.000	572.300	3490.000	572.100	3500.000
GR	572.100	3510.000	572.100	3520.000	572.100	3530.000	572.100	3540.000	572.100	3550.000
GR	572.100	3560.000	572.100	3570.000	572.100	3580.000	572.100	3590.000	572.100	3600.000
GR	574.400	3610.000	579.900	3620.000	585.000	3635.000	585.000	3700.000	585.000	3850.000
GR	590.000	3950.000	595.000	4000.000	600.000	4800.000	0.000	0.000	0.000	0.000

NC	.130	.150	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5.038	84.000	1600.000	1944.400	1150.000	1500.000	1500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	2040.000	0.000	0.000	0.000	0.000
GR	601.500	0.000	600.900	100.000	600.200	200.000	599.600	300.000	598.700	400.000
GR	590.600	500.000	590.800	600.000	590.800	690.000	589.400	800.000	588.700	900.000
GR	588.800	1000.000	589.700	1100.000	589.700	1200.000	592.000	1300.000	590.100	1400.000
GR	588.600	1500.000	592.200	1600.000	579.000	1604.100	577.000	1618.100	577.400	1627.200
GR	576.600	1636.300	576.500	1645.400	577.300	1654.500	577.600	1663.600	577.400	1672.700
GR	577.000	1681.800	577.200	1690.900	577.400	1699.900	577.200	1708.900	577.300	1717.900
GR	577.400	1726.800	577.200	1735.900	576.900	1744.900	576.000	1753.900	575.500	1762.900
GR	575.000	1771.900	574.500	1780.900	574.000	1789.900	573.500	1798.900	572.900	1807.900
GR	575.000	1816.900	577.000	1826.000	578.100	1835.100	578.300	1844.100	578.300	1853.200
GR	578.000	1862.300	579.500	1871.300	579.700	1880.400	579.800	1889.500	580.600	1898.500
GR	581.200	1907.600	581.900	1921.700	582.400	1926.300	584.000	1935.400	584.700	1944.400
GR	583.800	1953.500	581.900	1962.600	579.400	1971.600	580.000	1980.700	580.300	1989.700
GR	581.000	1998.800	581.200	2007.900	581.000	2016.900	580.900	2025.900	581.000	2035.100
GR	581.000	2044.100	581.200	2053.200	581.900	2077.100	584.100	2081.200	585.900	2143.800
GR	586.000	2234.400	598.300	2325.000	596.700	2500.000	594.900	2600.000	595.400	2700.000
GR	595.200	2800.000	597.500	2900.000	596.600	3000.000	596.200	3100.000	595.600	3200.000
GR	595.500	3300.000	596.400	3400.000	596.500	3500.000	596.900	3600.000	0.000	0.000
NC	.080	.150	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5.046	91.000	1556.000	2029.000	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	414.000	0.000	2078.000	0.000	0.000	0.000	0.000
GR	601.300	0.000	602.400	156.000	603.100	356.000	603.600	414.000	584.700	414.000
GR	582.500	484.500	599.900	484.500	599.900	487.500	582.500	487.500	583.300	558.500
GR	599.800	558.500	599.800	561.500	583.300	561.500	582.200	632.000	603.300	632.000
GR	603.300	656.000	603.000	756.000	604.200	1056.000	603.900	1256.000	603.600	1356.000
GR	602.300	1456.000	602.300	1551.000	602.300	1556.000	580.700	1556.000	578.500	1583.200
GR	580.000	1601.300	578.200	1620.800	600.000	1620.800	600.000	1623.500	578.200	1623.500
GR	576.700	1628.500	577.500	1646.600	577.400	1655.700	578.500	1664.800	576.700	1673.900
GR	577.500	1682.900	576.700	1687.900	600.000	1687.900	600.000	1690.600	576.700	1690.600
GR	575.500	1701.000	576.000	1719.100	575.600	1728.200	574.000	1746.300	575.000	1756.700
GR	600.000	1756.700	600.000	1759.500	575.000	1759.500	572.900	1764.500	576.700	1773.600
GR	578.500	1800.800	578.500	1809.900	576.200	1818.900	577.500	1824.700	600.000	1824.700
GR	600.000	1827.400	577.500	1827.400	578.300	1836.900	579.800	1845.900	580.500	1854.900
GR	580.500	1873.200	580.600	1882.300	579.500	1893.600	600.000	1893.600	600.000	1896.300
GR	579.500	1896.300	580.200	1900.400	581.500	1909.500	582.500	1918.600	582.500	1936.700
GR	580.900	1954.800	579.800	1961.600	600.000	1961.600	600.000	1964.300	579.800	1964.300
GR	581.000	1972.900	581.700	1981.900	581.700	1990.900	581.300	1999.900	581.200	2018.000
GR	581.500	2029.000	603.300	2029.000	603.300	2103.000	602.000	2156.000	601.400	2256.000
GR	600.900	2456.000	600.200	2556.000	599.200	2756.000	598.000	2956.000	597.200	3056.000
GR	596.700	3156.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	5.047	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	414.000	0.000	2078.000	0.000	0.000	0.000	0.000
BT	31.000	0.000	601.300	601.300	156.000	602.400	602.400	356.000	603.100	603.100
BT	414.000	603.600	603.600	414.000	604.600	600.000	484.500	604.500	599.900	487.500
BT	604.500	599.900	558.500	604.400	599.800	561.500	604.400	599.800	632.000	604.300
BT	599.700	632.000	603.300	603.300	656.000	603.300	603.300	756.000	603.000	603.000
BT	1056.000	604.200	604.200	1256.000	603.900	603.900	1356.000	603.600	603.600	1456.000
BT	602.300	602.300	1551.000	602.300	602.300	1556.000	602.300	602.300	1556.000	604.600
BT	600.000	2029.000	604.600	600.000	2029.000	603.300	603.300	2103.000	603.300	603.300
BT	2156.000	602.000	602.000	2256.000	601.400	601.400	2456.000	600.900	600.900	2556.000
BT	600.200	600.200	2756.000	599.200	599.200	2956.000	598.000	598.000	3056.000	597.200
BT	597.200	3156.000	596.700	596.700	0.000	0.000	0.000	0.000	0.000	0.000
X1	5.059	0.000	0.000	0.000	64.000	64.000	64.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	414.000	0.000	2078.000	0.000	0.000	0.000	0.000
X1	5.060	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	414.000	0.000	2078.000	0.000	0.000	0.000	0.000
NC	.200	.150	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	5.068	85.000	1600.000	2077.100	49.000	49.000	49.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	270.000	0.000	2040.000	0.000	0.000	0.000	0.000
GR	601.500	0.000	600.900	100.000	600.200	200.000	599.600	300.000	598.700	400.000
GR	584.800	468.000	582.500	549.000	583.100	600.000	583.300	614.000	582.300	686.000
GR	588.700	900.000	588.800	1000.000	589.700	1100.000	589.700	1200.000	592.000	1300.000
GR	590.100	1400.000	588.600	1500.000	592.200	1600.000	579.000	1604.100	577.000	1618.100
GR	577.400	1627.200	576.600	1636.300	576.500	1645.400	577.300	1654.500	577.600	1663.600
GR	577.400	1672.700	577.000	1681.800	577.200	1690.900	577.400	1699.900	577.200	1708.900
GR	577.300	1717.900	577.400	1726.800	577.200	1735.900	576.900	1744.900	576.000	1753.900
GR	575.500	1762.900	575.000	1771.900	574.500	1780.900	574.000	1789.900	573.500	1798.900
GR	572.900	1807.900	578.000	1816.900	577.900	1826.000	578.100	1835.100	578.300	1844.100
GR	578.300	1853.200	578.000	1862.300	579.500	1871.300	579.700	1880.400	579.800	1889.500
GR	580.600	1898.500	581.200	1907.600	581.900	1921.700	582.400	1926.300	584.000	1935.400
GR	584.700	1944.400	583.800	1953.500	581.900	1962.600	579.400	1971.600	580.000	1980.700
GR	580.300	1989.700	581.000	1998.800	581.200	2007.900	581.000	2016.900	580.900	2025.900
GR	581.000	2035.100	581.000	2044.100	581.200	2053.200	581.900	2077.100	584.100	2081.200
GR	585.900	2143.800	586.000	2234.400	598.300	2325.000	596.700	2500.000	594.900	2600.000
GR	595.400	2700.000	595.200	2800.000	597.500	2900.000	596.600	3000.000	596.200	3100.000
GR	595.600	3200.000	595.500	3300.000	596.400	3400.000	596.500	3500.000	596.900	3600.000
NH	4.000	.100	882.000	.045	1078.000	.100	2700.000	.150	3400.000	0.000
X1	5.322	56.000	882.000	1078.000	1300.000	1400.000	1400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	2750.000	0.000	0.000	0.000	0.000
GR	602.100	0.000	601.300	100.000	601.200	200.000	599.400	300.000	595.100	500.000
GR	586.100	600.000	586.500	700.000	587.500	800.000	589.300	882.000	579.100	890.000
GR	575.600	900.000	573.600	910.000	570.100	920.000	569.300	930.000	569.400	940.000
GR	569.100	950.000	570.000	960.000	571.100	970.000	571.400	980.000	571.900	990.000
GR	573.300	1000.000	574.300	1010.000	574.700	1020.000	574.800	1030.000	575.100	1040.000
GR	575.500	1050.000	580.300	1060.000	581.900	1065.000	593.300	1078.000	588.600	1100.000
GR	587.000	1200.000	587.900	1300.000	586.800	1400.000	587.300	1500.000	587.100	1600.000
GR	587.200	1700.000	585.700	1800.000	586.600	1900.000	587.000	2000.000	585.000	2100.000
GR	584.700	2200.000	586.500	2285.000	597.900	2327.000	580.800	2357.000	574.300	2475.000
GR	580.800	2525.000	590.700	2550.000	588.000	2600.000	590.100	2700.000	593.300	2800.000
GR	593.900	2900.000	595.300	3000.000	595.200	3100.000	596.000	3200.000	595.800	3300.000
GR	596.400	3400.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	.120	700.000	.120	1454.000	.045	1800.000	.130	2695.000	0.000
X1	6.061	59.000	1454.000	1800.000	3900.000	3500.000	3900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	604.700	0.000	602.900	100.000	602.600	190.000	593.300	300.000	587.200	400.000
GR	584.900	500.000	585.200	600.000	586.400	700.000	586.800	800.000	587.900	900.000
GR	588.400	1000.000	588.900	1100.000	588.000	1200.000	587.900	1300.000	590.000	1400.000
GR	592.000	1454.000	581.100	1470.000	579.100	1480.000	579.600	1490.000	579.300	1500.000
GR	579.100	1510.000	579.100	1520.000	579.100	1530.000	579.000	1540.000	578.800	1550.000
GR	578.500	1560.000	578.500	1570.000	578.300	1580.000	578.200	1590.000	578.100	1600.000
GR	577.900	1610.000	577.600	1620.000	577.500	1630.000	577.500	1640.000	577.300	1650.000
GR	577.300	1660.000	576.300	1670.000	576.500	1680.000	576.400	1690.000	576.600	1700.000
GR	576.400	1710.000	576.400	1720.000	577.600	1730.000	578.100	1740.000	581.800	1756.000
GR	586.100	1800.000	589.300	1900.000	588.800	2000.000	588.300	2100.000	588.000	2200.000
GR	586.500	2300.000	587.200	2400.000	586.600	2515.000	580.400	2527.000	585.800	2540.000
GR	586.400	2600.000	586.400	2664.000	592.700	2685.000	592.800	2695.000	0.000	0.000
NC	.120	.120	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.596	78.000	130.000	410.000	2500.000	2950.000	2825.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	3880.000	0.000	0.000	0.000	0.000
GR	607.400	0.000	606.600	60.000	604.600	130.000	603.700	131.300	582.800	160.000
GR	580.300	170.000	575.100	180.000	574.300	190.000	573.900	200.000	574.200	210.000
GR	575.000	220.000	575.600	230.000	575.300	240.000	575.500	250.000	575.600	260.000
GR	575.400	270.000	576.100	280.000	579.300	290.000	580.400	300.000	580.200	310.000
GR	578.900	320.000	579.100	330.000	579.300	340.000	578.400	350.000	578.200	360.000
GR	578.800	370.000	581.800	380.000	582.800	385.000	590.300	410.000	592.700	460.000
GR	592.500	466.800	591.400	498.000	589.300	560.000	589.800	660.000	588.000	760.000
GR	587.900	860.000	589.700	960.000	588.500	1060.000	587.300	1160.000	587.100	1168.000
GR	586.600	1199.300	585.100	1260.000	585.000	1266.800	584.600	1298.000	583.700	1360.000
GR	583.200	1460.000	584.700	1560.000	584.700	1660.000	585.600	1760.000	585.200	1860.000
GR	585.100	1960.000	585.400	2060.000	584.900	2160.000	584.900	2260.000	585.600	2360.000

GR	590.500	2460.000	591.900	2560.000	594.700	2660.000	594.400	2760.000	593.500	2860.000
GR	588.500	2960.000	585.500	3060.000	585.700	3160.000	584.000	3260.000	584.200	3360.000
GR	584.500	3460.000	584.300	3488.000	584.100	3520.000	583.800	3560.000	584.000	3660.000
GR	584.700	3760.000	585.500	3776.500	588.900	3808.000	589.400	3860.000	595.200	3960.000
GR	600.800	4060.000	600.900	4160.000	600.200	4235.000	0.000	0.000	0.000	0.000
X1	6.634	0.000	0.000	0.000	200.000	200.000	200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	3820.000	0.000	0.000	0.000	0.000
X1	6.641	95.000	115.000	404.000	37.000	37.000	37.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	115.000	0.000	3759.000	0.000	0.000	0.000	0.000
GR	606.900	0.000	606.800	3.900	606.700	7.900	606.600	11.800	606.600	15.800
GR	606.500	19.800	606.400	23.700	606.400	27.700	606.300	31.700	606.200	35.600
GR	606.100	39.600	606.100	43.600	606.000	47.500	605.900	51.500	605.800	55.500
GR	605.700	59.400	605.600	63.400	605.500	67.400	605.400	71.300	605.300	75.300
GR	605.200	79.300	605.100	83.200	605.000	87.200	604.900	91.200	604.800	95.100
GR	604.700	99.100	604.600	103.100	604.500	107.000	604.400	111.000	604.300	115.000
GR	600.200	119.600	591.400	129.600	584.400	139.600	580.500	149.600	577.500	159.600
GR	575.200	169.600	574.500	179.500	574.100	189.500	574.400	199.500	574.900	209.500
GR	575.100	219.500	575.100	229.500	575.400	239.500	575.800	249.500	589.000	259.400
GR	579.000	269.400	578.600	279.400	579.000	289.400	578.900	299.400	578.500	309.400
GR	578.400	319.400	578.900	329.400	579.400	339.400	580.200	349.300	581.200	359.300
GR	582.700	369.300	589.200	376.700	584.900	379.300	587.100	389.300	595.100	399.300
GR	597.200	404.000	597.400	423.000	595.700	522.900	594.700	641.900	593.500	760.800
GR	594.000	879.800	593.800	998.700	592.900	1117.700	585.900	1208.000	583.700	1236.600
GR	584.900	1258.000	590.700	1355.600	590.700	1474.500	590.700	1593.500	591.000	1712.500
GR	591.200	1831.400	591.300	1950.400	591.100	2069.300	591.400	2188.300	593.700	2307.200
GR	595.000	2426.200	596.500	2545.100	596.400	2664.100	593.900	2783.000	592.500	2902.000
GR	592.200	3021.000	591.800	3139.900	591.800	3258.900	591.400	3377.800	592.000	3496.800
GR	588.100	3528.000	584.000	3560.000	584.000	3725.000	600.000	3853.600	599.800	3972.600
X1	6.644	95.000	107.500	401.000	18.500	18.500	18.500	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	3730.000	0.000	0.000	0.000	0.000
GR	606.600	0.000	606.500	3.700	606.400	7.400	606.300	11.100	606.300	14.800
GR	606.200	18.500	606.100	22.200	606.100	25.900	606.000	29.600	605.900	33.300
GR	605.800	37.000	605.700	40.700	605.700	44.400	605.600	48.100	605.500	51.800
GR	605.400	55.600	605.300	59.300	605.200	63.000	605.100	66.700	605.000	70.400
GR	604.900	74.100	604.800	77.800	604.700	81.500	604.600	85.200	604.600	88.900
GR	604.500	92.600	604.400	96.300	604.300	100.000	604.200	103.700	604.100	107.500
GR	599.100	112.300	589.900	122.400	583.700	132.500	579.700	142.700	577.400	152.800
GR	575.400	163.000	574.700	173.100	574.500	183.200	574.200	193.400	574.800	203.500
GR	574.900	213.600	575.000	223.800	575.400	233.900	576.100	244.100	595.800	254.200
GR	580.600	264.300	578.500	274.500	578.400	284.600	578.300	294.800	578.100	304.900
GR	578.100	315.000	578.700	325.200	579.600	335.300	581.000	345.400	582.400	355.600
GR	584.000	365.700	585.800	375.900	587.800	386.000	596.900	396.100	600.700	401.000
GR	600.600	408.000	598.500	515.600	597.200	630.300	596.200	745.000	596.500	859.700
GR	596.300	974.400	595.900	1089.000	585.600	1183.000	583.300	1203.700	595.200	1223.000
GR	594.400	1318.400	593.800	1433.100	593.600	1547.800	593.800	1662.400	594.200	1777.100
GR	594.300	1891.800	594.200	2006.500	594.500	2121.200	595.500	2235.900	596.300	2350.500
GR	597.500	2465.200	597.700	2579.900	596.600	2694.600	595.900	2809.300	595.900	2923.900
GR	595.600	3038.600	595.500	3153.300	595.200	3268.000	595.800	3382.700	597.500	3497.300
GR	597.000	3499.000	582.600	3545.000	582.600	3700.000	587.800	3743.000	599.500	3841.400
NC	.120	.050	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.647	95.000	100.000	398.000	18.500	18.500	18.500	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	3710.300	0.000	0.000	0.000	0.000
GR	606.400	0.000	604.000	100.000	602.600	100.000	597.000	103.000	582.200	125.000
GR	580.400	130.000	579.000	140.000	576.200	150.000	575.100	160.000	575.100	170.000
GR	574.200	180.000	574.600	190.000	575.000	220.000	576.100	238.500	583.700	238.500
GR	583.700	246.000	602.700	246.000	602.700	252.000	583.700	252.000	583.700	259.500
GR	582.000	259.500	578.400	270.000	577.700	290.000	577.700	310.000	579.200	330.000
GR	582.300	344.000	582.200	345.000	591.300	397.000	602.800	398.000	604.200	398.000
GR	603.100	398.000	600.000	600.000	599.100	700.000	598.900	1163.000	599.000	1163.000
GR	596.900	1163.000	596.900	1168.000	582.900	1169.000	582.900	1171.500	580.100	1171.500
GR	580.100	1194.500	582.800	1194.500	582.800	1197.000	597.200	1198.000	597.200	1203.000
GR	599.200	1203.000	596.800	1400.000	596.600	1500.000	596.700	1600.000	597.300	1700.000

GR	597.400	1900.000	597.600	2000.000	597.600	2100.000	597.400	2200.000	597.800	2300.000
GR	598.700	2400.000	599.200	2500.000	599.400	2700.000	599.800	2800.000	599.100	3100.000
GR	599.100	3200.000	600.600	3400.000	601.500	3485.700	599.000	3485.700	599.000	3488.000
GR	594.700	3489.000	592.100	3500.000	588.600	3510.000	585.600	3520.000	584.300	3530.000
GR	581.400	3539.500	599.100	3539.500	599.100	3542.500	581.400	3542.500	581.100	3560.000
GR	583.300	3570.000	583.300	3580.000	582.100	3590.000	582.200	3596.500	599.200	3596.500
GR	599.200	3599.500	582.300	3599.500	581.800	3610.000	582.300	3630.000	582.300	3640.000
GR	583.500	3653.500	599.300	3653.500	599.300	3656.500	583.400	3656.500	583.300	3660.000
GR	588.100	3675.000	591.800	3698.000	594.600	3707.000	599.400	3708.000	599.400	3710.300
NC	.035	.035	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.648	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	3710.300	0.000	0.000	0.000	0.000
BT	46.000	0.000	606.400	0.000	100.000	604.000	602.600	246.000	604.100	602.700
BT	252.000	604.100	602.700	398.000	604.200	602.800	398.000	603.100	0.000	600.000
BT	600.000	0.000	700.000	599.100	0.000	1163.000	598.900	0.000	1163.000	599.000
BT	0.000	1163.000	600.300	596.900	1168.000	600.300	596.900	1198.000	600.600	597.200
BT	1203.000	600.600	597.200	1203.000	599.200	0.000	1400.000	596.800	0.000	1500.000
BT	596.600	0.000	1600.000	596.700	0.000	1700.000	597.300	0.000	1900.000	597.400
BT	0.000	2000.000	597.600	0.000	2100.000	597.600	0.000	2200.000	597.400	0.000
BT	2300.000	597.800	0.000	2400.000	598.700	0.000	2500.000	599.200	0.000	2700.000
BT	599.400	0.000	2800.000	599.800	0.000	3100.000	599.100	0.000	3200.000	599.100
BT	0.000	3400.000	600.600	0.000	3485.700	601.500	0.000	3485.700	602.300	599.000
BT	3488.000	602.300	599.000	3539.500	602.400	599.100	3542.500	602.400	599.100	3596.500
BT	602.300	599.200	3599.500	602.300	599.200	3653.500	602.200	599.300	3656.500	602.200
BT	599.300	3708.000	602.100	599.400	3710.300	602.100	599.400	3710.300	601.400	0.000
BT	3800.000	600.800	0.000	3900.000	599.900	0.000	4000.000	599.800	0.000	0.000
X1	6.652	0.000	0.000	0.000	21.000	21.000	21.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	3710.300	0.000	0.000	0.000	0.000
NC	.120	.050	.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.653	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	100.000	0.000	3710.300	0.000	0.000	0.000	0.000
NC	.120	.120	.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	6.655	95.000	107.500	401.000	12.200	12.200	12.200	0.000	0.000	0.000
X3	0.000	0.000	0.000	110.000	0.000	3737.000	0.000	0.000	0.000	0.000
GR	606.600	0.000	606.500	3.700	606.400	7.400	606.300	11.100	606.300	14.800
GR	606.200	18.500	606.100	22.200	606.100	25.900	606.000	29.600	605.900	33.300
GR	605.800	37.000	605.700	40.700	605.700	44.400	605.600	48.100	605.500	51.800
GR	605.400	55.600	605.300	59.300	605.200	63.000	605.100	66.700	605.000	70.400
GR	604.900	74.100	604.800	77.800	604.700	81.500	604.600	85.200	604.600	88.900
GR	604.500	92.600	604.400	96.300	604.300	100.000	604.200	103.700	604.100	107.500
GR	599.100	112.300	589.900	122.400	583.700	132.500	579.700	142.700	577.400	152.800
GR	575.400	163.000	574.700	173.100	574.500	183.200	574.400	193.400	574.800	203.500
GR	574.900	213.600	575.000	223.800	575.400	233.900	576.100	244.100	595.800	254.200
GR	580.600	264.300	578.500	274.500	578.400	284.600	578.300	294.800	578.100	304.900
GR	578.100	315.000	578.700	325.200	579.600	335.300	581.000	345.400	582.400	355.600
GR	584.000	365.700	585.800	375.900	587.800	386.000	596.900	396.100	600.700	401.000
GR	600.400	416.000	598.500	515.600	597.200	630.300	596.200	745.000	596.500	859.700
GR	596.300	974.400	595.900	1089.000	586.100	1178.000	583.300	1203.700	586.100	1233.000
GR	594.400	1318.400	593.800	1433.100	593.600	1547.800	593.800	1662.400	594.200	1777.100
GR	594.300	1891.800	594.200	2006.500	594.500	2121.200	595.500	2235.900	596.300	2350.500
GR	597.500	2465.200	597.700	2579.900	596.600	2694.600	595.900	2809.300	595.900	2923.900
GR	595.600	3038.600	595.500	3153.300	595.200	3268.000	595.800	3382.700	597.500	3497.300
GR	597.000	3499.000	582.600	3545.000	582.600	3700.000	587.800	3743.000	599.500	3841.400
X1	6.657	95.000	115.000	404.000	12.200	12.200	12.200	0.000	0.000	0.000
X3	0.000	0.000	0.000	115.000	0.000	3768.000	0.000	0.000	0.000	0.000
GR	606.900	0.000	606.800	3.900	606.700	7.900	606.600	11.800	606.600	15.800
GR	606.500	19.800	606.400	23.700	606.400	27.700	606.300	31.700	606.200	35.600
GR	606.100	39.600	606.100	43.600	606.000	47.500	605.900	51.500	605.800	55.500
GR	605.700	59.400	605.600	63.400	605.500	67.400	605.400	71.300	605.300	75.300
GR	605.200	79.300	605 100	83 200	605 000	87 200	604 900	91 200	60 800	95 100

GR	604.700	99.100	604.600	103.100	604.500	107.000	604.400	111.000	604.300	115.000
GR	600.200	119.600	591.400	129.600	584.400	139.600	580.500	149.600	577.500	159.600
GR	575.200	169.600	574.500	179.500	574.300	189.500	574.400	199.500	574.900	209.500
GR	575.100	219.500	575.100	229.500	575.400	239.500	575.800	249.500	589.000	259.400
GR	579.000	269.400	578.600	279.400	579.000	289.400	578.900	299.400	578.500	309.400
GR	578.400	319.400	578.900	329.400	579.400	339.400	580.200	349.300	581.200	359.300
GR	582.700	369.300	584.900	379.300	587.100	389.300	595.100	399.300	597.200	404.000
GR	596.800	438.000	595.700	522.900	594.700	641.900	593.500	760.800	594.000	879.800
GR	593.800	998.700	592.900	1117.700	586.900	1195.000	583.700	1236.600	586.000	1275.000
GR	590.700	1355.600	590.700	1474.500	590.700	1593.500	591.000	1712.500	591.200	1831.400
GR	591.300	1950.400	591.100	2069.300	591.400	2188.300	593.700	2307.200	595.000	2426.200
GR	596.500	2545.100	596.400	2664.100	593.900	2783.000	592.500	2902.000	592.200	3021.000
GR	591.800	3139.900	591.800	3258.900	591.400	3377.800	592.000	3496.800	589.600	3516.000
GR	584.000	3560.000	584.000	3725.000	591.500	3785.000	600.000	3853.600	599.800	3972.600
X1	6.661	73.000	121.000	419.000	24.500	24.500	24.500	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	3820.000	0.000	0.000	0.000	0.000
GR	607.400	0.000	606.600	60.000	604.600	121.000	582.800	160.000	580.300	170.000
GR	575.100	180.000	574.300	190.000	574.200	200.000	574.200	210.000	575.000	220.000
GR	575.600	230.000	575.300	240.000	575.500	250.000	575.600	260.000	575.400	270.000
GR	576.100	280.000	579.300	290.000	580.400	300.000	580.200	310.000	578.900	320.000
GR	579.100	330.000	579.300	340.000	578.400	350.000	578.200	360.000	578.800	370.000
GR	581.800	380.000	582.800	385.000	588.300	410.000	590.300	419.000	592.700	460.000
GR	591.500	496.000	589.300	560.000	589.800	660.000	588.000	760.000	587.900	860.000
GR	589.700	960.000	588.500	1060.000	587.300	1160.000	587.200	1166.000	585.100	1260.000
GR	584.600	1294.000	583.700	1360.000	583.200	1460.000	584.700	1560.000	584.700	1660.000
GR	585.600	1760.000	585.200	1860.000	585.100	1960.000	585.400	2060.000	584.900	2160.000
GR	584.900	2260.000	585.600	2360.000	590.500	2460.000	591.900	2560.000	594.700	2660.000
GR	594.400	2760.000	593.500	2860.000	588.500	2960.000	585.500	3060.000	585.700	3160.000
GR	584.000	3260.000	584.200	3360.000	584.500	3460.000	584.300	3485.000	583.800	3560.000
GR	584.000	3660.000	584.700	3760.000	586.700	3802.000	589.400	3860.000	595.200	3960.000
GR	600.800	4060.000	600.900	4160.000	600.200	4235.000	0.000	0.000	0.000	0.000
NH	5.000	.150	480.000	.040	640.000	.100	680.000	.030	900.000	.080
NH	3800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	7.121	65.000	480.000	900.000	2450.000	1200.000	2450.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	3550.000	0.000	0.000	0.000	0.000
GR	608.700	0.000	609.200	55.000	605.800	100.000	601.200	200.000	592.100	300.000
GR	588.200	400.000	587.100	480.000	581.900	490.000	578.000	500.000	576.000	510.000
GR	575.100	520.000	575.400	530.000	575.500	540.000	576.100	550.000	574.700	560.000
GR	575.000	570.000	574.300	580.000	574.000	590.000	572.000	600.000	571.400	610.000
GR	573.400	620.000	578.900	630.000	581.900	635.000	591.900	640.000	590.100	680.000
GR	581.900	685.000	575.600	700.000	574.700	710.000	571.500	720.000	572.700	730.000
GR	573.000	740.000	578.300	750.000	578.300	760.000	579.100	770.000	579.000	780.000
GR	578.900	790.000	578.000	800.000	577.900	810.000	578.000	820.000	581.900	835.000
GR	593.300	900.000	590.900	1000.000	590.100	1100.000	589.100	1200.000	587.100	1300.000
GR	586.700	1400.000	587.400	1500.000	588.200	1600.000	588.200	1700.000	588.400	1800.000
GR	588.500	1900.000	587.600	2000.000	588.600	2100.000	588.300	2200.000	588.200	2300.000
GR	587.900	2400.000	587.600	2500.000	587.600	2600.000	588.800	2700.000	591.200	2800.000
GR	589.200	3000.000	590.300	3200.000	588.100	3400.000	587.700	3600.000	587.500	3800.000
NH	4.000	.150	400.000	.060	1890.000	.035	2128.000	.060	2700.000	0.000
X1	7.689	49.000	1890.000	2128.000	2200.000	2050.000	3000.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	606.300	0.000	606.800	100.000	606.000	200.000	603.600	300.000	592.800	400.000
GR	586.300	500.000	585.100	600.000	585.500	700.000	583.500	800.000	583.100	900.000
GR	584.700	1000.000	585.700	1100.000	586.600	1200.000	587.700	1300.000	586.900	1400.000
GR	588.400	1500.000	588.900	1600.000	591.100	1700.000	592.200	1800.000	590.700	1890.000
GR	582.000	1910.000	580.300	1920.000	577.400	1930.000	576.000	1940.000	576.100	1950.000
GR	576.300	1960.000	576.300	1970.000	576.300	1980.000	576.500	1990.000	576.700	2000.000
GR	576.600	2010.000	576.600	2020.000	576.700	2030.000	576.800	2040.000	577.100	2050.000
GR	577.200	2060.000	577.400	2070.000	577.600	2080.000	577.600	2090.000	579.200	2100.000
GR	580.100	2110.000	582.000	2118.000	591.900	2128.000	588.500	2200.000	588.500	2300.000
GR	591.100	2400.000	590.400	2500.000	589.200	2600.000	587.600	2700.000	0.000	0.000
NH	4.000	.150	500.000	.120	1710.000	.030	2000.000	.150	2495.000	0.000

X1	8.144	54.000	1710.000	2000.000	2400.000	2400.000	2400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	2050.000	0.000	0.000	0.000	0.000
GR	606.600	0.000	601.900	60.000	603.000	100.000	603.100	200.000	598.300	300.000
GR	596.400	400.000	591.200	500.000	585.900	600.000	586.600	700.000	587.200	800.000
GR	586.400	900.000	587.100	1000.000	588.700	1100.000	589.700	1200.000	590.300	1300.000
GR	591.100	1400.000	590.000	1500.000	592.200	1600.000	588.400	1700.000	589.300	1710.000
GR	582.500	1730.000	579.800	1740.000	580.100	1750.000	580.000	1760.000	580.000	1770.000
GR	580.100	1780.000	580.100	1790.000	580.000	1800.000	579.900	1810.000	579.900	1820.000
GR	579.800	1830.000	579.600	1840.000	579.300	1850.000	579.600	1860.000	579.500	1870.000
GR	579.400	1880.000	579.600	1890.000	579.600	1900.000	579.600	1910.000	579.600	1920.000
GR	579.600	1930.000	579.600	1940.000	579.300	1950.000	579.400	1960.000	579.600	1970.000
GR	581.000	1980.000	582.500	1985.000	590.500	2000.000	595.400	2050.000	592.100	2100.000
GR	592.700	2200.000	596.100	2300.000	604.900	2400.000	607.100	2495.000	0.000	0.000
NH	5.000	.120	1600.000	.060	2200.000	.120	2482.000	.030	2704.000	.100
NH	2750.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	8.883	49.000	2482.000	2704.000	3900.000	3900.000	3900.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	2750.000	0.000	0.000	0.000	0.000
GR	607.000	0.000	605.900	40.000	602.300	100.000	600.700	200.000	603.400	300.000
GR	597.100	400.000	592.300	500.000	590.100	600.000	587.200	700.000	587.500	800.000
GR	588.000	900.000	588.800	1000.000	588.700	1100.000	588.600	1200.000	588.400	1300.000
GR	588.800	1400.000	588.500	1500.000	589.000	1600.000	589.700	1700.000	590.700	1800.000
GR	590.000	1900.000	589.300	2000.000	590.100	2100.000	592.700	2200.000	592.700	2300.000
GR	593.500	2340.000	590.500	2355.000	590.000	2400.000	589.900	2482.000	582.600	2497.000
GR	579.100	2510.000	576.800	2520.000	576.600	2530.000	576.800	2540.000	575.300	2550.000
GR	572.700	2560.000	574.100	2570.000	573.700	2580.000	572.900	2590.000	571.700	2600.000
GR	571.900	2610.000	572.000	2620.000	572.800	2630.000	574.200	2640.000	578.200	2650.000
GR	582.600	2660.000	599.900	2704.000	605.600	2705.000	609.300	2750.000	0.000	0.000
NC	.060	.120	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9.328	48.000	917.000	1155.000	1700.000	2100.000	2350.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	350.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	609.000	0.000	606.400	57.000	603.500	100.000	602.200	182.000	601.900	200.000
GR	599.700	300.000	594.200	400.000	590.800	500.000	590.100	600.000	591.000	700.000
GR	591.900	800.000	593.200	900.000	593.200	917.000	582.700	930.000	579.800	940.000
GR	576.500	950.000	575.500	960.000	573.400	970.000	572.300	980.000	571.400	990.000
GR	571.000	1000.000	572.900	1010.000	575.400	1020.000	576.100	1030.000	577.200	1040.000
GR	579.300	1050.000	580.400	1060.000	581.500	1070.000	582.700	1085.000	583.100	1100.000
GR	587.700	1145.000	593.500	1155.000	593.400	1200.000	593.300	1300.000	592.300	1400.000
GR	591.600	1500.000	590.900	1600.000	592.600	1700.000	588.300	1800.000	588.500	1900.000
GR	591.000	2000.000	588.100	2100.000	585.900	2200.000	588.900	2300.000	589.000	2400.000
GR	593.000	2470.000	607.300	2510.000	612.700	2620.000	0.000	0.000	0.000	0.000
NH	5.000	.120	1800.000	.060	3200.000	.120	3370.000	.030	3630.000	.150
NH	3735.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10.161	66.000	3370.000	3630.000	3600.000	4000.000	4400.000	0.000	0.000	0.000
GR	606.800	0.000	606.000	100.000	603.100	200.000	597.800	245.000	587.100	280.000
GR	586.300	300.000	586.600	400.000	586.800	500.000	593.000	600.000	591.900	700.000
GR	592.000	800.000	591.600	900.000	592.800	1000.000	593.600	1100.000	593.800	1200.000
GR	594.100	1300.000	593.500	1375.000	587.800	1400.000	586.600	1500.000	587.600	1600.000
GR	588.000	1700.000	591.400	1720.000	591.400	1800.000	591.400	1900.000	591.500	2000.000
GR	590.800	2100.000	590.800	2200.000	590.400	2300.000	591.200	2400.000	589.700	2500.000
GR	591.000	2600.000	592.100	2700.000	592.100	2800.000	592.800	2900.000	593.600	3000.000
GR	593.900	3100.000	595.400	3200.000	592.000	3300.000	592.700	3370.000	582.700	3380.000
GR	579.800	3390.000	579.700	3400.000	579.900	3410.000	580.000	3420.000	579.900	3430.000
GR	579.800	3440.000	580.100	3450.000	580.100	3460.000	579.900	3470.000	579.900	3480.000
GR	579.700	3490.000	579.600	3500.000	579.100	3510.000	579.100	3520.000	579.200	3530.000
GR	579.300	3540.000	579.300	3550.000	579.000	3560.000	578.800	3570.000	578.400	3580.000
GR	579.300	3590.000	582.700	3600.000	596.600	3630.000	606.600	3680.000	607.900	3700.000
GR	609.200	3735.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.150	400.000	.060	1700.000	.100	1772.000	.030	2080.000	.100
NH	3200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	10.606	62.000	1785.000	2080.000	1650.000	2130.000	2350.000	0.000	0.000	0.000
GR	616.200	0.000	615.500	37.000	610.500	58.000	610.400	100.000	608.800	200.000
GR	603.000	300.000	592.700	400.000	591.700	500.000	592.300	600.000	593.300	700.000

GR	593.300	800.000	593.000	900.000	594.100	1000.000	594.300	1100.000	595.400	1200.000
GR	595.300	1300.000	594.400	1400.000	594.400	1500.000	594.500	1600.000	595.800	1700.000
GR	593.500	1772.000	583.600	1785.000	581.900	1790.000	580.600	1800.000	579.400	1810.000
GR	579.300	1820.000	579.300	1830.000	579.400	1840.000	579.000	1850.000	579.500	1860.000
GR	580.500	1870.000	580.800	1880.000	580.800	1890.000	580.900	1900.000	580.400	1910.000
GR	580.200	1920.000	580.200	1930.000	580.300	1940.000	580.000	1950.000	580.100	1960.000
GR	580.600	1970.000	580.200	1980.000	580.700	1990.000	580.300	2000.000	580.300	2010.000
GR	581.200	2020.000	581.900	2030.000	583.000	2043.000	591.500	2080.000	591.000	2100.000
GR	589.600	2200.000	589.600	2300.000	590.300	2400.000	589.800	2500.000	589.300	2600.000
GR	590.100	2700.000	590.000	2800.000	589.100	2900.000	591.500	3000.000	609.600	3065.000
GR	610.500	3100.000	611.600	3200.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	.150	200.000	.090	397.000	.030	688.000	.120	800.000	.060
NH	1200.000	.120	2000.000	.060	3388.000	0.000	0.000	0.000	0.000	0.000
X1	10.994	63.000	397.000	688.000	1700.000	2100.000	2050.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	2050.000	0.000	0.000	0.000	0.000
GR	616.700	0.000	617.400	38.000	612.600	58.000	612.700	100.000	603.900	200.000
GR	598.000	300.000	595.500	397.000	583.800	407.000	580.500	410.000	579.300	420.000
GR	578.500	430.000	578.500	440.000	578.300	450.000	578.500	460.000	578.600	470.000
GR	578.900	480.000	579.000	490.000	579.300	500.000	579.700	510.000	579.300	520.000
GR	579.300	530.000	579.300	540.000	579.400	550.000	579.500	560.000	579.800	570.000
GR	579.700	580.000	579.600	590.000	580.100	600.000	580.300	610.000	580.500	620.000
GR	580.600	630.000	581.500	640.000	583.200	648.000	592.900	688.000	592.200	700.000
GR	594.900	800.000	594.600	900.000	593.300	1000.000	592.700	1100.000	591.600	1200.000
GR	592.800	1300.000	592.300	1400.000	590.000	1500.000	588.200	1600.000	588.300	1700.000
GR	588.200	1800.000	588.200	1900.000	588.500	1943.000	588.600	2000.000	587.600	2100.000
GR	593.600	2200.000	597.600	2300.000	602.500	2400.000	603.200	2500.000	604.700	2600.000
GR	606.500	2700.000	607.700	2800.000	609.500	2900.000	612.100	3000.000	613.500	3100.000
GR	611.600	3200.000	610.400	3300.000	612.500	3388.000	0.000	0.000	0.000	0.000
NH	5.000	.060	141.000	.030	400.000	.060	600.000	.100	2000.000	.050
NH	2650.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11.297	54.000	141.000	400.000	1600.000	1600.000	1600.000	.954	0.000	0.000
GR	615.800	0.000	615.100	43.000	609.500	81.000	589.300	141.000	580.600	150.000
GR	580.400	160.000	580.300	170.000	580.200	180.000	580.200	190.000	579.900	200.000
GR	578.900	210.000	579.600	220.000	580.200	230.000	580.400	240.000	580.900	250.000
GR	581.100	260.000	581.200	270.000	580.800	280.000	580.700	290.000	581.000	300.000
GR	581.400	310.000	581.700	320.000	581.900	330.000	581.800	340.000	582.000	350.000
GR	582.200	360.000	583.300	373.000	595.900	400.000	595.900	420.000	595.000	450.000
GR	595.000	500.000	596.900	600.000	594.800	700.000	594.200	800.000	594.900	900.000
GR	594.200	1000.000	593.800	1100.000	592.900	1200.000	591.100	1300.000	590.400	1400.000
GR	590.300	1500.000	590.900	1600.000	590.000	1700.000	592.500	1800.000	599.300	1835.000
GR	600.200	1900.000	601.500	2000.000	602.500	2100.000	603.300	2200.000	604.300	2300.000
GR	606.200	2400.000	608.300	2500.000	610.300	2600.000	611.700	2650.000	0.000	0.000
NC	.030	.030	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11.324	92.000	113.000	600.000	149.000	149.000	149.000	.899	0.000	0.000
GR	615.900	0.000	615.200	100.000	614.500	112.000	608.300	113.000	608.100	117.000
GR	583.000	178.400	609.300	178.400	609.300	181.600	583.000	181.600	580.300	190.000
GR	580.200	200.000	579.600	210.000	579.800	220.000	580.400	230.000	580.300	240.000
GR	580.600	249.400	608.000	249.400	608.000	252.600	580.600	252.600	580.400	260.000
GR	581.000	270.000	581.100	280.000	581.200	290.000	580.900	300.000	580.800	310.000
GR	580.800	311.400	606.800	311.400	606.800	314.600	580.900	314.600	581.000	320.000
GR	581.100	330.000	581.300	340.000	580.900	350.000	581.000	360.000	580.800	370.000
GR	581.000	380.000	581.600	390.000	581.200	391.400	605.500	391.400	605.500	394.600
GR	581.300	394.600	581.400	400.000	581.300	410.000	580.900	420.000	580.900	430.000
GR	581.000	440.000	580.600	450.000	580.500	460.000	580.300	462.400	604.300	462.400
GR	604.300	465.600	579.400	465.600	579.500	470.000	581.500	480.000	581.700	490.000
GR	581.800	500.000	581.600	510.000	581.800	520.000	582.000	530.000	582.200	532.400
GR	603.200	532.400	603.200	535.600	582.500	535.600	582.900	540.000	583.500	550.000
GR	584.100	560.000	584.700	565.000	599.100	596.000	599.100	600.000	605.400	601.000
GR	604.100	700.000	603.100	800.000	602.300	900.000	600.900	1000.000	601.500	1100.000
GR	601.500	1200.000	601.300	1300.000	601.300	1400.000	601.000	1500.000	601.300	1600.000
GR	601.600	1700.000	601.700	1800.000	601.900	1900.000	601.700	2000.000	601.700	2100.000
GR	601.900	2200.000	603.100	2300.000	604.400	2400.000	606.200	2500.000	608.300	2600.000
GR	610.200	2700.000	611.700	2760.000	0.000	0.000	0.000	0.000	0.000	0.000

SB	1.150	1.500	2.500	0.000	400.000	18.000	10352.000	1.800	579.400	579.400
X1	11.333	0.000	0.000	0.000	38.000	38.000	38.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	606.000	600.800	0.000	0.000	0.000	.899	0.000
BT	34.000	0.000	615.900	0.000	100.000	615.200	0.000	112.000	614.500	0.000
BT	113.000	614.500	608.300	113.000	615.400	610.600	178.400	614.100	609.300	181.600
BT	614.100	609.300	249.400	612.800	608.000	252.600	612.800	608.000	311.400	611.600
BT	606.800	314.600	611.600	606.800	391.400	610.300	605.500	394.600	610.300	605.500
BT	462.400	609.100	604.300	465.600	609.100	604.300	532.400	608.000	603.200	535.600
BT	608.000	603.200	600.000	606.800	602.000	600.000	605.400	599.100	601.000	605.400
BT	0.000	700.000	604.100	0.000	800.000	603.100	0.000	900.000	602.300	0.000
BT	1000.000	600.900	0.000	1100.000	601.500	0.000	1200.000	601.500	0.000	1300.000
BT	601.300	0.000	1400.000	601.300	0.000	1500.000	601.000	0.000	1600.000	601.300
BT	0.000	1700.000	601.600	0.000	1800.000	601.700	0.000	1900.000	601.900	0.000
BT	2000.000	601.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.060	.090	.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11.341	54.000	141.000	628.000	49.000	49.000	49.000	.954	0.000	0.000
GR	615.800	0.000	615.100	43.000	609.500	81.000	589.300	141.000	580.600	150.000
GR	580.400	160.000	580.300	170.000	580.200	180.000	580.200	190.000	579.900	200.000
GR	579.400	210.000	579.600	220.000	580.200	230.000	580.400	240.000	580.900	250.000
GR	581.100	260.000	581.200	270.000	580.800	280.000	580.700	290.000	581.000	300.000
GR	581.400	310.000	581.700	320.000	581.900	330.000	581.800	340.000	582.000	350.000
GR	582.200	360.000	583.300	373.000	583.000	400.000	583.000	420.000	582.600	450.000
GR	583.400	500.000	596.900	628.000	594.800	700.000	594.200	800.000	594.900	900.000
GR	594.200	1000.000	593.800	1100.000	592.900	1200.000	591.100	1300.000	590.400	1400.000
GR	590.300	1500.000	590.900	1600.000	590.000	1700.000	592.500	1800.000	599.300	1835.000
GR	600.200	1900.000	601.500	2000.000	602.500	2100.000	603.300	2200.000	604.300	2300.000
GR	606.200	2400.000	608.300	2500.000	610.300	2600.000	611.700	2650.000	0.000	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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 2 VERSION UPDATED JAN 1976
ROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      SAGINAW TOWNSHIP
T2      100-YEAR FLOOD
T3      TITTABAWASSEE RIVER JRA FILE NO. 5555-60 THOMAS BAIER PROJECT MANAGER

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      -1.       4.        0.        0.  0.000000      0.00       0.0       0.    593.860   0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    3.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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CCHV=     .300 CEHV=     .500
3280 CROSS SECTION      2.63 EXTENDED      2.46 FEET

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

3470 ENCROACHMENT STATIONS=     900.0     3475.0  TYPE=     1  TARGET=     2575.000

                    MANUFACTURED CROSS SECTION-FIELD SECTIONS C AND D

                    AVERAGED BY IN-HOUSE COMPUTER PROGRAM

     2.63     24.46    593.86     0.00    593.86    594.50      .64     0.00     0.00    588.50
   48800.     4805.    43797.     198.     5662.     6466.     828.       0.       0.    591.80
     0.00       .85     6.77      .24      .080      .030      .150    0.000   569.40    900.00
  .000379      25.      25.      25.         0         0         1     0.00  2575.00   3475.00

1490 NH CARD USED

3265 DIVIDED FLOW

3280 CROSS SECTION      2.63 EXTENDED      .84 FEET

3470 ENCROACHMENT STATIONS=     780.8     3294.0  TYPE=     1  TARGET=     2575.000

          E         CENTER ROAD BRIDGE - DOWNSTREAM FACE, BRIDGE

                    SKEWED BY A FACTOR OF 0.976

     2.63     24.34    593.74     0.00     0.00    594.65      .91      .01      .14    592.70
   48800.     1013.    47581.     206.     998.     6132.     223.       6.       1.    592.70
     .00      1.02      7.76      .92      .040      .031      .035     .029   569.40    780.80
  .000607      25.      25.      25.         2         0         1     0.00  1757.91   3294.00

SPECIAL BRIDGE

SB   XK       XKOR     COFQ     RDLEN    BWC      BWP      BAREA    SS       ELCHU    ELCHD
     1.25     1.50     2.50     0.00     320.00   16.00    5952.00  0.00     569.40   569.40

3265 DIVIDED FLOW

3280 CROSS SECTION      2.64 EXTENDED      .95 FEET

PRESSURE AND WEIR FLOW

  EGPRS    EGLWC    H3       QWEIR    QPR      BAREA    ELLC     ELTRD    CLASS
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595.30 594.76 .12 10917. 38236. 5952. 592.70 592.80 30.00

3470 ENCROACHMENT STATIONS= 780.8 3294.0 TYPE= 1 TARGET= 2513.200

E CENTER ROAD BRIDGE - UPSTREAM FACE, BRIDGE

SKEWED BY A FACTOR OF 0.976; HWM 590.84.

MARCH, 1976. DISCHARGE = 20,900 CFS

2.64	24.44	593.84	0.00	0.00	594.70	.85	.05	0.00	592.70
48800.	1166.	47485.	149.	1184.	6318.	175.	12.	3.	592.70
.00	.98	7.52	.85	.040	.030	.035	.029	569.40	780.80
.000541	38.	38.	38.	2	0	2	0.00	1767.13	3294.00

1490 NH CARD USED

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS= 850.0 3375.0 TYPE= 1 TARGET= 2525.000

MANUFACTURED SECTION-SECTION DETERMINED BY AVERAGING

FIELD SECTION D AND SECTION 2.645 BY IN-HOUSE COMPUTER

PROGRAM

2.64	24.71	594.11	0.00	0.00	594.76	.65	.00	.06	591.30
48800.	1363.	46274.	1163.	3382.	6970.	1830.	15.	3.	592.10
.00	.40	6.64	.64	.117	.030	.090	.029	569.40	850.00
.000320	12.	12.	12.	2	0	1	0.00	2488.65	3375.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 825.0 3350.0 TYPE= 1 TARGET= 2525.000

MANUFACTURED SECTION-SECTION DETERMINED BY AVERAGING

FIELD SECTIONS D AND E BY IN-HOUSE COMPUTER PROGRAM

2.65	24.91	594.31	0.00	0.00	594.81	.50	.00	.05	589.90
48800.	1699.	43829.	3271.	6009.	7337.	3428.	19.	4.	591.50
.00	.28	5.97	.95	.214	.030	.080	.029	569.40	825.00
.000259	12.	12.	12.	2	0	1	0.00	2525.00	3350.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 800.0 3325.0 TYPE= 1 TARGET= 2525.000

Saginaw Twp landfill
Valley sections do not show the effects of the new flow. Quad shows elevation increase of 6.00

REPEAT OF FIELD SECTION E WITH INVERT ADJUSTED

2.65	25.23	594.63	0.00	0.00	594.89	.26	.00	.07	587.20
48800.	3520.	37575.	7705.	11035.	8075.	6534.	31.	5.	590.40
.01	.32	4.65	1.18	.228	.030	.080	.029	569.40	800.00
.000158	25.	25.	25.	2	0	1	0.00	2525.00	3325.00

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1200.0 3600.0 TYPE= 1 TARGET= 2400.000

F 1900FT. U.S. FROM CENTER ROAD BRIDGE

2.99	20.73	595.13	0.00	0.00	595.30	.17	.38	.03	587.20
48800.	3975.	29224.	15601.	4327.	7051.	10571.	1015.	90.	590.40
.18	.92	4.14	1.48	.101	.040	.088	.029	574.40	1200.00
.000266	1200.	1850.	2300.	2	0	1	0.00	1846.85	3600.00

3280 CROSS SECTION 3.46 EXTENDED 3.77 FEET

REPEAT OF FIELD SECTION F WITH INVERT ADJUSTED

3.46	23.17	595.77	0.00	0.00	595.91	.14	.60	.01	584.40
48800.	2467.	28570.	17763.	3415.	7462.	20359.	2542.	217.	590.40
.45	.72	3.83	.87	.130	.040	.130	.035	572.60	1.24
.000218	2500.	2500.	2500.	2	0	1	0.00	2598.76	2600.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 360.0 1880.0 TYPE= 1 TARGET= 1520.000

G 100FT. D.S. FROM PENN CENTRAL RAILROAD BRIDGE

3.69	24.20	596.00	0.00	0.00	596.44	.45	.38	.15	584.40
48800.	468.	43162.	5170.	445.	7581.	11579.	3271.	276.	590.40
.52	1.05	5.69	.45	.150	.040	.350	.036	571.80	360.00
.000456	1250.	1250.	1250.	2	0	1	0.00	1520.00	1880.00

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 420.0 1840.0 TYPE= 1 TARGET= 1420.000

H PENN CENTRAL RAILROAD BRIDGE - DOWNSTREAM FACE

3.71	24.17	595.97	0.00	0.00	596.59	.62	.06	.09	599.94
48800.	0.	44577.	4223.	0.	6792.	1671.	3303.	279.	599.54
.52	0.00	6.56	2.53	.150	.040	.070	.036	571.80	420.00
.000869	99.	99.	99.	2	0	1	0.00	562.86	1839.86

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	B IP	BARE	SS	ELCHU	ELCHD

0.00	1.50	3.00	0.00	1420.00	0.00	7589.00	0.00	571.80	571.80

3265 DIVIDED FLOW

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

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
596.94	596.59	0.00	0.	48800.	7589.	594.20	598.40	10.00

3470 ENCROACHMENT STATIONS= 420.0 1840.0 TYPE= 1 TARGET= 1420.000

H PENN CENTRAL RAILROAD BRIDGE-UPSTREAM FACE

3.72	24.55	596.35	0.00	0.00	596.94	.59	.34	0.00	599.94
48800.	0.	44536.	4264.	0.	6952.	1722.	3308.	279.	599.54
.52	0.00	6.41	2.48	.150	.040	.070	.036	571.80	420.00
.000810	24.	24.	24.	2	0	1	0.00	562.88	1839.88

1490 NH CARD USED
3280 CROSS SECTION 3.73 EXTENDED .40 FEET

3470 ENCROACHMENT STATIONS= 360.0 1880.0 TYPE= 1 TARGET= 1520.000

REPEAT OF FIELD SECTION F

3.73	24.90	596.70	0.00	0.00	597.04	.34	.03	.08	584.40
48800.	547.	42271.	5982.	299.	8430.	12224.	3324.	280.	590.40
.52	1.83	5.01	.49	.080	.041	.295	.036	571.80	360.00
.000356	49.	49.	49.	2	0	1	0.00	1520.00	1880.00

1490 NH CARD USED
3280 CROSS SECTION 3.88 EXTENDED 2.14 FEET

3470 ENCROACHMENT STATIONS= 800.0 2700.0 TYPE= 1 TARGET= 1900.000

MANUFACTURED SECTION-SIMILAR TO FIELD SECTION F

3.88	25.45	597.15	0.00	0.00	597.28	.12	.18	.06	585.00
48800.	3029.	28874.	16897.	3643.	8118.	15072.	3716.	308.	585.00
.61	.83	3.56	1.12	.120	.040	.092	.037	571.70	800.00
.000161	800.	800.	650.	1	0	1	0.00	1900.00	2700.00

3280 CROSS SECTION 4.45 EXTENDED 3.28 FEET

3470 ENCROACHMENT STATIONS= 1560.0 4000.0 TYPE= 1 TARGET= 2440.000

I 3900FT. U.S. FROM PENN CENTRAL RAILROAD BRIDGE

4.45	26.48	597.68	0.00	0.00	597.81	.14	.53	.01	586.90
48800.	25660.	22699.	442.	26165.	5408.	949.	5658.	449.	591.80
.94	.98	4.20	.47	.120	.040	.150	.038	571.20	1560.00
.000205	2600.	3050.	3150.	2	0	1	0.00	2440.00	4000.00

3470 ENCROACHMENT STATIONS= 1330.0 4000.0 TYPE= 1 TARGET= 2670.000

REPEAT OF FIELD SECTION H WITH INVERT ADJUSTED

4.75	25.86	597.96	0.00	0.00	598.06	.10	.23	.01	587.60
48800.	24979.	21196.	2625.	28165.	5599.	4101.	6608.	517.	585.00
1.11	.89	3.79	.64	.120	.040	.150	.040	572.10	1330.00
.000157	1050.	1600.	1600.	1	0	1	0.00	2670.00	4000.00

3280 CROSS SECTION 5.04 EXTENDED 1.25 FEET

3470 ENCROACHMENT STATIONS= 300.0 2040.0 TYPE= 1 TARGET= 1740.000

J 50FT. D.S. FROM GRATIOT ROAD BRIDGE

5.04	25.25	598.15	0.00	0.00	598.52	.36	.33	.13	592.20
48800.	8568.	38117.	2115.	9329.	7014.	1618.	7419.	578.	584.70
1.19	.92	5.43	1.31	.130	.040	.150	.040	572.90	406.74
.000401	1150.	1500.	1500.	2	0	1	0.00	1633.26	2040.00

High

3265 DIVIDED FLOW

3280 CROSS SECTION 5.05 EXTENDED 1.55 FEET

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

3470 ENCROACHMENT STATIONS= 414.0 2078.0 TYPE= 1 TARGET= 1664.000

5.05	25.35	598.25	0.00	0.00	598.56	.31	.02	.02	602.30
48800.	6978.	41822.	0.	3215.	8879.	0.	7436.	579.	603.30
1.20	2.17	4.71	0.00	.080	.040	.150	.040	572.90	414.00
.000585	49.	49.	49.	2	0	1	0.00	668.70	2029.00

3265 DIVIDED FLOW

3280 CROSS SECTION 5.05 EXTENDED 1.55 FEET

NORMAL BRIDGE,NRD=31 MIN ELTRD= 596.70 MAX ELLC= 604.20

3470 ENCROACHMENT STATIONS= 414.0 2078.0 TYPE= 1 TARGET= 1664.000

K GRATIOT ROAD BRIDGE - DOWNSTREAM FACE

```
    5.05     25.35    598.25      0.00      0.00    598.56       .31       .00       .00    602.30
  48800.     6978.    41822.        0.     3216.     8879.        0.     7436.      579.    603.30
    1.20      2.17      4.71      0.00      .080      .040      .150      .040    572.90    414.00
 .000585        1.        1.        1.         0         0         1      0.00    668.70   2029.00

3265 DIVIDED FLOW

3280 CROSS SECTION       5.06 EXTENDED       1.59 FEET

NORMAL BRIDGE,NRD=31 MIN ELTRD=  596.70 MAX ELLC=  604.20

3470 ENCROACHMENT STATIONS=     414.0     2078.0  TYPE=     1  TARGET=     1664.000

              K        GRATIOT ROAD BRIDGE-UPSTREAM FACE: HWM 592.85,MARCH,

                       1976, LESS THAN A 10-YR FLOOD, DISCHARGE = 20,900 CFS

    5.06     25.39    598.29      0.00      0.00    598.59       .30       .04       .00    602.30
  48800.     6984.    41816.        0.     3224.     8896.        0.     7454.      580.    603.30
    1.20      2.17      4.70      0.00      .080      .040      .150      .040    572.90    414.00
 .000582       64.       64.       64.         0         0         1      0.00    668.70   2029.00

3265 DIVIDED FLOW

3280 CROSS SECTION       5.06 EXTENDED       1.59 FEET

3470 ENCROACHMENT STATIONS=     414.0     2078.0  TYPE=     1  TARGET=     1664.000
    5.06     25.39    598.29      0.00      0.00    598.59       .30       .00       .00    602.30
  48800.     6984.    41816.        0.     3224.     8897.        0.     7454.      580.    603.30
    1.20      2.17      4.70      0.00      .080      .040      .150      .040    572.90    414.00
 .000582        1.        1.        1.         0         0         1      0.00    668.70   2029.00

3280 CROSS SECTION       5.07 EXTENDED       1.46 FEET

3470 ENCROACHMENT STATIONS=     270.0     2040.0  TYPE=     1  TARGET=     1770.000

                       REPEAT OF FIELD SECTION I WITH INVERT ADJUSTED

    5.07     25.46    598.36      0.00      0.00    598.63       .27       .02       .01    592.20
  48800.     9085.    39715.        0.    12441.     8689.        0.     7473.      582. 100000.00
    1.21       .73      4.57      0.00      .200      .045      .150      .040    572.90    401.64
 .000392       49.       49.       49.         2         0         1      0.00   1638.36   2040.00

1490 NH CARD USED
3280 CROSS SECTION       5.32 EXTENDED       2.55 FEET

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOP ID      ENDST
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3470 ENCROACHMENT STATIONS=      450.0     2750.0  TYPE=      1  TARGET=     2300.000

                L        1450FT. U.S. FROM GRATIOT ROAD BRIDGE

     5.32     29.85    598.95      0.00      0.00    599.06       .11       .38       .05    589.30
   48800.     4489.    19220.    25090.     4325.     4787.    21096.     8278.      643.    593.30
     1.37      1.04      4.02      1.19      .100      .045      .100      .041    569.10    450.00
  .000206     1300.     1400.     1400.         2         0         1      0.00   2300.00   2750.00

1490 NH CARD USED
3280 CROSS SECTION      6.06 EXTENDED      6.93 FEET


3470 ENCROACHMENT STATIONS=      300.0     2695.0  TYPE=      1  TARGET=     -300.000

                M        3100FT. D.S. FROM STATE ROAD BRIDGE

     6.06     23.43    599.73      0.00      0.00    599.85       .12       .79       .00    592.00
   48800.    13283.    25807.     9710.    13852.     7093.    10926.    10910.      841.    586.10
     1.82       .96      3.64       .89      .120      .045      .130      .042    576.30    300.00
  .000214     3900.     3900.     3500.         2         0         1      0.00   2395.00   2695.00

3280 CROSS SECTION      6.60 EXTENDED       .06 FEET


3470 ENCROACHMENT STATIONS=         .0     3880.0  TYPE=      1  TARGET=     3879.999

                        REPEAT OF FIELD SECTION M

     6.60     26.36    600.26      0.00      0.00    600.30       .04       .43       .02    604.60
   48800.        0.    14646.    34154.        0.     5688.    45490.    13633.     1042.    590.30
     2.42      0.00      2.58       .75      .120      .045      .120      .042    573.90    136.02
  .000112     2500.     2825.     2950.         2         0         1      0.00   3743.98   3880.00

3280 CROSS SECTION      6.63 EXTENDED       .09 FEET


3470 ENCROACHMENT STATIONS=         .0     3820.0  TYPE=      1  TARGET=     3819.999

                N        75FT. D.S. FROM STATE ROAD BRIDGE

     6.63     26.38    600.28      0.00      0.00    600.32       .04       .02       .00    604.60
   48800.        0.    14759.    34041.        0.     5695.    44935.    13866.     1059.    590.30
     2.47      0.00      2.59       .76      .120      .045      .120      .042    573.90    135.98
  .000113      200.      200.      200.         1         0         1      0.00   3684.02   3820.00

3280 CROSS SECTION      6.64 EXTENDED       .45 FEET


3470 ENCROACHMENT STATIONS=      115.0     3759.0  TYPE=      1  TARGET=     3644.000

                        MANUFACTURED SECTION-FIELD SECTIONS M AND N AVERAGED

                        BY IN-HOUSE COMPUTER PROGR M
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```
   6.64    26.15   600.25     0.00     0.00   600.37      .12      .01      .04   604.30
 48800.       0.   22490.   26310.       0.    5641.   27737.   13902.    1063.    597.20
   2.47     0.00     3.99      .95     .120     .045     .120     .042   574.10   119.54
.000306      37.      37.      37.        2        0        1     0.00  3639.45  3759.00
```

3265 DIVIDED FLOW

3280 CROSS SECTION 6.64 EXTENDED .69 FEET

3470 ENCROACHMENT STATIONS= 110.0 3730.0 TYPE= 1 TARGET= 3620.000

MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.641

AVERAGED BY IN-HOUSE COMPUTER PROGRAM

```
   6.64    25.99   600.19     0.00     0.00   600.45      .26      .01     .07100000.00
 48800.       0.   29187.   19613.       0.    5629.   18226.   13914.    1064.    600.70
   2.47     0.00     5.18     1.08     .120     .045     .120     .042   574.20   111.25
.000543      19.      19.      19.        2        0        1     0.00  3590.02  3730.00
```

3265 DIVIDED FLOW

3280 CROSS SECTION 6.65 EXTENDED .78 FEET

```
SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST
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3470 ENCROACHMENT STATIONS= 100.0 3710.3 TYPE= 1 TARGET= 3610.300

```
   6.65    25.98   600.18     0.00     0.00   600.48      .30      .01      .02   604.00
 48800.       0.   30637.   18163.       0.    5761.    8370.   13922.    1066.    603.10
   2.47     0.00     5.32     2.17     .120     .040     .050     .042   574.20   101.30
.000489      19.      19.      19.        2        0        1     0.00  3269.87  3710.30
```

3265 DIVIDED FLOW

3280 CROSS SECTION 6.65 EXTENDED .78 FEET

NORMAL BRIDGE,NRD=46 MIN ELTRD= 596.60 MAX ELLC= 602.80

3470 ENCROACHMENT STATIONS= 100.0 3710.3 TYPE= 1 TARGET= 3610.300

0 STATE ROAD BRIDGE - DOWNSTREAM FACE

```
   6.65    25.97   600.17     0.00     0.00   600.48      .30      .00      .00   604.00
 48800.       0.   30622.   18178.       0.    5761.    8030.   13923.    1066.    603.10
   2.47     0.00     5.32     2.26     .035     .040     .035     .042   574.20   101.30
.000489       1.       1.       1.        0        0        1  -341.27  3269.98  3710.30
```

```
3265 DIVIDED FLOW

3280 CROSS SECTION       6.65 EXTENDED        .79 FEET

NORMAL BRIDGE,NRD=46 MIN ELTRD=  596.60 MAX ELLC=  602.80

3470 ENCROACHMENT STATIONS=     100.0    3710.3  TYPE=     1  TARGET=    3610.300

                 O        STATE ROAD BRIDGE-UPSTREAM FACE; HWM 594.5,MARCH,

                          1976, LESS THAN A 10-YR FLOOD, DISCHARGE = 20,900 CFS

      6.65     25.99   600.19     0.00     0.00   600.49      .30      .01      .00   604.00
    48800.        0.   30593.   18207.       0.    5764.    8058.   13929.    1067.   603.10
      2.47     0.00     5.31     2.26     .035     .040     .035     .042   574.20   101.29
   .000487       21.      21.      21.        0        0        1  -343.96  3272.02  3710.30

3265 DIVIDED FLOW

3280 CROSS SECTION       6.65 EXTENDED        .79 FEET

3470 ENCROACHMENT STATIONS=     100.0    3710.3  TYPE=     1  TARGET=    3610.300
      6.65     25.99   600.19     0.00     0.00   600.49      .30      .00      .00   604.00
    48800.        0.   30609.   18191.       0.    5764.    8403.   13930.    1067.   603.10
      2.47     0.00     5.31     2.16     .120     .040     .050     .042   574.20   101.29
   .000488        1.       1.       1.        0        0        1     0.00  3272.12  3710.30

3265 DIVIDED FLOW

3280 CROSS SECTION       6.66 EXTENDED        .79 FEET

3470 ENCROACHMENT STATIONS=     110.0    3737.0  TYPE=     1  TARGET=    3627.000

                          MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.657

                          AVERAGED BY IN-HOUSE COMPUTER PROGRAM

      6.66     25.89   600.29     0.00     0.00   600.52      .23      .01      .02100000.00
    48800.        0.   28195.   20605.       0.    5656.   19233.   13935.    1068.   600.70
      2.47     0.00     4.98     1.07     .120     .045     .120     .042   574.40   111.16
   .000499       12.      12.      12.        2        0        1     0.00  3604.46  3737.00

3280 CROSS SECTION       6.66 EXTENDED        .64 FEET

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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3470 ENCROACHMENT STATIONS=      115.0     3768.0  TYPE=      1  TARGET=     3653.000
                        MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.661

                        AVERAGED BY IN-HOUSE COMPUTER PROGRAM

     6.66     26.14   600.44      0.00      0.00   600.56      .12       .00       .03   604.30
   48800.        0.   22392.    26408.        0.    5718.   28504.    13943.     1069.   597.20
     2.48      0.00     3.92       .93      .120     .045     .120      .042    574.30   119.33
  .000284       12.      12.       12.         2        0        1      0.00   3648.67  3768.00

3280 CROSS SECTION       6.66 EXTENDED        .35 FEET

3470 ENCROACHMENT STATIONS=          .0     3820.0  TYPE=      1  TARGET=     3819.999
                        REPEAT OF FIELD SECTION M WITH INVERT ADJUSTED

     6.66     26.35   600.55      0.00      0.00   600.59      .04       .00       .02   604.60
   48800.        0.   14832.    33968.        0.    5956.   45804.    13968.     1071.   590.30
     2.48      0.00     2.49       .74      .120     .045     .120      .042    574.20   128.24
  .000105       25.      25.       25.         2        0        1      0.00   3691.75  3820.00

1490 NH CARD USED
3280 CROSS SECTION       7.12 EXTENDED      13.18 FEET

3470 ENCROACHMENT STATIONS=      400.0     3550.0  TYPE=      1  TARGET=     3150.000
                P        2500FT. U.S. FROM STATE ROAD BRIDGE

     7.12     29.28   600.68      0.00      0.00   600.74      .06       .14       .01   587.10
   48800.       461.   23484.    24856.     1042.    8763.   31627.    15477.     1177.   593.30
     2.76       .44     2.68       .79      .150     .035     .080      .044    571.40   400.00
  .000065     2450.    2450.     1200.         2        0        1      0.00   3150.00  3550.00

1490 NH CARD USED
3280 CROSS SECTION       7.69 EXTENDED      13.25 FEET

3470 ENCROACHMENT STATIONS=      400.0     2700.0  TYPE=      1  TARGET=     -400.000
                Q        5500FT. U.S. FROM STATE ROAD BRIDGE

     7.69     24.85   600.85      0.00      0.00   600.91      .06       .17       .00   590.70
   48800.    25975.   15712.     7113.    20438.    5300.    6468.    17400.     1315.   591.90
     3.14      1.27     2.96      1.10      .060     .035     .060      .045    576.00   400.00
  .000077     2200.    3000.     2050.         2        0        1      0.00   2300.00  2700.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=      300.0     2050.0  TYPE=      1  TARGET=     1750.000
                R        7900FT. U.S. FROM STATE ROAD BRIDGE

     8.14     21.71   601.01      0.00      0.00   601.34      .33       .30       .1    589.30
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   48800.   15443.   33116.     242.   15929.    5923.     403.   18901.    1427.    590.50
     3.31      .97     5.59      .60     .121     .030     .150     .045   579.30   300.00
  .000228    2400.    2400.    2400.        1        0        1     0.00  1750.00  2050.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     400.0    2750.0  TYPE=     1  TARGET=    2350.000

                S       11800FT. U.S. FROM STATE ROAD BRIDGE

     8.88    30.18   601.88     0.00     0.00   602.06      .18      .67      .04   589.90
   48800.   24583.   24217.       0.   25233.    5051.       0.   21253.    1608.    599.90
     3.68      .97     4.79      .05     .094     .030     .100     .045   571.70   400.00
  .000134    3900.    3900.    3900.        2        0        1     0.00  2304.35  2704.35

3470 ENCROACHMENT STATIONS=     350.0    2620.0  TYPE=     1  TARGET=    -350.000

                T       14150FT. U.S. FROM STATE ROAD BRIDGE

     9.33    31.17   602.17     0.00     0.00   602.39      .22      .31      .02   593.20
   48800.    8958.   26619.   13222.    5818.    5316.   15637.   22515.    1704.    593.50
     3.86     1.54     5.01      .85     .060     .030     .120     .044   571.00   350.00
  .000170    1700.    2350.    2100.        2        0        1     0.00  2145.65  2495.65

1490 NH CARD USED
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

                U       6000FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

    10.16    24.41   602.81     0.00     0.00   602.89      .08      .45      .04   592.70
   48800.   29345.   19438.      18.   36258.    5637.      96.   25529.    1947.    596.60
     4.46      .81     3.45      .19     .085     .030     .150     .043   578.40   202.48
  .000079    3600.    4400.    4000.        2        0        1     0.00  3458.55  3661.04

1490 NH CARD USED

                V       3650FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

    10.61    23.96   602.96     0.00     0.00   603.09      .13      .18      .02   583.60
   48800.   13904.   24868.   10028.   13125.    6401.   12233.   27091.    2074.    591.50
     4.69     1.06     3.88      .82     .061     .030     .100     .043   579.00   300.35
  .000101    1650.    2350.    2130.        2        0        1     0.00  2740.82  3041.17

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     400.0    2050.0  TYPE=     1  TARGET=    1650.000

                W       1600FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

    10.99    24.85   603.15     0.00     0.00   603.40      .25      .25     .06100000.00
   48800.       0.   31632.   17168.       0.    6393.   16400.   28338.    2173.    592.90
     4.85     0.00     4.95     1.05     .061     .030     .096     .042   578.30   400.00
  .000158    1700.    2050.    2100.        1        0        1     0.00  1650.00  2050.00
```

1490 NH CARD USED

X 150 FT. DOWNSTREAM FROM TITTABAWASSEE ROAD

BRIDGE, SECTION SKEWED BY A FACTOR OF 0.954

11.30	24.51	603.41	0.00	0.00	603.77	.36	.31	.06	589.30
48800.	384.	31595.	16821.	282.	5307.	14663.	29129.	2240.	595.90
4.95	1.36	5.95	1.15	.060	.030	.094	.042	578.90	94.54
.000242	1600.	1600.	1600.	2	0	1	0.00	2014.38	2108.92

3265 DIVIDED FLOW

Y TITTABAWASSEE ROAD BRIDGE - DOWNSTREAM FACE,

BRIDGE SKEWED BY A FACTOR 0.899

11.32	24.02	603.42	0.00	0.00	603.85	.44	.05	.04	608.30
48800.	0.	44949.	3851.	0.	8158.	2410.	29182.	2247.	599.10
4.96	0.00	5.51	1.60	.030	.030	.030	.042	579.40	115.46
.000453	149.	149.	149.	1	0	1	0.00	1810.67	2090.31

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.15	1.50	2.50	0.00	400.00	18.00	10352.00	1.80	579.40	579.40

6840,FLOW IS BY WEIR AND LOW FLOW
6870 D.S. ENERGY OF 603.85 HIGHER THAN COMPUTED ENERGY OF 603.72

3265 DIVIDED FLOW

BRIDGE W.S.= 603.45 BRIDGE VELOCITY= 4.19

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
606.00	603.72	.03	6143.	42872.	10352.	606.00	600.80	15.00

Y TITTABAWASSEE ROAD BRIDGE - UPSTREAM FACE,

BRIDGE SKEWED BY A FACTOR OF 0.899;

HWM 597.54, MARCH, 1976, DISCHARGE = 20,900 CFS

11.33	24.02	603.42	0.00	0.00	603.85	.44	0.00	0.00	608.30
48800.	0.	44979.	3821.	0.	8154.	2396.	29191.	2248.	599.10
4.96	0.00	5.52	1.59	.030	.030	.030	.042	579.40	115.48
.000455	38.	38.	38.	2	0	4	0.00	1809.02	2089.60

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

REPEAT OF FIELD SECTION W WITH INVERT

ADJUSTED, SECTION ADJUSTED FOR SKEW BY

A FACTOR OF 0.954

11.34	24.35	603.75	0.00	0.00	603.94	.19	.01	.08	589.30
48800.	291.	36550.	11959.	296.	9201.	13509.	29210.	2251.	596.90
4.97	.98	3.97	.89	.060	.030	.090	.042	579.40	93.56
.000122	49.	49.	49.	2	0	1	0.00	2048.58	2142.13

```
CCHV=     .300 CEHV=     .500
3280 CROSS SECTION      2.63 EXTENDED      2.46 FEET

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

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3470 ENCROACHMENT STATIONS=     900.0     3475.0  TYPE=     1  TARGET=     2575.000

                    MANUFACTURED CROSS SECTION-FIELD SECTIONS C AND D

                    AVERAGED BY IN-HOUSE COMPUTER PROGRAM

     2.63     24.46    593.86      0.00    593.86    594.50       .64      0.00      0.00    588.50
   48800.     4805.    43797.      198.     5662.     6466.      828.        0.        0.    591.80
     0.00       .85      6.77       .24      .080      .030      .150     0.000    569.40    900.00
  .000379       25.       25.       25.         0         0         1      0.00   2575.00   3475.00

1490 NH CARD USED

3265 DIVIDED FLOW

3280 CROSS SECTION      2.63 EXTENDED       .84 FEET

3470 ENCROACHMENT STATIONS=     780.8     3294.0  TYPE=     1  TARGET=     2575.000

                E   CENTER ROAD BRIDGE - DOWNSTREAM FACE, BRIDGE

                    SKEWED BY A FACTOR OF 0.976

     2.63     24.34    593.74      0.00      0.00    594.65       .91       .01       .14    592.70
   48800.     1013.    47581.      206.      998.     6132.      223.        6.        1.    592.70
     .00       1.02      7.76       .92      .040      .031      .035      .029    569.40    780.80
  .000607       25.       25.       25.         2         0         1      0.00   1757.91   3294.00

SPECIAL BRIDGE

SB   XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.50      2.50      0.00      320.00    16.00     5952.00   0.00      569.40    569.40

3265 DIVIDED FLOW

3280 CROSS SECTION      2.64 EXTENDED       .95 FEET

PRESSURE AND WEIR FLOW

  EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     ELLC      ELTRD     CLASS
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595.30    594.76      .12    10917.    38236.    5952.    592.70    592.80    30.00

3470 ENCROACHMENT STATIONS=     780.8    3294.0  TYPE=     1  TARGET=    2513.200

                E       CENTER ROAD BRIDGE - UPSTREAM FACE, BRIDGE

                        SKEWED BY A FACTOR OF 0.976; HWM 590.84,

                        MARCH, 1976, DISCHARGE = 20,900 CFS

     2.64    24.44   593.84     0.00     0.00   594.70      .85      .05     0.00   592.70
    48800.    1166.   47485.     149.    1184.    6318.     175.      12.       3.   592.70
      .00      .98     7.52      .85     .040     .030     .035     .029   569.40   780.80
  .000541      38.      38.      38.        2        0        2     0.00  1767.13  3294.00

1490 NH CARD USED

3265 DIVIDED FLOW

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

3470 ENCROACHMENT STATIONS=     850.0    3375.0  TYPE=     1  TARGET=    2525.000

                        MANUFACTURED SECTION-SECTION DETERMINED BY AVERAGING

                        FIELD SECTION D AND SECTION 2.645 BY IN-HOUSE COMPUTER

                        PROGRAM

     2.64    24.71   594.11     0.00     0.00   594.76      .65      .00      .06   591.30
    48800.    1363.   46274.    1163.    3382.    6970.    1830.      15.       3.   592.10
      .00      .40     6.64      .64     .117     .030     .090     .029   569.40   850.00
  .000320      12.      12.      12.        2        0        1     0.00  2488.65  3375.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     825.0    3350.0  TYPE=     1  TARGET=    2525.000

                        MANUFACTURED SECTION-SECTION DETERMINED BY AVERAGING

                        FIELD SECTIONS D AND E BY IN-HOUSE COMPUTER PROGRAM

     2.65    24.91   594.31     0.00     0.00   594.81      .50      .00      .05   589.90
    48800.    1699.   43829.    3271.    6009.    7337.    3428.      19.       4.   591.50
      .00      .28     5.97      .95     .214     .030     .080     .029   569.40   825.00
  .000259      12.      12.      12.        2        0        1     0.00  2525.00  3350.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     800.0    3325.0  TYPE=     1  TARGET=    2525.000
```

REPEAT OF FIELD SECTION E WITH INVERT ADJUSTED

2.65	25.23	594.63	0.00	0.00	594.89	.26	.00	.07	587.20
48800.	3520.	37575.	7705.	11035.	8075.	6534.	31.	5.	590.40
.01	.32	4.65	1.18	.228	.030	.080	.029	569.40	800.00
.000158	25.	25.	25.	2	0	1	0.00	2525.00	3325.00

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1200.0 3600.0 TYPE= 1 TARGET= 2400.000

F 1900FT. U.S. FROM CENTER ROAD BRIDGE

2.99	20.73	595.13	0.00	0.00	595.30	.17	.38	.03	587.20
48800.	3975.	29224.	15601.	4327.	7051.	10571.	1015.	90.	590.40
.18	.92	4.14	1.48	.101	.040	.088	.029	574.40	1200.00
.000266	1200.	1850.	2300.	2	0	1	0.00	1846.85	3600.00

3280 CROSS SECTION 3.46 EXTENDED 3.77 FEET

REPEAT OF FIELD SECTION F WITH INVERT ADJUSTED

3.46	23.17	595.77	0.00	0.00	595.91	.14	.60	.01	584.40
48800.	2467.	28570.	17763.	3415.	7462.	20359.	2542.	217.	590.40
.45	.72	3.83	.87	.130	.040	.130	.035	572.60	1.24
.000218	2500.	2500.	2500.	2	0	1	0.00	2598.76	2600.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 360.0 1880.0 TYPE= 1 TARGET= 1520.000

G 100FT. D.S. FROM PENN CENTRAL RAILROAD BRIDGE

3.69	24.20	596.00	0.00	0.00	596.44	.45	.38	.15	584.40
48800.	468.	43162.	5170.	445.	7581.	11579.	3271.	276.	590.40
.52	1.05	5.69	.45	.150	.040	.350	.036	571.80	360.00
.000456	1250.	1250.	1250.	2	0	1	0.00	1520.00	1880.00

1490 NH CARD USED

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 420.0 1840.0 TYPE= 1 TARGET= 1420.000

H PENN CENTRAL RAILROAD BRIDGE - DOWNSTREAM FACE

3.71	24.17	595.97	0.00	0.00	596.59	.62	.06	.09	599.94
48800.	0.	44577.	4223.	0.	6792.	1671.	3303.	279.	599.54
.52	0.00	6.56	2.53	.150	.040	.070	.036	571.80	420.00
.000869	99.	99.	99.	2	0	1	0.00	562.86	1839.86

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD

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   0.00      1.50      3.00      0.00   1420.00      0.00   7589.00      0.00    571.80    571.80

3265 DIVIDED FLOW

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

PRESSURE FLOW

  EGPRS     EGLWC       H3       QWEIR      QPR       BAREA     ELLC      ELTRD     CLASS

  596.94    596.59     0.00        0.    48800.     7589.    594.20    598.40     10.00

3470 ENCROACHMENT STATIONS=     420.0    1840.0  TYPE=     1  TARGET=    1420.000

              H       PENN CENTRAL RAILROAD BRIDGE-UPSTREAM FACE

     3.72    24.55   596.35     0.00     0.00   596.94      .59      .34     0.00   599.94
   48800.       0.   44536.    4264.       0.    6952.    1722.    3308.     279.    599.54
      .52     0.00     6.41     2.48     .150     .040     .070     .036   571.80   420.00
  .000810      24.      24.      24.        2        0        1     0.00   562.88  1839.88

1490 NH CARD USED
3280 CROSS SECTION      3.73 EXTENDED       .40 FEET

3470 ENCROACHMENT STATIONS=     360.0    1880.0  TYPE=     1  TARGET=    1520.000

                      REPEAT OF FIELD SECTION F

     3.73    24.90   596.70     0.00     0.00   597.04      .34      .03      .08   584.40
   48800.     547.   42271.    5982.     299.    8430.   12224.    3324.     280.    590.40
      .52     1.83     5.01      .49     .080     .041     .295     .036   571.80   360.00
  .000356      49.      49.      49.        2        0        1     0.00  1520.00  1880.00

1490 NH CARD USED
3280 CROSS SECTION      3.88 EXTENDED      2.14 FEET

3470 ENCROACHMENT STATIONS=     800.0    2700.0  TYPE=     1  TARGET=    1900.000

                      MANUFACTURED SECTION-SIMILAR TO FIELD SECTION F

     3.88    25.45   597.15     0.00     0.00   597.28      .12      .18      .06   585.00
   48800.    3029.   28874.   16897.    3643.    8118.   15072.    3716.     308.    585.00
      .61      .83     3.56     1.12     .120     .040     .092     .037   571.70   800.00
  .000161     800.     800.     650.        1        0        1     0.00  1900.00  2700.00

3280 CROSS SECTION      4.45 EXTENDED      3.28 FEET

3470 ENCROACHMENT STATIONS=    1560.0    4000.0  TYPE=     1  TARGET=    2440.000
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                I        3900FT. U.S. FROM PENN CENTRAL RAILROAD BRIDGE

      4.45     26.48    597.68      0.00      0.00    597.81       .14       .53       .01    586.90
    48800.    25660.    22699.      442.    26165.     5408.      949.     5658.      449.    591.80
       .94       .98      4.20       .47      .120      .040      .150      .038    571.20   1560.00
   .000205     2600.     3050.     3150.         2         0         1      0.00   2440.00   4000.00


 3470 ENCROACHMENT STATIONS=     1330.0     4000.0  TYPE=      1  TARGET=     2670.000

                        REPEAT OF FIELD SECTION H WITH INVERT ADJUSTED

      4.75     25.86    597.96      0.00      0.00    598.06       .10       .23       .01    587.60
    48800.    24979.    21196.     2625.    28165.     5599.     4101.     6608.      517.    585.00
      1.11       .89      3.79       .64      .120      .040      .150      .040    572.10   1330.00
   .000157     1050.     1600.     1600.         1         0         1      0.00   2670.00   4000.00


 3280 CROSS SECTION       5.04 EXTENDED       1.25 FEET


 3470 ENCROACHMENT STATIONS=      300.0     2040.0  TYPE=      1  TARGET=     1740.000

                J        50FT. D.S. FROM GRATIOT ROAD BRIDGE

      5.04     25.25    598.15      0.00      0.00    598.52       .36       .33       .13    592.20
    48800.     8568.    38117.     2115.     9329.     7014.     1618.     7419.      578.    584.70
      1.19       .92      5.43      1.31      .130      .040      .150      .040    572.90    406.74
   .000401     1150.     1500.     1500.         2         0         1      0.00   1633.26   2040.00


 3265 DIVIDED FLOW

 3280 CROSS SECTION       5.05 EXTENDED       1.55 FEET


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


 3470 ENCROACHMENT STATIONS=      414.0     2078.0  TYPE=      1  TARGET=     1664.000
      5.05     25.35    598.25      0.00      0.00    598.56       .31       .02       .02    602.30
    48800.     6978.    41822.        0.     3215.     8879.        0.     7436.      579.    603.30
      1.20      2.17      4.71      0.00      .080      .040      .150      .040    572.90    414.00
   .000585       49.       49.       49.         2         0         1      0.00   668.70   2029.00


 3265 DIVIDED FLOW

 3280 CROSS SECTION       5.05 EXTENDED       1.55 FEET


 NORMAL BRIDGE,NRD=31 MIN ELTRD=  596.70 MAX ELLC=  604.20


 3470 ENCROACHMENT STATIONS=      414.0     2078.0  TYPE=      1  TARGET=     1664.000

                K        GRATIOT ROAD BRIDGE - DOWNSTREAM FACE
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    5.05     25.35    598.25      0.00      0.00    598.56       .31       .00       .00    602.30
   48800.     6978.    41822.        0.     3216.     8879.        0.     7436.      579.    603.30
    1.20      2.17      4.71      0.00      .080      .040      .150      .040    572.90    414.00
 .000585        1.        1.        1.         0         0         1      0.00    668.70   2029.00
```

+.04

3265 DIVIDED FLOW

3280 CROSS SECTION 5.06 EXTENDED 1.59 FEET

NORMAL BRIDGE,NRD=31 MIN ELTRD= 596.70 MAX ELLC= 604.20

3470 ENCROACHMENT STATIONS= 414.0 2078.0 TYPE= 1 TARGET= 1664.000

K GRATIOT ROAD BRIDGE-UPSTREAM FACE; HWM 592.85,MARCH,

1976, LESS THAN A 10-YR FLOOD, DISCHARGE = 20,900 CFS

+.03

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    5.06     25.39    598.29      0.00      0.00    598.59       .30       .04       .00    602.30
   48800.     6984.    41816.        0.     3224.     8896.        0.     7454.      580.    603.30
    1.20      2.17      4.70      0.00      .080      .040      .150      .040    572.90    414.00
 .000582       64.       64.       64.         0         0         1      0.00    668.70   2029.00
```

3265 DIVIDED FLOW

3280 CROSS SECTION 5.06 EXTENDED 1.59 FEET

3470 ENCROACHMENT STATIONS= 414.0 2078.0 TYPE= 1 TARGET= 1664.000

+.03

```
    5.06     25.39    598.29      0.00      0.00    598.59       .30       .00       .00    602.30
   48800.     6984.    41816.        0.     3224.     8897.        0.     7454.      580.    603.30
    1.20      2.17      4.70      0.00      .080      .040      .150      .040    572.90    414.00
 .000582        1.        1.        1.         0         0         1      0.00    668.70   2029.00
```

3280 CROSS SECTION 5.07 EXTENDED 1.46 FEET

3470 ENCROACHMENT STATIONS= 270.0 2040.0 TYPE= 1 TARGET= 1770.000

REPEAT OF FIELD SECTION I WITH INVERT ADJUSTED

+.04

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    5.07     25.46    598.36      0.00      0.00    598.63       .27       .02       .01    592.20
   48800.     9085.    39715.        0.    12441.     8689.        0.     7473.      582. 100000.00
    1.21       .73      4.57      0.00      .200      .045      .150      .040    572.90    401.64
 .000392       49.       49.       49.         2         0         1      0.00   1638.36   2040.00
```

1490 NH CARD USED
3280 CROSS SECTION 5.32 EXTENDED 2.55 FEET

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SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        QLOSS     BANK ELEV
Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
SLOPE     XLOBL     XLCH      XLOBR     TTRIAL    IDC       ICONT     CORAR     TOP WD      ENDST
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3470 ENCROACHMENT STATIONS=      450.0     2750.0  TYPE=      1  TARGET=     2300.000

                L        1450FT. U.S. FROM GRATIOT ROAD BRIDGE

      5.32     29.85    598.95      0.00      0.00    599.06       .11       .38       .05    589.30
    48800.     4489.    19220.    25090.     4325.     4787.    21096.     8278.      643.    593.30
      1.37      1.04      4.02      1.19      .100      .045      .100      .041    569.10    450.00
   .000206     1300.     1400.     1400.         2         0         1      0.00   2300.00   2750.00

1490 NH CARD USED
3280 CROSS SECTION      6.06 EXTENDED      6.93 FEET


3470 ENCROACHMENT STATIONS=      300.0     2695.0  TYPE=      1  TARGET=     -300.000

                M        3100FT. D.S. FROM STATE ROAD BRIDGE

      6.06     23.43    599.73      0.00      0.00    599.85       .12       .79       .00    592.00
    48800.    13283.    25807.     9710.    13852.     7093.    10926.    10910.      841.    586.10
      1.82       .96      3.64       .89      .120      .045      .130      .042    576.30    300.00
   .000214     3900.     3900.     3500.         2         0         1      0.00   2395.00   2695.00

3280 CROSS SECTION      6.60 EXTENDED       .06 FEET


3470 ENCROACHMENT STATIONS=        .0     3880.0  TYPE=      1  TARGET=     3879.999

                         REPEAT OF FIELD SECTION M

      6.60     26.36    600.26      0.00      0.00    600.30       .04       .43       .02    604.60
    48800.        0.    14646.    34154.        0.     5688.    45490.    13633.     1042.    590.30
      2.42      0.00      2.58       .75      .120      .045      .120      .042    573.90    136.02
   .000112     2500.     2825.     2950.         2         0         1      0.00   3743.98   3880.00

3280 CROSS SECTION      6.63 EXTENDED       .09 FEET


3470 ENCROACHMENT STATIONS=        .0     3820.0  TYPE=      1  TARGET=     3819.999

                N        75FT. D.S. FROM STATE ROAD BRIDGE

      6.63     26.38    600.28      0.00      0.00    600.32       .04       .02       .00    604.60
    48800.        0.    14759.    34041.        0.     5695.    44935.    13866.     1059.    590.30
      2.47      0.00      2.59       .76      .120      .045      .120      .042    573.90    135.98
   .000113      200.      200.      200.         1         0         1      0.00   3684.02   3820.00

3280 CROSS SECTION      6.64 EXTENDED       .45 FEET


3470 ENCROACHMENT STATIONS=      115.0     3759.0  TYPE=      1  TARGET=     3644.000

                         MANUFACTURED SECTION-FIELD SECTIONS M AND N AVERAGED

                         BY IN-HOUSE COMPUTER PROGRAM
```

```
     6.64     26.15    600.25      0.00      0.00    600.37       .12       .01       .04    604.30
   48800.        0.    22490.    26310.        0.     5641.    27737.    13902.     1063.    597.20
     2.47      0.00      3.99       .95      .120      .045      .120      .042    574.10    119.54
  .000306       37.       37.       37.         2         0         1      0.00   3639.45   3759.00
```

+.02

3265 DIVIDED FLOW

3280 CROSS SECTION 6.64 EXTENDED .69 FEET

3470 ENCROACHMENT STATIONS= 110.0 3730.0 TYPE= 1 TARGET= 3620.000

MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.641

AVERAGED BY IN-HOUSE COMPUTER PROGRAM

+.02

```
     6.64     25.99    600.19      0.00      0.00    600.45       .26       .01      .07100000.00
   48800.        0.    29187.    19613.        0.     5629.    18226.    13914.     1064.    600.70
     2.47      0.00      5.18      1.08      .120      .045      .120      .042    574.20    111.25
  .000543       19.       19.       19.         2         0         1      0.00   3590.02   3730.00
```

3265 DIVIDED FLOW

3280 CROSS SECTION 6.65 EXTENDED .78 FEET

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

3470 ENCROACHMENT STATIONS= 100.0 3710.3 TYPE= 1 TARGET= 3610.300

```
     6.65     25.98    600.18      0.00      0.00    600.48       .30       .01       .02    604.00
   48800.        0.    30637.    18163.        0.     5761.     8370.    13922.     1066.    603.10
     2.47      0.00      5.32      2.17      .120      .040      .050      .042    574.20    101.30
  .000489       19.       19.       19.         2         0         1      0.00   3269.87   3710.30
```

+.04

3265 DIVIDED FLOW

3280 CROSS SECTION 6.65 EXTENDED .78 FEET

NORMAL BRIDGE,NRD=46 MIN ELTRD= 596.60 MAX ELLC= 602.80

3470 ENCROACHMENT STATIONS= 100.0 3710.3 TYPE= 1 TARGET= 3610.300

0 STATE ROAD BRIDGE - DOWNSTREAM FACE

```
     6.65     25.97    600.17      0.00      0.00    600.48       .30       .00       .00    604.00
   48800.        0.    30622.    18178.        0.     5761.     8030.    13923.     1066.    603.10
     2.47      0.00      5.32      2.26      .035      .040      .035      .042    574.20    101.30
  .000489        1.        1.        1.         0         0         1   -341.27   3269.98   3710.30
```

+.04

```
3265 DIVIDED FLOW

3280 CROSS SECTION       6.65 EXTENDED        .79 FEET

NORMAL BRIDGE,NRD=46 MIN ELTRD=  596.60 MAX ELLC=  602.80

3470 ENCROACHMENT STATIONS=      100.0     3710.3  TYPE=     1  TARGET=   3610.300

                 0        STATE ROAD BRIDGE-UPSTREAM FACE; HWM 594.5,MARCH,

                          1976, LESS THAN A 10-YR FLOOD, DISCHARGE = 20,900 CFS

      6.65     25.99   600.19     0.00     0.00   600.49      .30      .01      .00   604.00
    48800.        0.   30593.   18207.       0.    5764.    8058.   13929.    1067.   603.10
      2.47      0.00     5.31     2.26     .035     .040     .035     .042   574.20   101.29
   .000487       21.      21.      21.        0        0        1  -343.96  3272.02  3710.30

3265 DIVIDED FLOW

3280 CROSS SECTION       6.65 EXTENDED        .79 FEET

3470 ENCROACHMENT STATIONS=      100.0     3710.3  TYPE=     1  TARGET=   3610.300
      6.65     25.99   600.19     0.00     0.00   600.49      .30      .00      .00   604.00
    48800.        0.   30609.   18191.       0.    5764.    8403.   13930.    1067.   603.10
      2.47      0.00     5.31     2.16     .120     .040     .050     .042   574.20   101.29
   .000488        1.       1.       1.        0        0        1     0.00  3272.12  3710.30

3265 DIVIDED FLOW

3280 CROSS SECTION       6.66 EXTENDED        .79 FEET

3470 ENCROACHMENT STATIONS=      110.0     3737.0  TYPE=     1  TARGET=   3627.000

                          MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.657

                          AVERAGED BY IN-HOUSE COMPUTER PROGRAM

      6.66     25.89   600.29     0.00     0.00   600.52      .23      .01     .02100000.00
    48800.        0.   28195.   20605.       0.    5656.   19233.   13935.    1068.   600.70
      2.47      0.00     4.98     1.07     .120     .045     .120     .042   574.40   111.16
   .000499       12.      12.      12.        2        0        1     0.00  3604.46  3737.00

3280 CROSS SECTION       6.66 EXTENDED        .64 FEET

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

```
3470 ENCROACHMENT STATIONS=      115.0     3768.0  TYPE=      1  TARGET=     3653.000
                    MANUFACTURED SECTION-FIELD SECTION N AND SECTION 6.661

                    AVERAGED BY IN-HOUSE COMPUTER PROGRAM

      6.66     26.14    600.44      0.00      0.00    600.56       .12       .00       .03    604.30
    48800.        0.    22392.    26408.        0.     5718.    28504.    13943.     1069.    597.20
      2.48      0.00      3.92       .93      .120      .045      .120      .042    574.30    119.33
   .000284       12.       12.       12.         2         0         1      0.00   3648.67   3768.00

3280 CROSS SECTION       6.66 EXTENDED       .35 FEET

3470 ENCROACHMENT STATIONS=          .0     3820.0  TYPE=      1  TARGET=     3819.999
                    REPEAT OF FIELD SECTION M WITH INVERT ADJUSTED

      6.66     26.35    600.55      0.00      0.00    600.59       .04       .00       .02    604.60
    48800.        0.    14832.    33968.        0.     5956.    45804.    13968.     1071.    590.30
      2.48      0.00      2.49       .74      .120      .045      .120      .042    574.20    128.24
   .000105       25.       25.       25.         2         0         1      0.00   3691.75   3820.00

1490 NH CARD USED
3280 CROSS SECTION       7.12 EXTENDED      13.18 FEET

3470 ENCROACHMENT STATIONS=      400.0     3550.0  TYPE=      1  TARGET=     3150.000
                P   2500FT. U.S. FROM STATE ROAD BRIDGE

      7.12     29.28    600.68      0.00      0.00    600.74       .06       .14       .01    587.10
    48800.       461.    23484.    24856.     1042.     8763.    31627.    15477.     1177.    593.30
      2.76       .44      2.68       .79      .150      .035      .080      .044    571.40    400.00
   .000065     2450.     2450.     1200.         2         0         1      0.00   3150.00   3550.00

1490 NH CARD USED
3280 CROSS SECTION       7.69 EXTENDED      13.25 FEET

3470 ENCROACHMENT STATIONS=      400.0     2700.0  TYPE=      1  TARGET=     -400.000
                Q   5500FT. U.S. FROM STATE ROAD BRIDGE

      7.69     24.85    600.85      0.00      0.00    600.91       .06       .17       .00    590.70
    48800.     25975.    15712.     7113.    20438.     5300.     6468.    17400.     1315.    591.90
      3.14      1.27      2.96      1.10      .060      .035      .060      .045    576.00    400.00
   .000077     2200.     3000.     2050.         2         0         1      0.00   2300.00   2700.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS=      300.0     2050.0  TYPE=      1  TARGET=     1750.000
                R   7900FT. U.S. FROM STATE ROAD BRIDGE

      8.14     21.71    601.01      0.00      0.00    601.34       .33       .30       .14    589.30
```

```
 48800.   15443.   33116.     242.   15929.    5923.     403.   18901.    1427.    590.50
   3.31      .97    5.59     .60     .121     .030     .150     .045   579.30    300.00
 .000228   2400.   2400.   2400.        1        0        1     0.00  1750.00   2050.00
```

+.05

```
1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     400.0    2750.0  TYPE=     1  TARGET=    2350.000

              S       11800FT. U.S. FROM STATE ROAD BRIDGE

   8.88    30.18   601.88     0.00     0.00   602.06     .18     .67     .04   589.90
 48800.   24583.   24217.       0.   25233.    5051.      0.   21253.    1608.    599.90
   3.68      .97    4.79     .05     .094     .030     .100     .045   571.70    400.00
 .000134   3900.   3900.   3900.        2        0        1     0.00  2304.35   2704.35
```

+.07

```
3470 ENCROACHMENT STATIONS=     350.0    2620.0  TYPE=     1  TARGET=    -350.000

              T       14150FT. U.S. FROM STATE ROAD BRIDGE

   9.33    31.17   602.17     0.00     0.00   602.39     .22     .31     .02   593.20
 48800.    8958.   26619.  13222.    5818.    5316.  15637.   22515.    1704.   593.50
   3.86     1.54    5.01     .85     .060     .030     .120     .044   571.00    350.00
 .000170   1700.   2350.   2100.        2        0        1     0.00  2145.65   2495.65
```

+.06

```
1490 NH CARD USED
  SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL     OLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB      ACH      AROB     VOL     TWA    LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL       XNCH     XNR      WTN     ELMIN     SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL    IDC      ICONT    CORAR   TOPWID    ENDST

              U       6000FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

   10.16    24.41   602.81     0.00     0.00   602.89     .08     .45     .04   592.70
 48800.   29345.   19438.      18.   36258.    5637.     96.   25529.    1947.   596.60
   4.46      .81    3.45     .19     .085     .030     .150     .043   578.40    202.48
 .000079   3600.   4400.   4000.        2        0        1     0.00  3458.55   3661.04
```

+.06 4'

```
1490 NH CARD USED

              V       3650FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

   10.61    23.96   602.96     0.00     0.00   603.09     .13     .18     .02   583.60
 48800.   13904.   24868.  10028.   13125.    6401.  12233.   27091.    2074.   591.50
   4.69     1.06    3.88     .82     .061     .030     .100     .043   579.00    300.35
 .000101   1650.   2350.   2130.        2        0        1     0.00  2740.82   3041.17
```

+.06 5'

```
1490 NH CARD USED

3470 ENCROACHMENT STATIONS=     400.0    2050.0  TYPE=     1  TARGET=    1650.000

              W       1600FT. D.S. FROM TITTABAWASSEE ROAD BRIDGE

   10.99    24.85   603.15     0.00     0.00   603.40     .25     .25     .06100000.00
 48800.       0.   31632.  17168.       0.    6393.  16400.   28338.    2173.   592.90
    4.85     0.00    4.95    1.05     .061     .030     .096     .042   578.30    400.00
 .000158   1700.   2050.   2100.        1        0        1     0.00  1650.00   2050.00
```

+.06

1490 NH CARD USED

X 150 FT. DOWNSTREAM FROM TITTABAWASSEE ROAD

BRIDGE, SECTION SKEWED BY A FACTOR OF 0.954

+.06

11.30	24.51	603.41	0.00	0.00	603.77	.36	.31	.06	589.30
48800.	384.	31595.	16821.	282.	5307.	14663.	29129.	2240.	595.90
4.95	1.36	5.95	1.15	.060	.030	.094	.042	578.90	94.54
.000242	1600.	1600.	1600.	2	0	1	0.00	2014.38	2108.92

3265 DIVIDED FLOW

Y TITTABAWASSEE ROAD BRIDGE - DOWNSTREAM FACE,

BRIDGE SKEWED BY A FACTOR 0.899

+.05

11.32	24.02	603.42	0.00	0.00	603.85	.44	.05	.04	608.30
48800.	0.	44949.	3851.	0.	8158.	2410.	29182.	2247.	599.10
4.96	0.00	5.51	1.60	.030	.030	.030	.042	579.40	115.46
.000453	149.	149.	149.	1	0	1	0.00	1810.67	2090.31

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.15	1.50	2.50	0.00	400.00	18.00	10352.00	1.80	579.40	579.40

6840,FLOW IS BY WEIR AND LOW FLOW
6870 D.S. ENERGY OF 603.85 HIGHER THAN COMPUTED ENERGY OF 603.72

3265 DIVIDED FLOW

BRIDGE W.S.= 603.45 BRIDGE VELOCITY= 4.19

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
606.00	603.72	.03	6143.	42872.	10352.	606.00	600.80	15.00

Y TITTABAWASSEE ROAD BRIDGE - UPSTREAM FACE,

BRIDGE SKEWED BY A FACTOR OF 0.899:

HWM 597.54, MARCH, 1976, DISCHARGE = 20,900 CFS

11.33	24.02	603.42	0.00	0.00	603.85	.44	0.00	0.00	608.30
48800.	0.	44979.	3821.	0.	8154.	2396.	29191.	2248.	599.10
4.96	0.00	5.52	1.59	.030	.030	.030	.042	579.40	115.48
.000455	38.	38.	38.	2	0	4	0.00	1809.02	2089.60

+.05

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

REPEAT OF FIELD SECTION W WITH INVERT

ADJUSTED, SECTION ADJUSTED FOR SKEW BY

A FACTOR OF 0.954

2 05

11.34	24.35	603.75	0.00	0.00	603.94	.19	.01	.08	589.30
48800.	291.	36550.	11959.	296.	9201.	13509.	29210.	2251.	596.90
4.97	.98	3.97	.89	.060	.030	.090	.042	579.40	93.56
.000122	49.	49.	49.	2	0	1	0.00	2048.58	2142.13

.7

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

TITTABAWASSEE RIVER J&A

	SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
	2.63	24.50	0.00	0.00	569.40	48800.00	593.86	.64	0.00	0.00	43797.08	24.46	2575.00
	2.63	24.50	0.00	0.00	569.40	48800.00	593.74	.91	.01	.14	47580.81	24.34	1757.91
	2.64	38.00	592.80	592.70	569.40	48800.00	593.84	.85	.05	0.00	47484.92	24.44	1767.13
	2.64	12.20	0.00	0.00	569.40	48800.00	594.11	.65	.00	.06	46273.79	24.71	2488.65
	2.65	12.30	0.00	0.00	569.40	48800.00	594.31	.50	.00	.05	43829.21	24.91	2525.00
	2.65	24.50	0.00	0.00	569.40	48800.00	594.63	.26	.00	.07	37574.73	25.23	2525.00
	2.99	1850.00	0.00	0.00	574.40	48800.00	595.13	.17	.38	.03	29224.13	20.73	1846.85
	3.46	2500.00	0.00	0.00	572.60	48800.00	595.77	.14	.60	.01	28569.94	23.17	2598.76
	3.69	1250.00	0.00	0.00	571.80	48800.00	596.00	.45	.38	.15	43162.00	24.20	1520.00
	3.71	99.00	0.00	0.00	571.80	48800.00	595.97	.62	.06	.09	44576.70	24.17	562.86
	3.72	24.00	598.40	594.20	571.80	48800.00	596.35	.59	.34	0.00	44536.00	24.55	562.88
	3.73	49.00	0.00	0.00	571.80	48800.00	596.70	.34	.03	.08	42270.82	24.90	1520.00
	3.88	800.00	0.00	0.00	571.70	48800.00	597.15	.12	.18	.06	28874.29	25.45	1900.00
	4.45	3050.00	0.00	0.00	571.20	48800.00	597.68	.14	.53	.01	22698.65	26.48	2440.00
	4.75	1600.00	0.00	0.00	572.10	48800.00	597.96	.10	.23	.01	21196.19	25.86	2670.00
A	5.04	1500.00	0.00	0.00	572.90	48800.00	598.15	.36	.33	.13	38117.20	25.25	1633.26
B	5.05	49.00	0.00	0.00	572.90	48800.00	598.25	.31	.02	.02	41821.78	25.35	668.70
	5.05	1.00	596.70	604.20	572.90	48800.00	598.25	.31	.00	.00	41821.71	25.35	668.70
	5.06	64.00	596.70	604.20	572.90	48800.00	598.29	.30	.04	.00	41816.45	25.39	668.70
	5.06	1.00	0.00	0.00	572.90	48800.00	598.29	.30	.00	.00	41816.37	25.39	668.70
	5.07	49.00	0.00	0.00	572.90	48800.00	598.36	.27	.02	.01	39714.68	25.46	1638.36
C	5.32	1400.00	0.00	0.00	569.10	48800.00	598.95	.11	.38	.05	19220.35	29.85	2300.00
D	6.06	3900.00	0.00	0.00	576.30	48800.00	599.73	.12	.79	.00	25806.57	23.43	2395.00
	6.60	2825.00	0.00	0.00	573.90	48800.00	600.26	.04	.43	.02	14646.27	26.36	3743.98
E	6.63	200.00	0.00	0.00	573.90	48800.00	600.28	.04	.02	.00	14758.83	26.38	3684.02
	6.64	37.00	0.00	0.00	574.10	48800.00	600.25	.12	.01	.04	22490.50	26.15	3639.45
	6.64	18.50	0.00	0.00	574.20	48800.00	600.19	.26	.01	.07	29186.79	25.99	3590.02
F	6.65	18.50	0.00	0.00	574.20	48800.00	600.18	.30	.01	.02	30637.39	25.98	3269.87

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6.65	1.00	596.60	602.80	574.20	48800.00	600.17	.30	.00	.00	30621.74	25.97	3269.98
6.65	21.00	596.60	602.80	574.20	48800.00	600.19	.30	.01	.00	30593.26	25.99	3272.02
6.65	1.00	0.00	0.00	574.20	48800.00	600.19	.30	.00	.00	30608.57	25.99	3272.12
6.66	12.20	0.00	0.00	574.40	48800.00	600.29	.23	.01	.02	28194.85	25.89	3604.46
6.66	12.20	0.00	0.00	574.30	48800.00	600.44	.12	.00	.03	22391.83	26.14	3648.67
6.66	24.50	0.00	0.00	574.20	48800.00	600.55	.04	.00	.02	14831.52	26.35	3691.75
G 7.12	2450.00	0.00	0.00	571.40	48800.00	600.68	.06	.14	.01	23483.86	29.28	3150.00
H 7.69	3000.00	0.00	0.00	576.00	48800.00	600.85	.06	.17	.00	15711.75	24.85	2300.00
I 8.14	2400.00	0.00	0.00	579.30	48800.00	601.01	.33	.30	.14	33115.68	21.71	1750.00
J 8.88	3900.00	0.00	0.00	571.70	48800.00	601.88	.18	.67	.04	24216.57	30.18	2304.35
K 9.33	2350.00	0.00	0.00	571.00	48800.00	602.17	.22	.31	.02	26619.16	31.17	2145.65
L 10.16	4400.00	0.00	0.00	578.40	48800.00	602.81	.08	.45	.04	19437.53	24.41	3458.55
M 10.61	2350.00	0.00	0.00	579.00	48800.00	602.96	.13	.18	.02	24868.15	23.96	2740.82
N 10.99	2050.00	0.00	0.00	578.30	48800.00	603.15	.25	.25	.06	31631.67	24.85	1650.00
O 11.30	1600.00	0.00	0.00	578.90	48800.00	603.41	.36	.31	.06	31595.42	24.51	2014.38
P 11.32	149.00	0.00	0.00	579.40	48800.00	603.42	.44	.05	.04	44948.81	24.02	1810.67
11.33	38.00	600.80	606.00	579.40	48800.00	603.42	.44	0.00	0.00	44978.82	24.02	1809.02
11.34	49.00	0.00	0.00	579.40	48800.00	603.75	.19	.01	.08	36550.38	24.35	2048.58

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
2.628	48800.000	593.860	0.000	0.000	0.000	2574.999	0.000	24.500
2.631	48800.000	593.736	0.000	-.124	0.000	1757.907	0.000	24.500
2.640	48800.000	593.843	0.000	.107	0.000	1767.128	0.000	38.000
2.643	48800.000	594.114	0.000	.271	0.000	2488.648	0.000	12.200
2.645	48800.000	594.313	0.000	.199	0.000	2524.999	0.000	12.300
2.649	48800.000	594.626	0.000	.312	0.000	2524.999	0.000	24.500
2.992	48800.000	595.128	0.000	.502	0.000	1846.846	0.000	1850.000
3.456	48800.000	595.772	0.000	.644	0.000	2598.761	0.000	2500.000
3.693	48800.000	595.998	0.000	.227	0.000	1519.999	0.000	1250.000
3.711	48800.000	595.972	0.000	-.026	0.000	562.863	0.000	99.000
3.717	48800.000	596.345	0.000	.373	0.000	562.885	0.000	24.000
3.725	48800.000	596.696	0.000	.351	0.000	1519.999	0.000	49.000

3.877	48800.000	597.153	0.000	.457	0.000	1899.999	0.000	800.000
4.451	48800.000	597.680	0.000	.527	0.000	2439.999	0.000	3050.000
4.754	48800.000	597.956	0.000	.276	0.000	2669.999	0.000	1600.000
5.038	48800.000	598.154	0.000	.198	0.000	1633.258	0.000	1500.000
5.046	48800.000	598.250	0.000	.096	0.000	668.700	0.000	49.000
5.047	48800.000	598.251	0.000	.001	0.000	668.700	0.000	1.000
5.059	48800.000	598.290	0.000	.039	0.000	668.700	0.000	64.000
5.060	48800.000	598.291	0.000	.001	0.000	668.700	0.000	1.000
5.068	48800.000	598.364	0.000	.074	0.000	1638.356	0.000	49.000
5.322	48800.000	598.948	0.000	.584	0.000	2299.999	0.000	1400.000
6.061	48800.000	599.734	0.000	.786	0.000	2394.999	0.000	3900.000
6.596	48800.000	600.262	0.000	.528	0.000	3743.979	0.000	2825.000
6.634	48800.000	600.285	0.000	.022	0.000	3684.016	0.000	200.000
6.641	48800.000	600.249	0.000	-.035	0.000	3639.454	0.000	37.000
6.644	48800.000	600.189	0.000	-.060	0.000	3590.018	0.000	18.500
6.647	48800.000	600.175	0.000	-.014	0.000	3269.872	0.000	18.500
6.648	48800.000	600.175	0.000	-.001	0.000	3269.975	0.000	1.000
6.652	48800.000	600.187	0.000	.012	0.000	3272.020	0.000	21.000
6.653	48800.000	600.190	0.000	.003	0.000	3272.117	0.000	1.000
6.655	48800.000	600.288	0.000	.099	0.000	3604.463	0.000	12.200
6.657	48800.000	600.441	0.000	.153	0.000	3648.670	0.000	12.200
6.661	48800.000	600.551	0.000	.110	0.000	3691.755	0.000	24.500
7.121	48800.000	600.677	0.000	.127	0.000	3149.999	0.000	2450.000
7.689	48800.000	600.851	0.000	.174	0.000	2299.999	0.000	3000.000
8.144	48800.000	601.010	0.000	.159	0.000	1749.999	0.000	2400.000
8.883	48800.000	601.875	0.000	.865	0.000	2304.347	0.000	3900.000
9.328	48800.000	602.171	0.000	.296	0.000	2145.653	0.000	2350.000
10.161	48800.000	602.807	0.000	.636	0.000	3458.552	0.000	4400.000
10.606	48800.000	602.964	0.000	.156	0.000	2740.815	0.000	2350.000
10.994	48800.000	603.152	0.000	.188	0.000	1649.999	0.000	2050.000
11.297	48800.000	603.406	0.000	.254	0.000	2014.378	0.000	1600.000
11.324	48800.000	603.417	0.000	.011	0.000	1810.669	0.000	149.000
11.333	48800.000	603.416	0.000	-.001	0.000	1809.025	0.000	38.000

11.341	48800.000	603.754	0.000	.338	0.000	2048.576	0.000	49.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	2250.535	0.000

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW TWP.

3) WATERCOURSE: TITTABAWASSEE RIVER

4) DOCUMENT TYPE: REPORT

00BREAK00

Telex: 23-5793
Phone: (313) 334-9901

Johnson&Anderson,Inc.
CONSULTING ENGINEERS
P. O. Box 1166 • 2300 Dixie Highway • Pontiac, Mich. 48056

September 21, 1977

Mr. Daniel H. Morgan, P.E., Chief
Flood Insurance Unit
MDNR-Water Management Division
5th Floor, Mason Building
Lansing, Michigan 48909

RECEIVED
SEP 23 1977
Water Management

Re: Spaulding Township FIS
Cass River Hydraulics

Ref: J&A File No. 5670-09-1

Dear Mr. Morgan:

The Spaulding Township flooding has been reevaluated and we are now proposing to treat this area as a lake situation. Our analysis of the flood elevations at Green Point, the upstream end of the Saginaw River, and the Shiawassee Flats gage, Flint River at Alicia, shows that for the higher flows the Flats will act as a lake with no significant hydraulic gradient. Since the flooding is now considered lacustrine, a floodway is not appropriate for the Spaulding Township portion of the Shiawassee Flats and none is proposed. The elevations we have determined for Spaulding Township are as follows:

10-year	589.87	
50-year	592.73	Elevations
100-year	593.86	NGVD 1929
500-year	596.57	

Enclosed for your files is a copy of the computer information used to confirm the above. Considering the comments of your letter of June 27, 1977, and the enclosed data, we consider the Spaulding Township flood elevations to have your approval.

Sincerely,

Gerald A. Cleary

Gerald A. Cleary, P.E.
Vice President

DDC/dp
enc.
cc: File

Telex: 23-5793
Phone: (313) 334-9901

Johnson&Anderson,Inc.
CONSULTANTS
P. O. Box 1166 ▫ 2300 Dixie Highway ▫ Pontiac, Mich. 48056

April 14, 1977

RECEIVED
APR 19 1977
WATER MANAGEMENT

Water Management Division
Bureau of Land & Water Management
Michigan Dept. of Natural Resources
Post Office Box 30028
Lansing, Michigan 48909

Attention: Mr. Daniel H. Morgan, Acting Chief
Flood Insurance Unit

Re: Flood Insurance Studies
Tittabawassee River and unnamed
tributary to the Tittabawassee

Ref: J&A File No. 5555-60-1

Gentlemen:

We have completed the hydraulic investigation of the Tittabawassee River and an unnamed tributary to the Tittabawassee. The study for the Tittabawassee extends from the end of the Saginaw River at Green Point to Tittabawassee Road, which is approximately 11 miles upstream from Green Point. The unnamed creek was studied from its confluence with the Tittabawassee to a point approximately 4000 feet upstream. In compliance with the Flood Insurance Study requirements, flows with recurrence intervals of 10-, 50-, 100-, and 500-years were selected for this study. The flows used in the study have been approved by the Department of Natural Resources.

Enclosed with this submittal are:

1. HEC-2 computer run, 4 flows and IPLOT for 100-year flood
2. HEC-2 computer run, 100-year flow, natural floodway for the Tittabawassee River only
3. Plan view and profile
4. Hydraulic analysis report and support data

If you have any questions, please call Thomas Baier, project manager for this study.

Sincerely,

Gerald A. Cleary

Gerald A. Cleary, P.E.
Vice President
TAB/dp
encl.
cc: File

HYDRAULIC ANALYSIS

TITTABAWASSEE RIVER

#5555-60

HYDRAULIC ANALYSIS

Introduction

The stream being studied is the Tittabawassee River in Saginaw Township, Saginaw County, Michigan. The study limits are from the end of the Saginaw River Study (at Green Point) to the northern boundary of Saginaw Township which is Tittabawassee Road.

The flow-frequency relationship at Midland was computed by analyzing the annual peak flows recorded at the Midland gage during the water years 1876, 1907 and 1910 to 1975 by the log-Pearson Type III method. The peak flood of 1931 was treated as an extremely low value since it distorted the skewness of the distribution. Flows were then calculated for the study area considering the drainage area and hydrologic region specified in the Geological Survey Water-Supply Paper No. 1677. These flows have been approved by the Michigan Department of Natural Resources. The project manager for the study is Thomas Baier.

Method of Analysis

Water-surface profiles were computed through the use of the U.S. Corps of Engineers' HEC-2 step-backwater computer program. The hydraulic model was developed for the 100-year flow. Valley sections upstream and downstream of bridge constrictions were encroached to model the contraction and expansion of flow. Valley and bridge sections used in the study were surveyed in July and August of 1976.

Variables and Coefficients

The roughness factors were established by comparing photographs at cross sections, aerial photographs, and field inspection information with photographs and descriptions found on pages 101 to 123 in Open-Channel Hydraulics by Ven Te Chow. The time of year of flooding considered was during the months of March and April. In general, the following range of values was used:

Description	Manning's "n"
A. Channel	
1. Sandy to mucky bottom with good alignment to some meandering and adverse slopes	.03 - .045
B. Overbanks	
1. Farmland or open fields with short weeds	.05 - .06
2. Dense woods with thick undergrowth	.12 - .15
3. Medium woods plus some houses	.1 .12
4. Heavy brush and scattered trees	.08 - .09
5. Residential with scattered trees	.15
6. Scattered trees with medium brush	.10
7. Field with scattered trees	.08
8. Field with short grass	.04

The contraction and expansion coefficients used in the study were .3 and .5, respectively. These values were used throughout the study. References evaluated in the selection of these values were the HEC-2 Users Manual, Exhibit 2,

page 2, and Open-Channel Hydraulics, Ven Te Chow, pages 311 and 468.

The orifice and weir coefficients used in the HEC-2 "special bridge" routine were determined as outlined in the HEC-2 Users Manual, Exhibit 2, pages 1 and 2, and Application of the HEC-2 Bridge Routines, pages 27-35.

Starting Point

revised

not true

Tittabawassee River profile computations were begun by using the final cross section (22.186) from the Saginaw River Study along with the flood flows and flood elevations at that section. In Survey Report on the Saginaw River, Michigan, and Its Tributaries by the U.S. Army Corps of Engineers, Detroit District, January 1954, an analysis was done on the gages on the Saginaw River and its tributaries. They found that for all flood flows of 25,000 cfs or more at Saginaw, two or more of the major tributaries were flooding at the time. In a few cases, a large portion of the Saginaw River flow was contributed by the Tittabawassee River. Based on this information and examination of more recent gage records, the Tittabawassee River was run as a continuation of the Saginaw River. At the first Tittabawassee River cross section (1.174), the 10-, 50-, 100-, and 500-year Tittabawassee flows were input. The difference in flow between section 0.0 and section 1.174 is contributed by one of the other tributaries.

Floodway Determination

The 100-year natural HEC-2 computer run is a model of the stream using sweep

Saginaw Report is at USGS 4. datum

and extent of moving floodwater techniques. The 10-, 50-, 100-, and 500-year multiple computer run is a model of the floodway after several cross sections had been encroached further to meet the .1 ft. increase in the 100-year flood elevation limitation. Generally, this was done to exclude any present development from the floodway. Cross sections 2.140, 2.424, 2.623, 2.628, 2.631, 2.640, 2.643, 2.645, 2.649, 2.992, 4.754, 5.322, 6.061, 7.689, 8.144, 8.883, 9.328, and 10.994 were encroached in this manner.

Discussion

Because of the wide flood plain and high occurrence of flood stage flow, three of the five road crossings have been furnished with one or two smaller bridge openings in addition to the main bridge span.

The Penn Central Railroad Bridge has three bridge openings. On the 100-year flood, all three were under pressure flow so they were coded as a special bridge. The total area for all three openings was coded on the SB card. Because of a lack of continuity in overbank flow between the bridge and the upstream and downstream sections, an "n" value of 1 was inserted on the NH card for sections 3.693 and 3.725. The relatively high value was inserted in the areas of the sections that would not be carrying moving water based on a 4:1 expansion and 1:1 contraction of flow. This resulted in a very high overbank "n" value and made the flow continuity between sections much better.

Gratiot Road is a double bridge and is under low flow for both openings for the 100-year flow. It was, therefore, coded as a normal bridge.

State Road has three bridges. For the 100-year flow, a combination of pressure flow, weir flow and low flow was encountered. The main bridge is under low flow, the two small bridges experienced pressure flow and there was weir flow over the road between the bridges. Due to limitations of the special bridge routine, the normal bridge routine was used as the best approach to the problem.

As noted on comment cards, several manufactured sections were added upstream and downstream of bridges where the change in velocity head was excessive. An in-house computer program was used to determine these sections. Given the downstream or upstream valley section and bridge GR points, the program interpolates sections at given distances between the given sections.

Sections 2.140 through 3.712 were encroached to follow the expansion of flow from the Penn Central Railroad Bridge.

The section 50 ft. upstream from Penn Central Railroad and section 3.877 were encroached in the left overbank because of several large buildings located there.

Section 4.451 was encroached in the left overbank to model the expansion flow from the Gratiot Road bridge. It is encroached in the right overbank because of the high ground immediately upstream.

Section 10.994 is encroached in the right overbank because of the isolated low ground that the section was taken through.

Flow continuity between upstream and downstream sections at Gratiot Road was found to be a problem. A large difference was found in the amount of flow carried by the bridge section and the upstream and downstream sections in the left overbank. To correct this, a large "n" value was input into the left overbank in the upstream and downstream sections to reduce the quantity of flow down to the amount carried by the bridge. The same problem was encountered at the Tittabawassee Road bridge. However, when the above solution was tried, the result was that too much flow was shifted from the overbank to the channel which caused excessive channel velocities and forced the water surface down. Therefore, the original solution with a large variation in overbank flow quantities was used.

Bridge Skews

The Center Road bridge was slightly skewed (12.5 degrees). A skew factor of .976 was input to correct the bridge geometry. A change of less than .1 ft. was seen in the water surface when this was done.

The Penn Central bridge is skewed 13 degrees. Because of the results observed at Center Road, no correction for skew was input.

The Gratiot Road bridge has a skew of 25 degrees to the main channel. A skew factor was not input because of the secondary bridge in the left overbank.

It was thought that the section in this overbank is perpendicular to the overbank flow. The main bridge was corrected by manually multiplying a skew factor of .906 by each station on the main bridge. This was done to both the bridge table and ground points.

No skew was encountered at State Road.

Tittabawassee Road is skewed 26 degrees to the channel. A skew factor of .899 was input here to correct the bridge geometry. The valley section 150 feet downstream from the bridge and 50 feet upstream from the bridge is skewed 17.5 degrees to the channel and was given a factor of .954.

High-Water Marks

Several high-water marks were obtained from a flood during March of 1976. The flow for that event obtained from the USGS gage at Midland was 20,100 cfs. This flow was increased to 20,900 cfs because of the increased drainage area from Midland to the mouth of the study area. The predicted 10-year flow is 28,600 cfs. A starting elevation was determined by obtaining the elevation-discharge values at the Saginaw gage on the Saginaw River for the same event and running the Saginaw River HEC-2 from the gage to the end of the study. The 20,900 cfs flow was run through the Tittabawassee HEC-2 deck to check the calculatied water-surface elevations against the high-water marks and were found to be within .3 ft.

high or low why so poor?

Original Cross Section Location

Cross Section	SECNO	Location
A	.001	At junction of Tittabawassee and Shiawassee Rivers
B	1.174	2900' d/s from old railroad grade
C	1.894	1000' u/s from old railroad grade
D	2.424	1100'± d/s from Center Road bridge
E	2.632	d/s face Center Road bridge
F	2.992	1900' u/s from Center Road bridge
G	3.693	100' d/s from Penn Central Railroad bridge
H	3.711	d/s face Penn Central Railroad bridge
I	4.451	3900' u/s from Penn Central Railroad bridge
J	5.038	50' d/s from Gratiot Road bridge
K	5.047	d/s face Gratiot Road bridge
L	5.322	1450' u/s from Gratiot Road bridge
M	6.061	3100' d/s from State Road bridge
N	6.634	75' d/s from State Road bridge
O	6.648	d/s face State Road bridge
P	7.121	2500' u/s from State Road bridge
Q	7.689	5500' u/s from State Road bridge
R	8.144	7900' us/ from State Road bridge
S	8.883	11800' u/s from State Road bridge
T	9.328	14150' u/s from State Road bridge
U	10.161	6000' d/s from Tittabawassee Road bridge

Tittabawassee River
Saginaw Township, Saginaw County
5555-60

Cross Section	SECNO	Location
V	10.606	3650' d/s from Tittabawassee Road bridge
W	10.994	1600' d/s from Tittabawassee Road bridge
X	11.297	150' d/s from Tittabawassee Road bridge
Y	11.325	d/s face Tittabawassee Road bridge

Johnson & Anderson, Inc.
Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

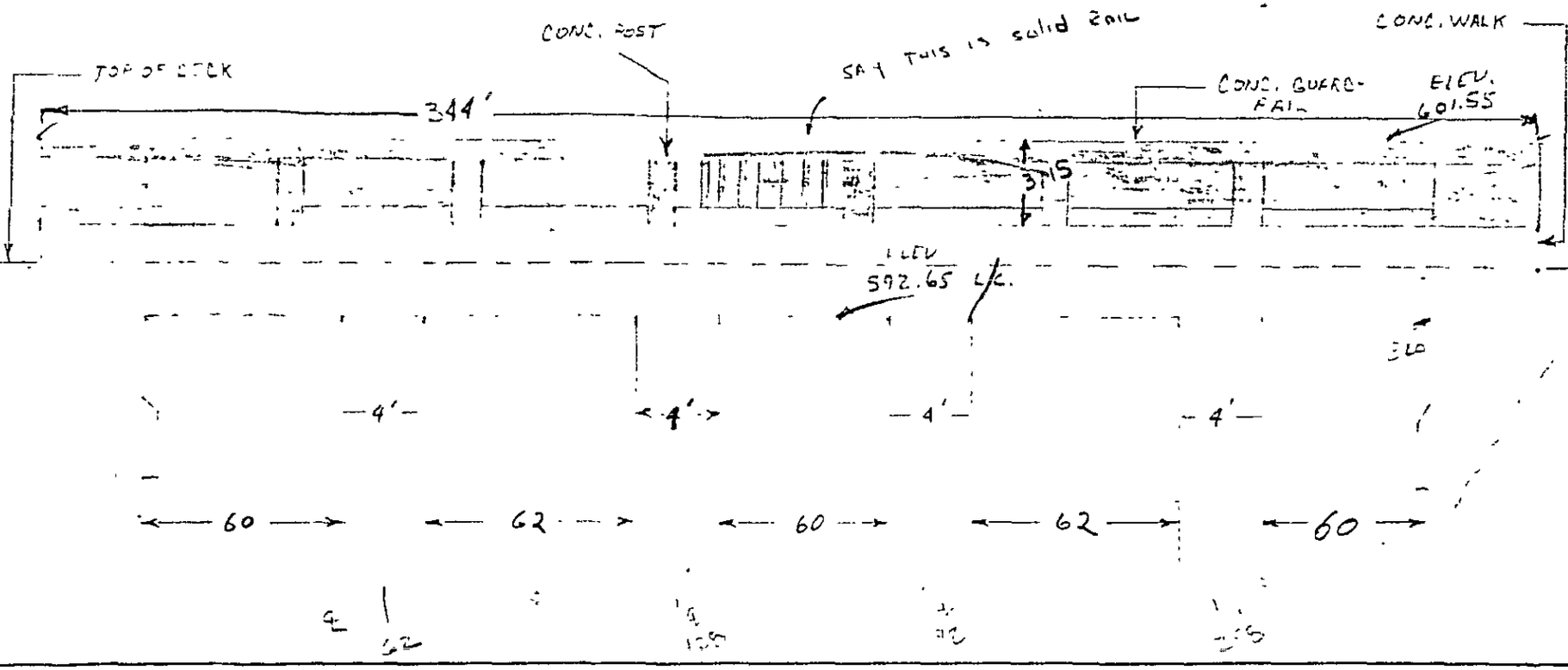
Code No. 5555-60 - 4

Job Name: SAGINAW TWP FIS.		By:
Date:	Feature: CENTER ST BRIDGE	Water Course: TITTABAWASSEE RIVER
Remarks: 6" CANAPEE OVER HANGS WITH 1.4" BY 6" SIDE WALK		
RIVER MILE 2.63		

Width of Piers: 4'	Pier Shape:	No. of Piers: 4	Area:
Water Elevation:	Length: 320'	Width of Deck: 36'	Skew:

FIELD SKETCH

Profile View ~~Plan View~~



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HYDR[illegible]IC STRUCTURAL DATA

(2)

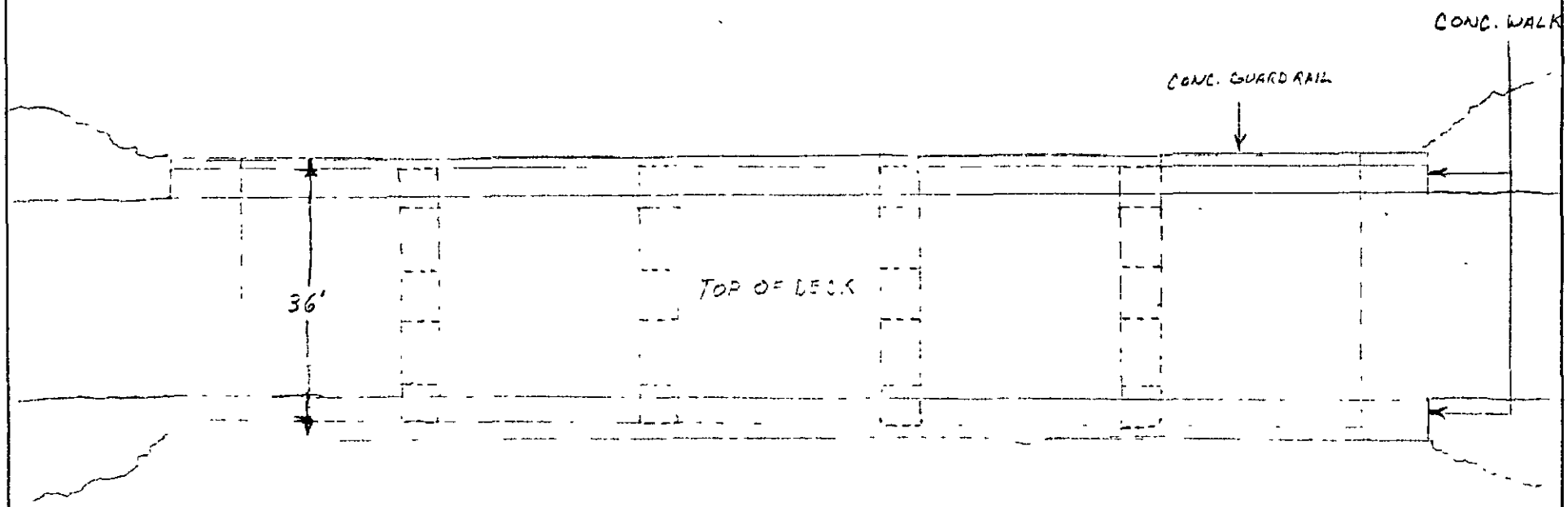
Code No. 5555-60-4

Job Name: TITTABAWASSEE RIVER		By:	
Date:	Feature: CENTER ST. BRIDGE	Water Course: TITTABAWASSEE R.	
Remarks:			
Width of Piers: 4'	Pier Shape:	No. of Piers: 4	Area:
Water Elevation:	Length: 320'	Width of Deck: 36'	Skew: 90°

FIELD SKETCH

~~Profile View~~

Plan View



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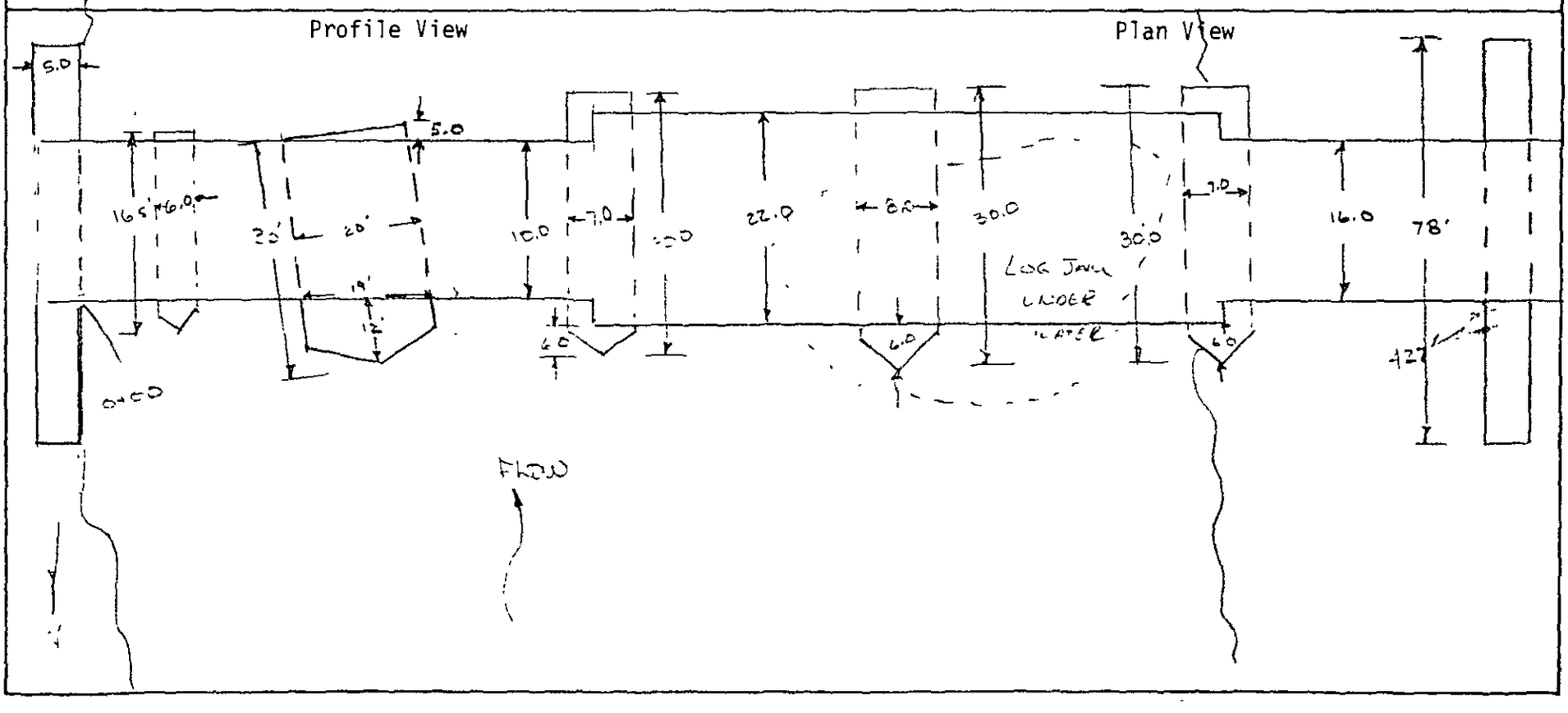
HYDRAULIC STRUCTURAL DATA

p 1 of 4

Code No. 5555-60-10

Job Name: Singleton Twp			By: R. Moser
Date:	Feature: Conc. Multi-Plate Bridge		Water Course: Titabawassee River
Remarks: Penn Central R.R. Bridge just west of Michigan Rd over River.			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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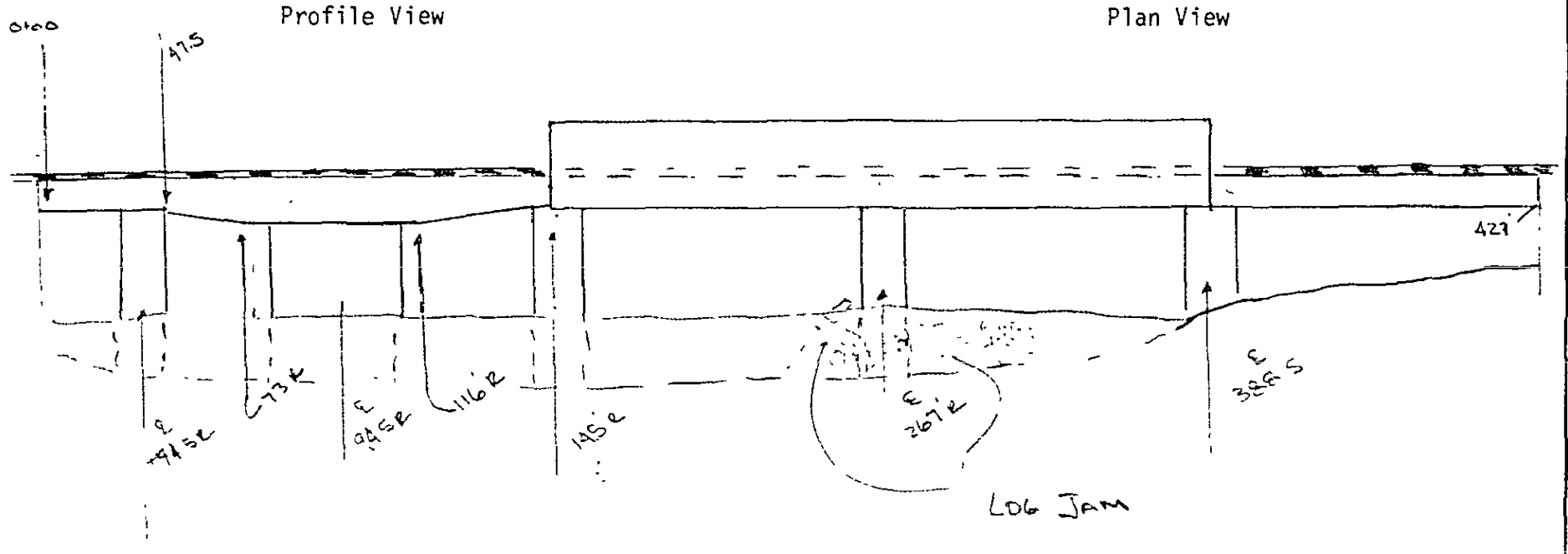
HYDRAULIC STRUCTURAL DATA

Code No. 5555-60

Job Name: SAGINAW TOWNSHIP		By:	
Date:	Feature: CONC. + MULTI-PLATE BRIDGE	Water Course: FITTA HAWASSEE R.	
Remarks: PENN CENTRAL R.R. BRIDGE JUST WEST W. MICHIGAN RD. OVER RIVER			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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Consulting Engineers
P O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

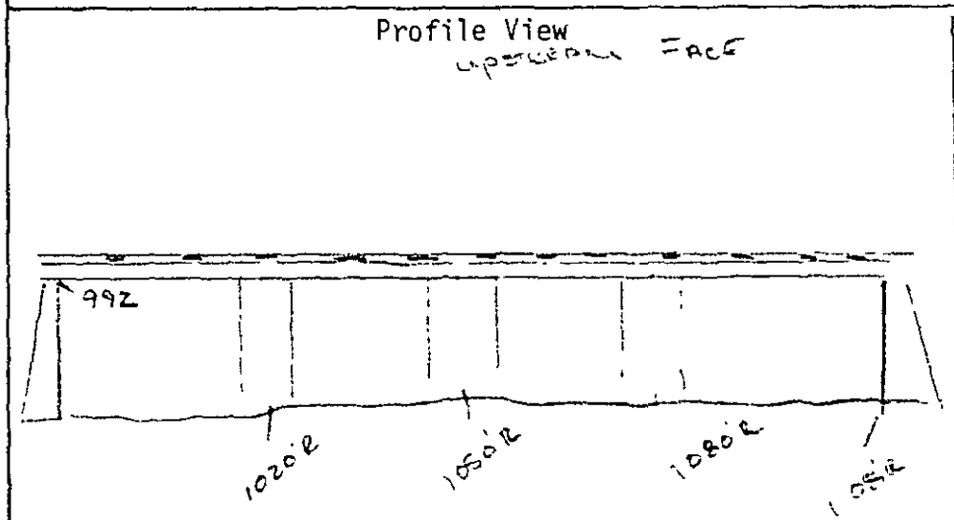
HYDRAULIC STRUCTURAL DATA

Code No. 5555-60

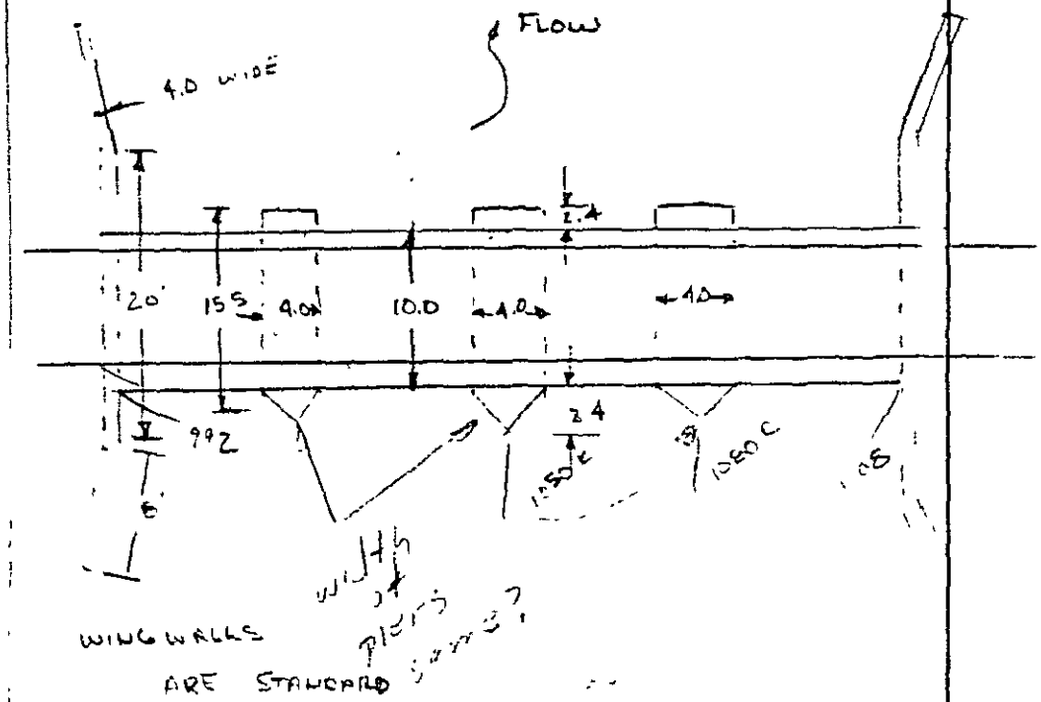
Job Name: SAGINAW TWP. BRIDGE #2		By:	
Date:	Feature:	Water Course: TITTABAWASSEE R.	
Remarks: DRY BED - NO WATER PENN CENTRAL R.R. BRIDGE - SECONDARY BRIDGE			
Width of Piers: 3	Pier Shape: ARE ALL ALIKE	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



Johnson & Anderson, Inc.
Consulting Engineers
P.O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC CROSS SECTION

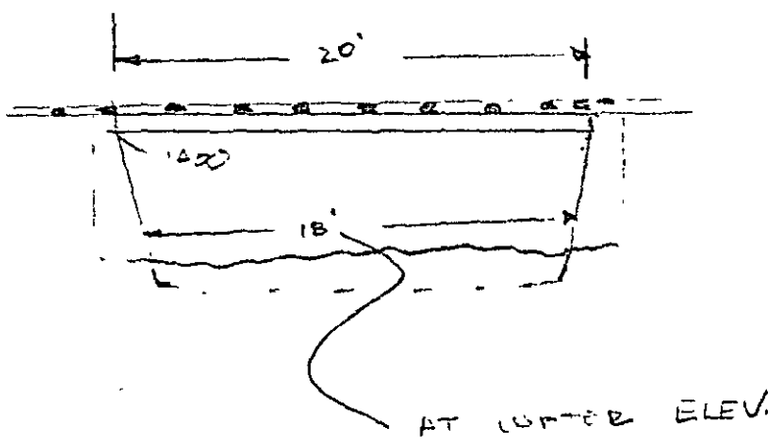
U.S. #10 BRIDGE 3

Code No. _____

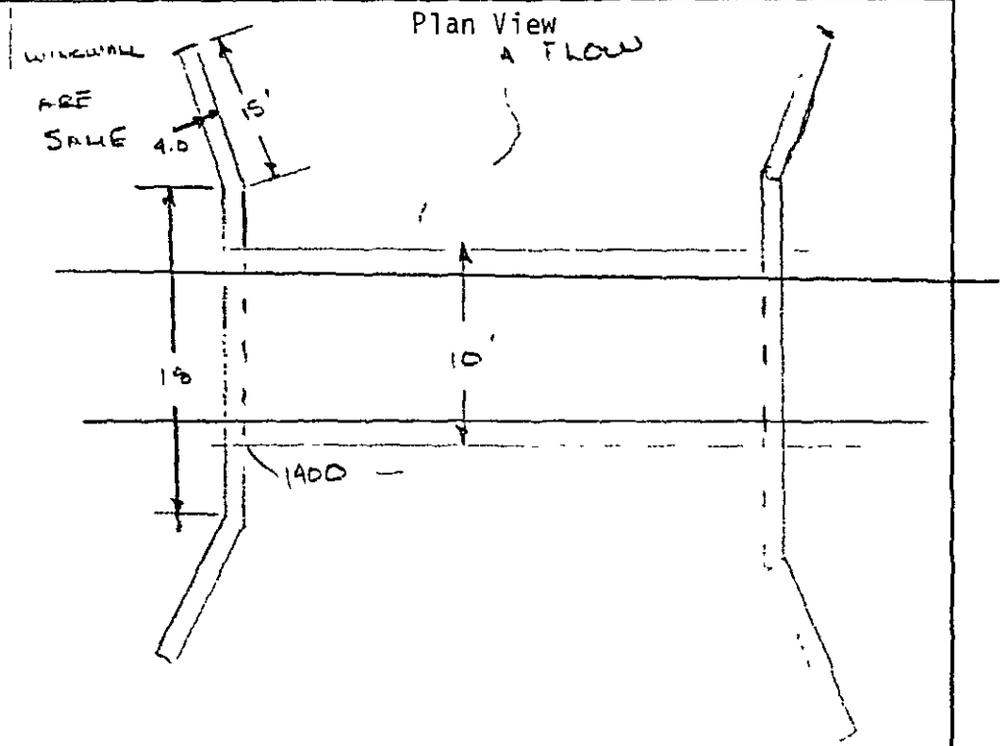
Job Name: SAGINAW TWP.		By:	
Date:	Feature:	Water Course: TITTABAWASSEE R.	
Remarks:			
BRIDGE 3			
PENN. CENTRAL R.R. BRIDGE - SECONDARY BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



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HYDRAULIC STRUCTURAL DATA

603.00

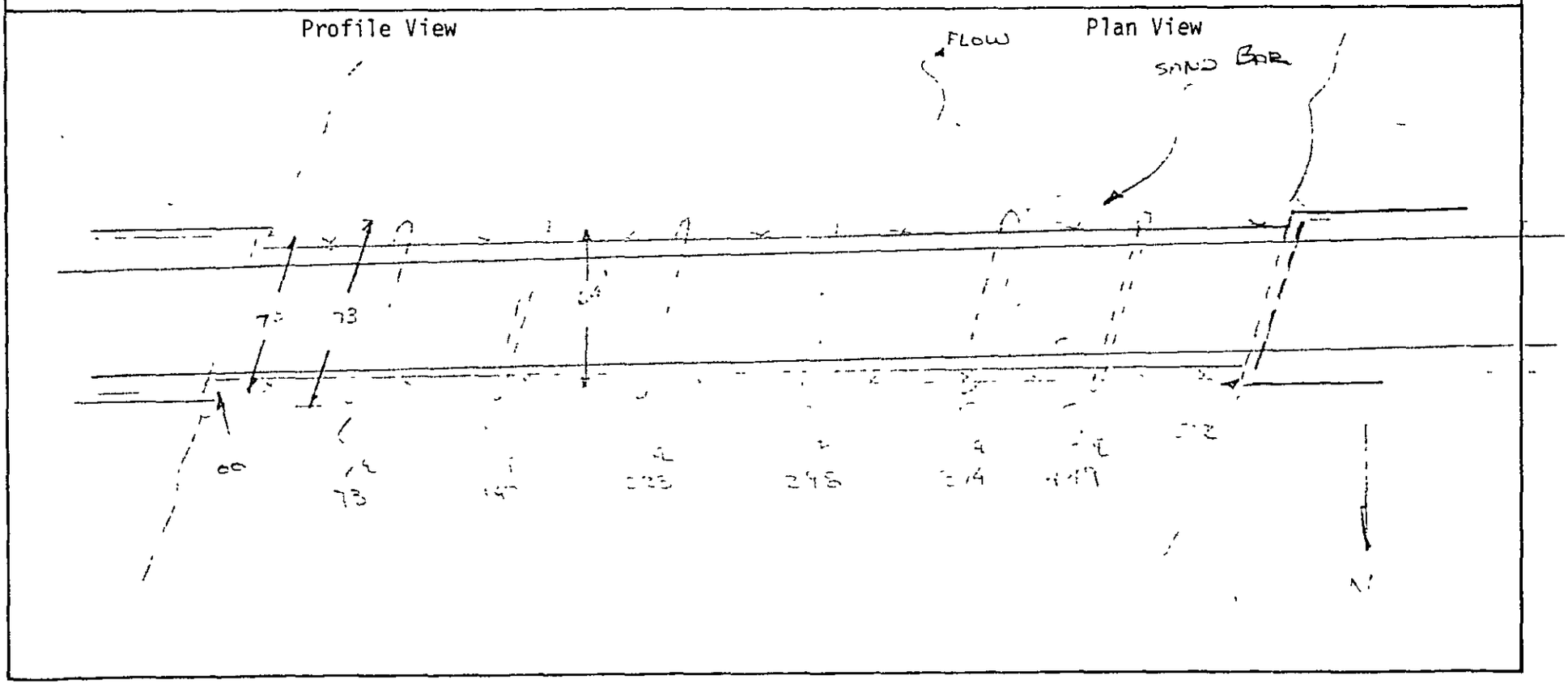
p1 of 4

Code No. 5555-60-10

Job Name: Saginaw Twp.		By: R. Moses
Date: 7-27-76	Feature: Conc Bridge	Water Course: Titabawassee
Remarks: GRATIOT ROAD - MAIN BRIDGE		
US #10 River Mile 604'		

Width of Piers: 3'	Pier Shape:	No. of Piers: 6	Area:
Water Elevation: 582.4	Length: 582	Width of Deck: 64	Skew:

FIELD SKETCH



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HYDRAULIC STRUCTURAL DATA

(2)

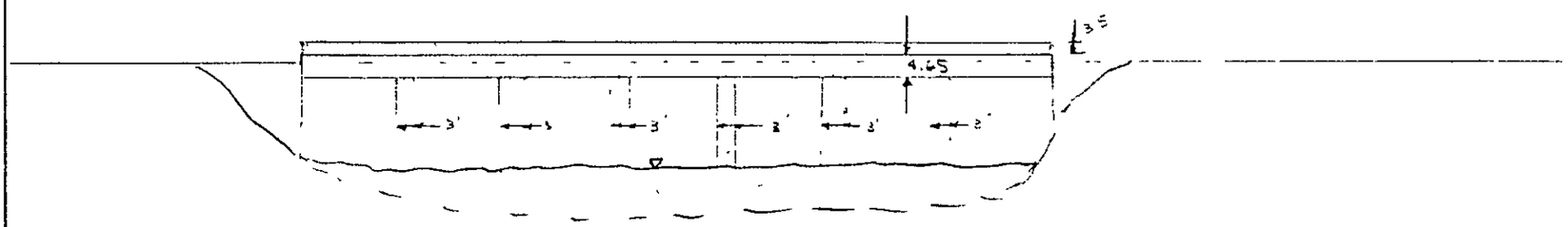
Code No. U.S. 10

Job Name: SAGINAW TWP.		By:	
Date:	Feature: CONC. BRIDGE	Water Course: TITTABAWASSEE R	
Remarks: GRATIOT ROAD - MAIN BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

~~Plan View~~



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HYDRAULIC STRUCTURAL DATA

(3)

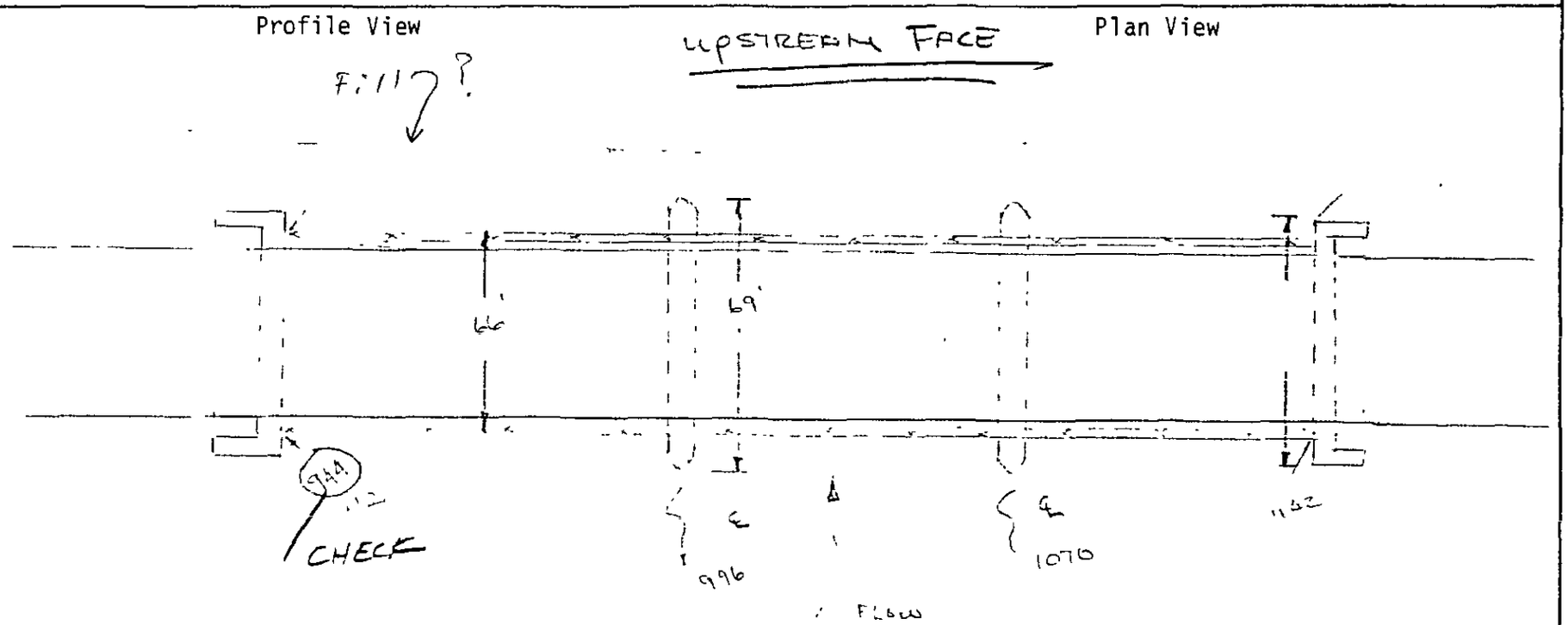
Code No. U.S. #10

Job Name: SAGINAW TWP.			By:
Date:	Feature: CONC BRIDGE		Water Course: TITTABAWASSEE R.
Remarks: GRATIOT ROAD - SECONDARY BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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HYDRAULIC STRUCTURAL DATA

(4)

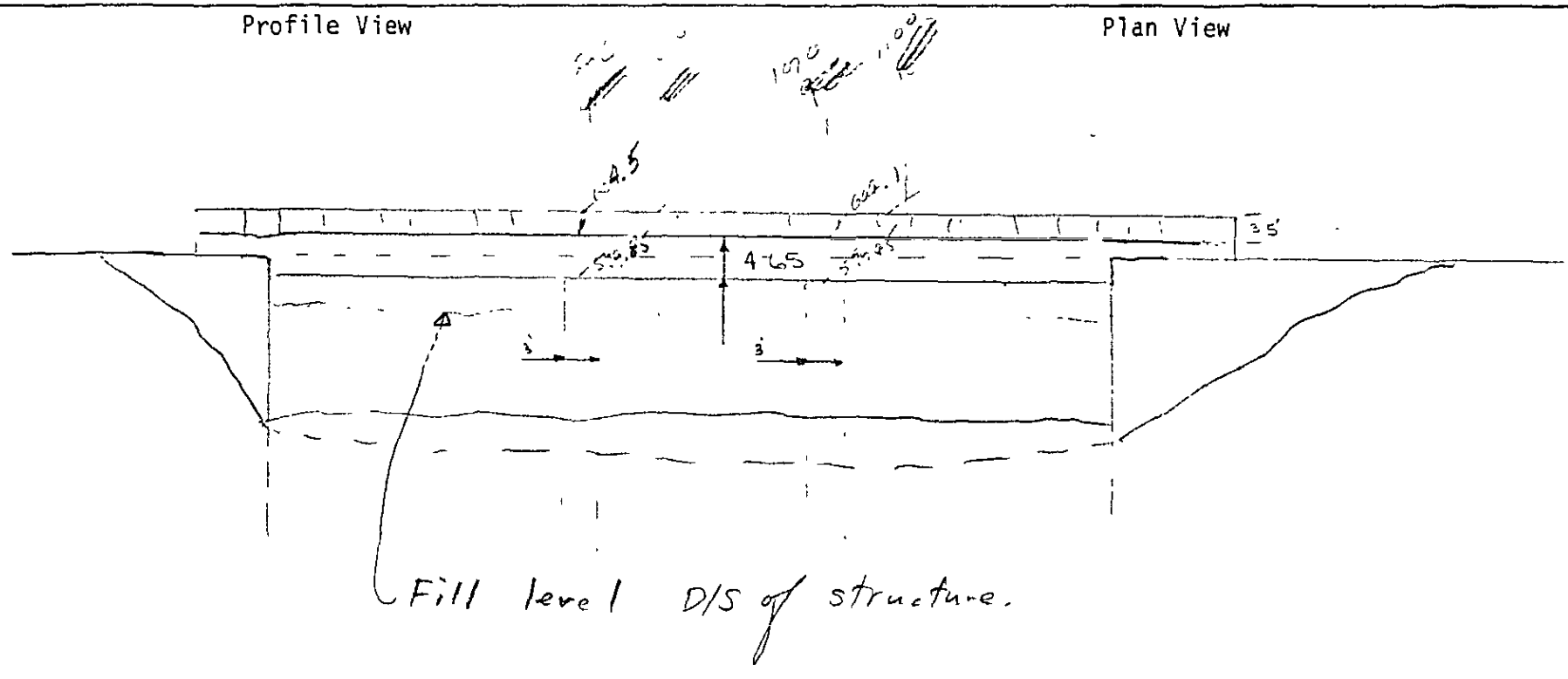
Code No. U.S. #10

Job Name: SAGINAW TWP.		By:	
Date:	Feature: CONC. BRIDGE	Water Course: TITTABAWASSEE R.	
Remarks: GRATIOT ROAD - SECONDARY BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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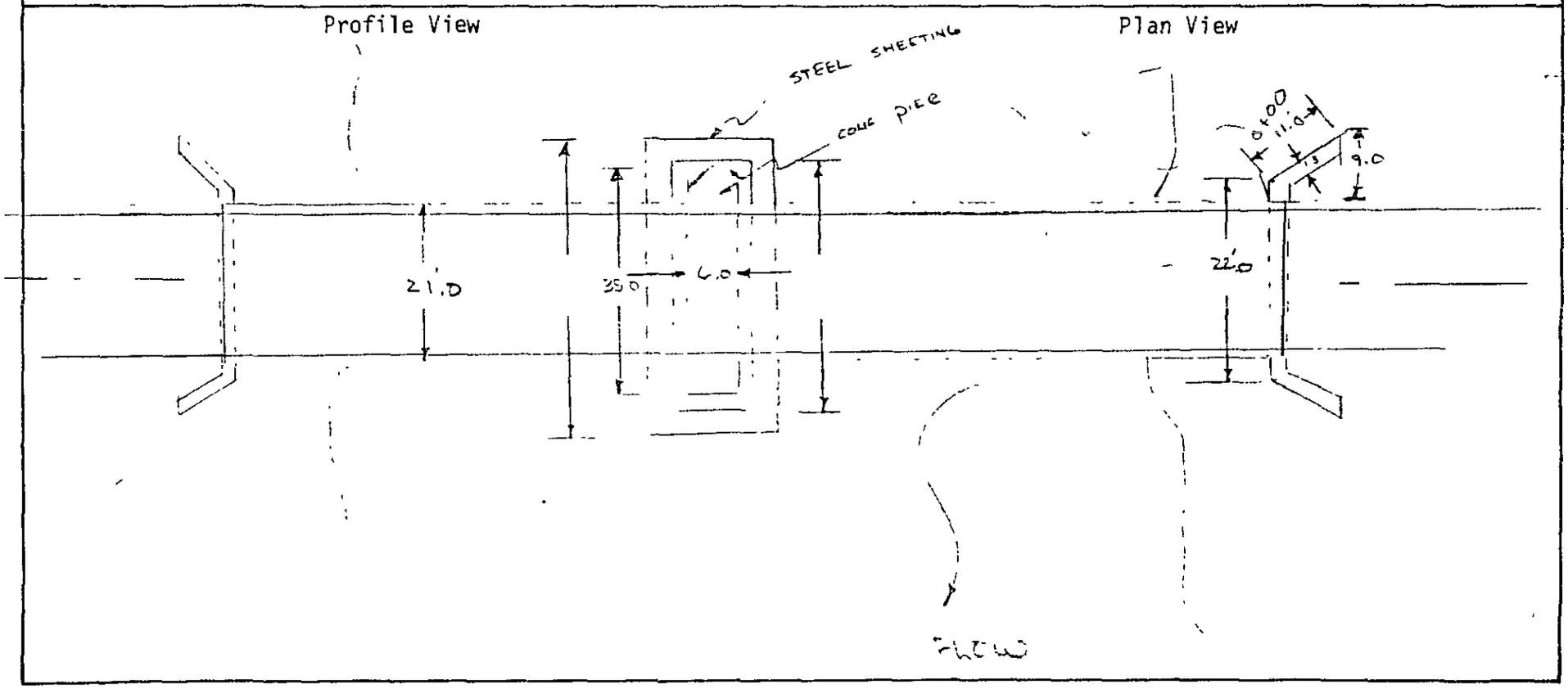
HYDRAULIC STRUCTURAL DATA

p 1 of 5

Code No. SSSS - 60 - 14

Job Name: Saginaw Twp.		By: R Moses	
Date: 7-27-76	Feature: 3 Bridges (Main - Tressle)	Water Course: Titabawassee River	
Remarks: Bridge c U.S is on State Rd over Titabawassee River			
River Mile 6-72			
US # 14			
Width of Piers: 60	Pier Shape: ⇧	No. of Piers: 1	Area: —
Water Elevation: 582.1	Length: 298	Width of Deck: 21.0'	Skew: —

FIELD SKETCH



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HYDRAULIC STRUCTURAL DATA

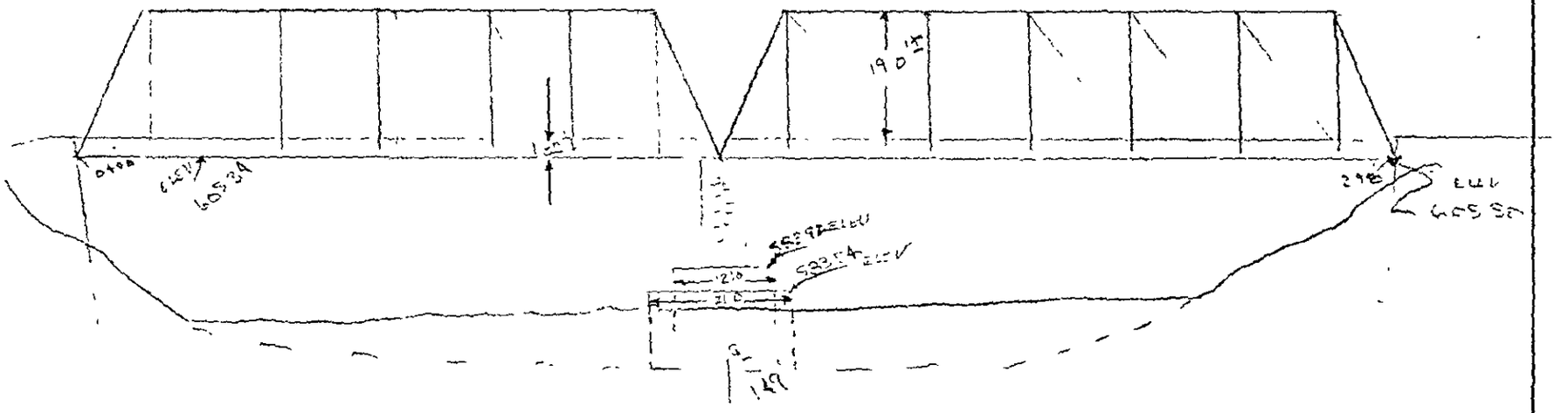
p 2 of 5

Code No. V.S. # 11

Job Name: SAGINAW TWP.			By:
Date:	Feature:		Water Course: TITTABAWASSEE R.
Remarks: STATE ROAD OVER TITTABAWASSEE RIVER			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View — UPSTREAM FACE — Plan View



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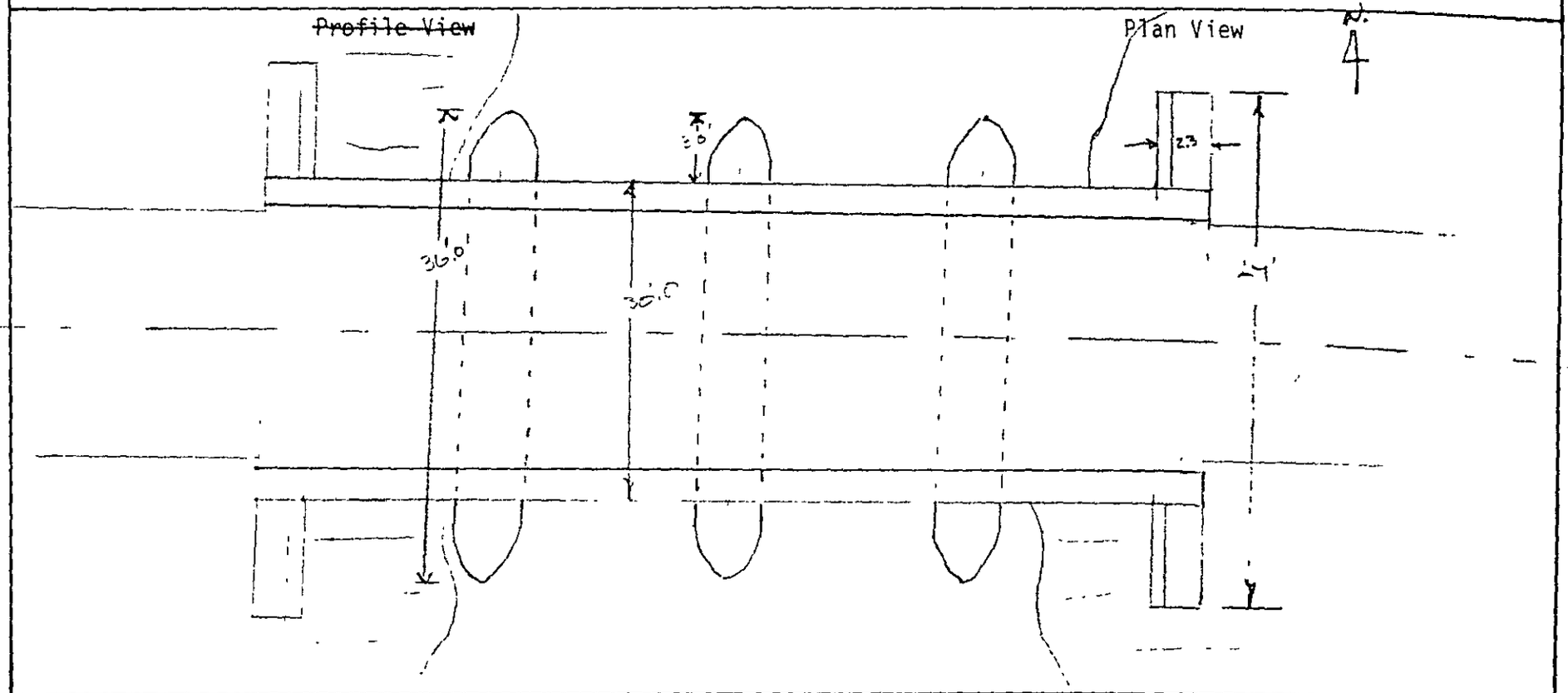
Code No. [illegible]14

Job Name: SAGINAW TWP FIS			By: J BENNETT
Date:	Feature:		Water Course:
Remarks: NO FLOW DRY BED			
STATE RD.- SECONDARY BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers: 3	Area:
Water Elevation:	Length:	Width of Deck:	Skew: 90°

FIELD SKETCH



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HYDRAU[illegible] STRUCTURAL DATA

4

Code No. U.S. #14

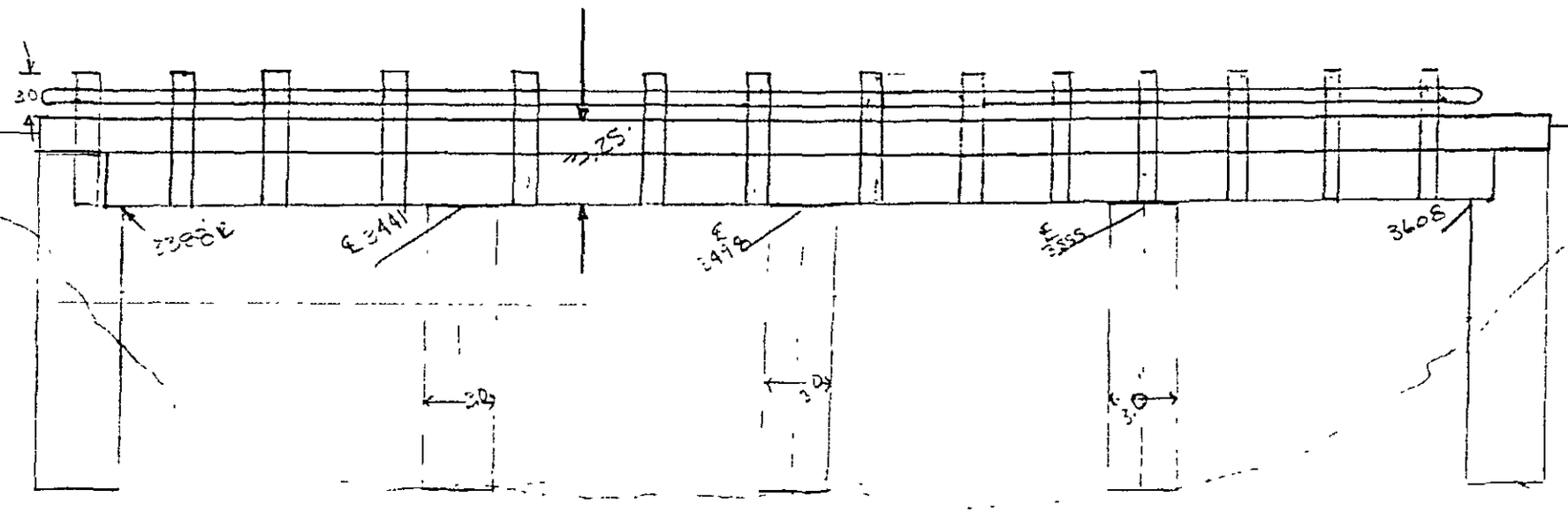
Job Name: SAR[illegible] AW TWP F.I.S.		By: J. BENNETT
Date:	Feature:	Water Course:
Remarks: NO FLOW DRUBBED	BRIDGE #3	CONCRETE
STATE RD. OVER THE TITTABAWASSEE - SECONDARY BRIDGE		

Width of Piers:	Pier Shape:	No. of Piers: 3	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View

Plan View



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HYDRAULIC STRUCTURAL DATA

Code No. 5555-60-24

1 OF 4 SHTS

Job Name: SAGINAW TWP FIS.		By: R. MOSES
Date:	Feature: CONC. BRIDGE	Water Course: TITABAWASSEE RIVER

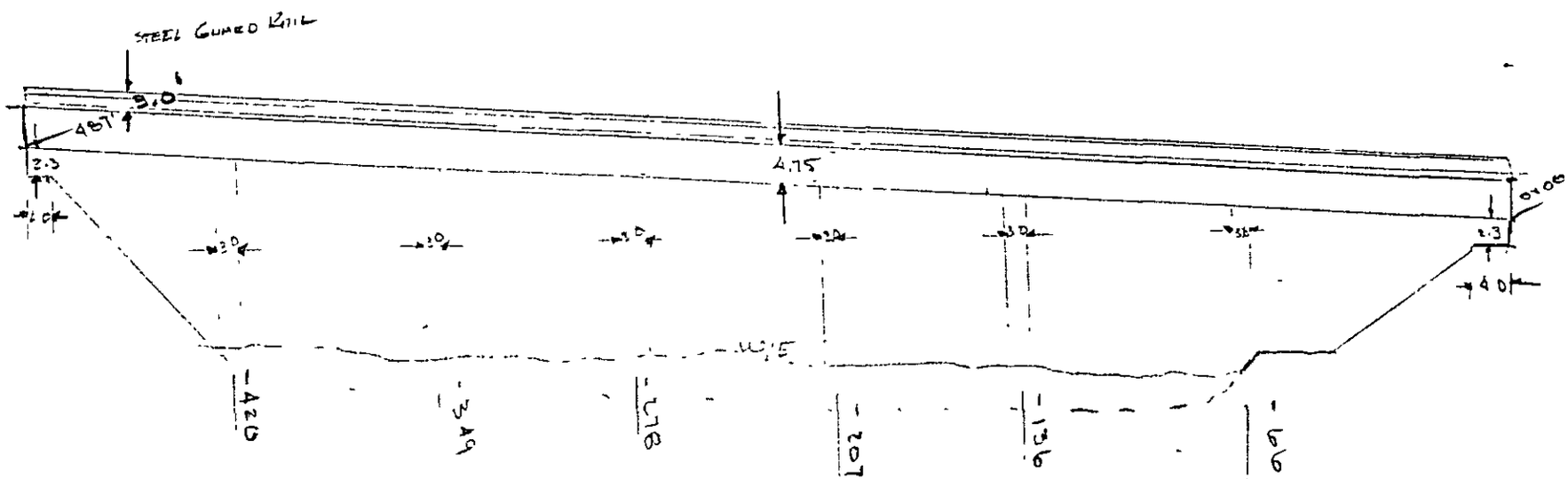
Remarks: BRIDGE OVER TITABAWASSEE RIVER ON TITABAWASSEE RD

(NOTE! HEAVY TRAFFIC & CLOSE TO RADIUS OF RD SO WE USED RIGHT BANK FOR 0+00)

Width of Piers: 3.0'	Pier Shape: SEE PROFILE SHEET	No. of Piers: 6	Area:
Water Elevation: 582.7	Length: 487'	Width of Deck: 33.5'	Skew:

FIELD SKETCH

Profile View UPSTREAM FACE ~~Plan View~~



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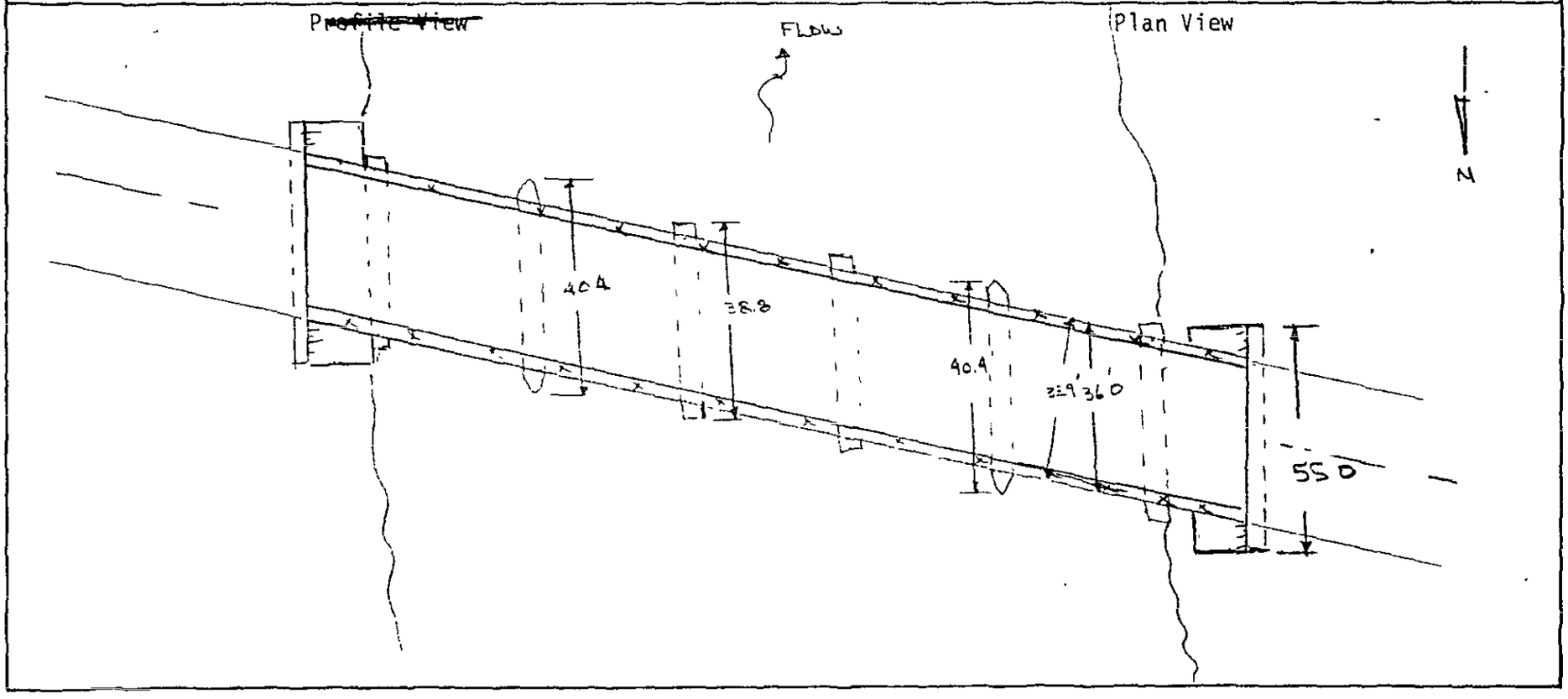
HYDRAULIC STRUCTURAL DATA

2 OF 4 SHTS

Code No. 5555-[illegible]-24

Job Name: SAGINAW TWP			By:
Date:	Feature:		Water Course: TITTABAWASSEE R.
Remarks: BRIDGE OVER TITTABAWASSEE RIVER ON TITTABAWASSEE RD.			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH



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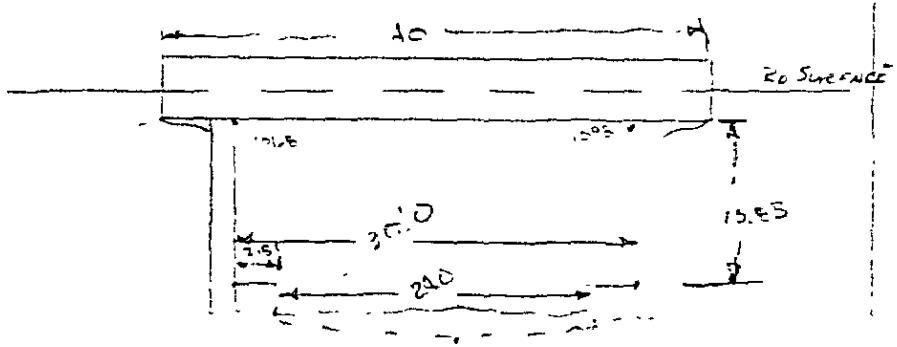
HYDRAULIC STRUCTURAL DATA

Code No. V.S. 14

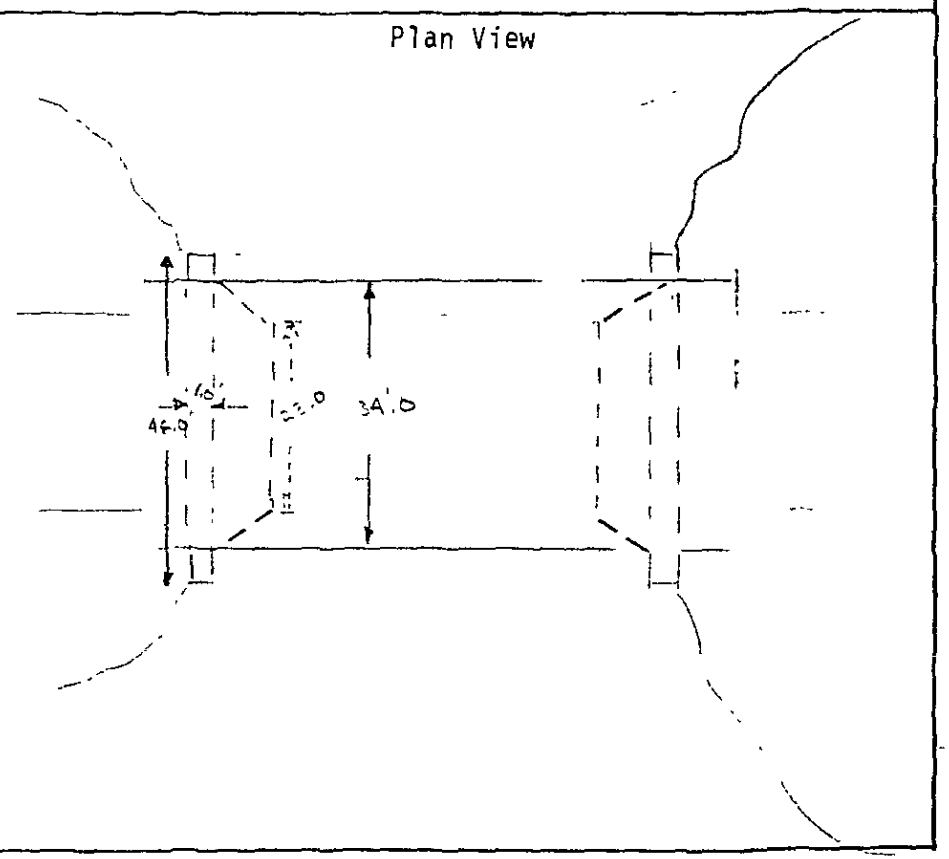
Job Name: SAGINAW TWP.		By: R. MOSES	
Date:	Feature: BRIDGE #2	Water Course: TITTABAWASSEE R.	
Remarks: STATE RD OVER TITTABAWASSEE RIVER STEEL & CONC. - SECONDARY BRIDGE			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew:

FIELD SKETCH

Profile View



Plan View



00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW TWP

3) WATERCOURSE: TITTABAWASSEE RIVER

4) DOCUMENT TYPE: SUMMARY

00BREAK00

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

MULTIPLE PROFILE ENCROACHED

TITTABAWASSEE RIVER JMA

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2.63	24.50	0.00	0.00	569.40	28600.00	590.81	.42	0.00	0.00	28389.10	21.41	1788.95
2.63	24.50	0.00	0.00	569.40	42600.00	592.79	.62	0.00	0.00	39902.79	23.39	2383.50
2.63	24.50	0.00	0.00	569.40	48800.00	593.86	.64	0.00	0.00	43797.08	24.46	2575.00
2.63	24.50	0.00	0.00	569.40	64000.00	596.57	.61	0.00	0.00	51259.71	27.17	2575.00
2.63	24.50	0.00	0.00	569.40	20900.00	590.84	.22	0.00	0.00	20735.31	21.44	1822.06
2.63	24.50	0.00	0.00	569.40	28600.00	590.80	.46	.01	.02	28600.00	21.40	296.70
2.63	24.50	0.00	0.00	569.40	42600.00	592.70	.83	.01	.10	42473.61	23.30	686.40
2.63	24.50	0.00	0.00	569.40	48800.00	593.74	.91	.01	.14	47580.81	24.34	1757.91
2.63	24.50	0.00	0.00	569.40	64000.00	596.47	.82	.01	.11	54708.92	27.07	2390.79
2.63	24.50	0.00	0.00	569.40	20900.00	590.83	.25	.00	.01	20900.00	21.43	296.70
2.64	38.00	592.80	592.70	569.40	28600.00	590.85	.44	.03	0.00	28600.00	21.45	304.00
2.64	38.00	592.80	592.70	569.40	42600.00	592.94	.76	.17	0.00	42351.39	23.54	1002.16
2.64	38.00	592.80	592.70	569.40	48800.00	593.84	.85	.05	0.00	47484.92	24.44	1767.13
2.64	38.00	592.80	592.70	569.40	64000.00	596.49	.80	0.00	0.00	55236.42	27.09	2390.31
2.64	38.00	592.80	592.70	569.40	20900.00	590.86	.23	.01	0.00	20900.00	21.46	304.00
2.64	12.20	0.00	0.00	569.40	28600.00	590.94	.36	.00	.02	28556.22	21.54	581.19
2.64	12.20	0.00	0.00	569.40	42600.00	593.17	.59	.00	.05	41402.50	23.77	2367.37
2.64	12.20	0.00	0.00	569.40	48800.00	594.11	.65	.00	.06	46273.79	24.71	2488.65
2.64	12.20	0.00	0.00	569.40	64000.00	596.63	.70	.00	.03	56124.70	27.23	2525.00
2.64	12.20	0.00	0.00	569.40	20900.00	590.91	.20	.00	.01	20870.00	21.51	574.09
2.65	12.30	0.00	0.00	569.40	28600.00	591.02	.31	.00	.02	27883.30	21.62	2253.03
2.65	12.30	0.00	0.00	569.40	42600.00	593.35	.45	.00	.04	39311.33	23.95	2525.00
2.65	12.30	0.00	0.00	569.40	48800.00	594.31	.50	.00	.05	43829.21	24.91	2525.00
2.65	12.30	0.00	0.00	569.40	64000.00	596.82	.55	.00	.04	53634.55	27.42	2525.00
2.65	12.30	0.00	0.00	569.40	20900.00	590.94	.17	.00	.01	20401.21	21.54	2240.92
2.65	24.50	0.00	0.00	569.40	28600.00	591.20	.17	.00	.04	24021.97	21.80	2397.62
2.65	24.50	0.00	0.00	569.40	42600.00	593.63	.24	.00	.06	33601.73	24.23	2525.00
2.65	24.50	0.00	0.00	569.40	48800.00	594.63	.26	.00	.07	37574.73	25.23	2525.00
2.65	24.50	0.00	0.00	569.40	64000.00	597.15	.30	.01	.08	46634.29	27.75	2525.00
2.65	24.50	0.00	0.00	569.40	20900.00	591.04	.09	.00	.02	17630.83	21.64	2393.59
2.99	1850.00	0.00	0.00	574.40	28600.00	591.57	.12	.31	.01	18987.06	17.17	1821.09
2.99	1850.00	0.00	0.00	574.40	42600.00	594.10	.16	.37	.02	26181.88	19.70	1839.11
2.99	1850.00	0.00	0.00	574.40	48800.00	595.13	.17	.38	.03	29224.13	20.73	1846.85
2.99	1850.00	0.00	0.00	574.40	64000.00	597.68	.19	.39	.03	36289.23	23.28	1869.49
2.99	1850.00	0.00	0.00	574.40	20900.00	591.25	.07	.18	.01	14035.44	16.85	1818.83
3.46	2500.00	0.00	0.00	572.60	28600.00	592.13	.10	.53	.01	18642.21	19.53	2585.02
3.46	2500.00	0.00	0.00	572.60	42600.00	594.73	.13	.58	.01	25618.15	22.13	2594.82
3.46	2500.00	0.00	0.00	572.60	48800.00	595.77	.14	.60	.01	28569.94	23.17	2598.76
3.46	2500.00	0.00	0.00	572.60	64000.00	598.33	.16	.60	.01	35449.29	25.73	2600.00
3.46	2500.00	0.00	0.00	572.60	20900.00	591.58	.06	.32	.00	13895.50	18.98	2562.05

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3.69	1250.00	0.00	0.00	571.80	28600.00	592.36	.26	.31	.08	26094.03	20.56	1520.00
3.69	1250.00	0.00	0.00	571.80	42600.00	594.96	.39	.36	.13	37979.86	23.16	1520.00
3.69	1250.00	0.00	0.00	571.80	48800.00	596.00	.45	.38	.15	43162.00	24.20	1520.00
3.69	1250.00	0.00	0.00	571.80	64000.00	598.52	.57	.40	.21	55656.91	26.72	1520.00
3.69	1250.00	0.00	0.00	571.80	20900.00	591.73	.15	.19	.05	19188.03	19.93	1520.00
3.71	99.00	0.00	0.00	571.80	28600.00	592.35	.35	.04	.05	26354.41	20.55	503.03
3.71	99.00	0.00	0.00	571.80	42600.00	594.94	.54	.06	.08	39017.51	23.14	548.31
3.71	99.00	0.00	0.00	571.80	48800.00	595.97	.62	.06	.09	44576.70	24.17	562.86
3.71	99.00	0.00	0.00	571.80	64000.00	598.48	.78	.07	.11	58136.15	26.68	782.46
3.71	99.00	0.00	0.00	571.80	20900.00	591.73	.21	.03	.03	19298.49	19.93	502.94
3.72	24.00	598.40	594.20	571.80	28600.00	592.37	.35	.01	.00	26353.81	20.57	503.03
3.72	24.00	598.40	594.20	571.80	42600.00	595.14	.53	.19	0.00	38996.03	23.34	562.82
3.72	24.00	598.40	594.20	571.80	48800.00	596.35	.59	.34	0.00	44536.00	24.55	562.88
3.72	24.00	598.40	594.20	571.80	64000.00	598.90	.74	.37	0.00	58033.76	27.10	1128.21
3.72	24.00	598.40	594.20	571.80	20900.00	591.73	.21	.01	.00	19298.49	19.93	502.94
3.73	49.00	0.00	0.00	571.80	28600.00	592.58	.21	.02	.04	25723.73	20.78	1520.00
3.73	49.00	0.00	0.00	571.80	42600.00	595.46	.30	.02	.07	37271.36	23.66	1520.00
3.73	49.00	0.00	0.00	571.80	48800.00	596.70	.34	.03	.08	42270.82	24.90	1520.00
3.73	49.00	0.00	0.00	571.80	64000.00	599.33	.43	.03	.09	54425.74	27.53	1520.00
3.73	49.00	0.00	0.00	571.80	20900.00	591.85	.13	.01	.02	18948.29	20.05	1520.00
3.88	800.00	0.00	0.00	571.70	28600.00	592.88	.09	.15	.03	18950.13	21.18	1900.00
3.88	800.00	0.00	0.00	571.70	42600.00	595.88	.12	.17	.06	25933.65	24.18	1900.00
3.88	800.00	0.00	0.00	571.70	48800.00	597.15	.12	.18	.06	28874.29	25.45	1900.00
3.88	800.00	0.00	0.00	571.70	64000.00	599.89	.14	.19	.09	35973.25	28.19	1900.00
3.88	800.00	0.00	0.00	571.70	20900.00	592.04	.06	.10	.02	14256.63	20.34	1900.00
4.45	3050.00	0.00	0.00	571.20	28600.00	593.37	.11	.50	.01	15718.87	22.17	2440.00
4.45	3050.00	0.00	0.00	571.20	42600.00	596.40	.13	.53	.01	20676.87	25.20	2440.00
4.45	3050.00	0.00	0.00	571.20	48800.00	597.68	.14	.53	.01	22698.65	26.48	2440.00
4.45	3050.00	0.00	0.00	571.20	64000.00	600.43	.15	.54	.00	27565.61	29.23	2440.00
4.45	3050.00	0.00	0.00	571.20	20900.00	592.38	.08	.35	.01	12066.40	21.18	2440.00
4.75	1600.00	0.00	0.00	572.10	28600.00	593.64	.08	.23	.01	14624.22	21.54	2656.26
4.75	1600.00	0.00	0.00	572.10	42600.00	596.68	.10	.24	.01	19283.72	24.58	2670.00
4.75	1600.00	0.00	0.00	572.10	48800.00	597.96	.10	.23	.01	21196.19	25.86	2670.00
4.75	1600.00	0.00	0.00	572.10	64000.00	600.71	.12	.24	.01	25799.12	28.61	2670.00
4.75	1600.00	0.00	0.00	572.10	20900.00	592.57	.06	.16	.01	11265.55	20.47	2645.57
5.04	1500.00	0.00	0.00	572.90	28600.00	593.85	.28	.31	.10	24937.23	20.95	1580.21
5.04	1500.00	0.00	0.00	572.90	42600.00	596.89	.34	.33	.12	34281.28	23.99	1617.61
5.04	1500.00	0.00	0.00	572.90	48800.00	598.15	.36	.33	.13	38117.20	25.25	1633.26
5.04	1500.00	0.00	0.00	572.90	64000.00	600.90	.41	.33	.15	47163.66	28.00	1740.00
5.04	1500.00	0.00	0.00	572.90	20900.00	592.73	.19	.23	.06	18810.88	19.83	1566.23

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
5.05	49.00	0.00	0.00	572.90	28600.00	594.00	.18	.02	.03	24958.23	21.10	668.70
5.05	49.00	0.00	0.00	572.90	42600.00	597.00	.27	.02	.02	36671.95	24.10	668.70
5.05	49.00	0.00	0.00	572.90	48800.00	598.25	.31	.02	.02	41821.78	25.35	668.70
5.05	49.00	0.00	0.00	572.90	64000.00	600.94	.39	.03	.00	54319.37	28.04	691.00
5.05	49.00	0.00	0.00	572.90	20900.00	592.84	.11	.01	.02	18361.51	19.94	668.70
5.05	1.00	596.70	604.20	572.90	28600.00	594.00	.18	.00	.00	24958.18	21.10	668.70
5.05	1.00	596.70	604.20	572.90	42600.00	597.00	.27	.00	.00	36671.88	24.10	668.70
5.05	1.00	596.70	604.20	572.90	48800.00	598.25	.31	.00	.00	41821.71	25.35	668.70
5.05	1.00	596.70	604.20	572.90	64000.00	600.92	.44	.00	.02	54858.93	28.02	691.00
5.05	1.00	596.70	604.20	572.90	20900.00	592.84	.11	.00	.00	18361.48	19.94	668.70
5.06	64.00	596.70	604.20	572.90	28600.00	594.02	.18	.03	.00	24954.54	21.12	668.70
5.06	64.00	596.70	604.20	572.90	42600.00	597.04	.27	.03	.00	36667.01	24.14	668.70
5.06	64.00	596.70	604.20	572.90	48800.00	598.29	.30	.04	.00	41816.45	25.39	668.70
5.06	64.00	596.70	604.20	572.90	64000.00	601.01	.44	.10	.00	54860.00	28.11	691.00
5.06	64.00	596.70	604.20	572.90	20900.00	592.85	.11	.02	.00	18359.36	19.95	668.70
5.06	1.00	0.00	0.00	572.90	28600.00	594.02	.18	.00	.00	24954.49	21.12	668.70
5.06	1.00	0.00	0.00	572.90	42600.00	597.04	.27	.00	.00	36666.94	24.14	668.70
5.06	1.00	0.00	0.00	572.90	48800.00	598.29	.30	.00	.00	41816.37	25.39	668.70
5.06	1.00	0.00	0.00	572.90	64000.00	601.08	.39	.00	.02	54303.62	28.18	691.00
5.06	1.00	0.00	0.00	572.90	20900.00	592.86	.11	.00	.00	18359.33	19.96	668.70
5.07	49.00	0.00	0.00	572.90	28600.00	594.04	.18	.02	.00	24807.85	21.14	1617.22
5.07	49.00	0.00	0.00	572.90	42600.00	597.10	.24	.02	.01	35257.41	24.20	1632.15
5.07	49.00	0.00	0.00	572.90	48800.00	598.36	.27	.02	.01	39714.68	25.46	1638.36
5.07	49.00	0.00	0.00	572.90	64000.00	601.20	.32	.03	.02	50339.22	28.30	1770.00
5.07	49.00	0.00	0.00	572.90	20900.00	592.87	.12	.01	.00	18501.56	19.97	1611.47
5.32	1400.00	0.00	0.00	569.10	28600.00	594.51	.10	.36	.02	13906.69	25.41	2224.96
5.32	1400.00	0.00	0.00	569.10	42600.00	597.65	.11	.38	.04	17707.43	28.55	2298.65
5.32	1400.00	0.00	0.00	569.10	48800.00	598.95	.11	.38	.05	19220.35	29.85	2300.00
5.32	1400.00	0.00	0.00	569.10	64000.00	601.84	.12	.38	.06	22776.08	32.74	2300.00
5.32	1400.00	0.00	0.00	569.10	20900.00	593.19	.08	.27	.01	10994.39	24.09	2202.57
6.06	3900.00	0.00	0.00	576.30	28600.00	595.31	.10	.80	.00	17559.39	19.01	2395.00
6.06	3900.00	0.00	0.00	576.30	42600.00	598.45	.11	.80	.00	23361.43	22.15	2395.00
6.06	3900.00	0.00	0.00	576.30	48800.00	599.73	.12	.79	.00	25806.57	23.43	2395.00
6.06	3900.00	0.00	0.00	576.30	64000.00	602.61	.13	.77	.00	31659.50	26.31	2395.00
6.06	3900.00	0.00	0.00	576.30	20900.00	593.84	.08	.64	.00	13742.56	17.54	2395.00
6.60	2825.00	0.00	0.00	573.90	28600.00	595.84	.03	.44	.02	10279.90	21.94	3737.90
6.60	2825.00	0.00	0.00	573.90	42600.00	598.98	.04	.43	.02	13360.73	25.08	3742.22
6.60	2825.00	0.00	0.00	573.90	48800.00	600.26	.04	.43	.02	14646.27	26.36	3743.98
6.60	2825.00	0.00	0.00	573.90	64000.00	603.14	.04	.41	.03	17714.52	29.24	3747.92
6.60	2825.00	0.00	0.00	573.90	20900.00	594.28	.03	.38	.02	8188.64	20.38	3607.65

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6.63	200.00	0.00	0.00	573.90	28600.00	595.86	.03	.02	.00	10328.84	21.96	3677.94
6.63	200.00	0.00	0.00	573.90	42600.00	599.00	.04	.02	.00	13454.27	25.10	3682.26
6.63	200.00	0.00	0.00	573.90	48800.00	600.28	.04	.02	.00	14758.83	26.38	3684.02
6.63	200.00	0.00	0.00	573.90	64000.00	603.16	.04	.02	.00	17871.75	29.26	3687.96
6.63	200.00	0.00	0.00	573.90	20900.00	594.30	.03	.02	.00	8215.47	20.40	3551.87
6.64	37.00	0.00	0.00	574.10	28600.00	595.80	.16	.01	.07	17860.77	21.70	3316.06
6.64	37.00	0.00	0.00	574.10	42600.00	598.96	.13	.01	.05	21206.35	24.86	3637.99
6.64	37.00	0.00	0.00	574.10	48800.00	600.25	.12	.01	.04	22490.50	26.15	3639.45
6.64	37.00	0.00	0.00	574.10	64000.00	603.13	.11	.01	.03	25584.56	29.03	3642.69
6.64	37.00	0.00	0.00	574.10	20900.00	594.25	.15	.01	.06	14711.37	20.15	2934.47
6.64	18.50	0.00	0.00	574.20	28600.00	595.73	.32	.01	.08	22351.94	21.53	2068.04
6.64	18.50	0.00	0.00	574.20	42600.00	598.89	.29	.01	.08	27807.53	24.69	3520.61
6.64	18.50	0.00	0.00	574.20	48800.00	600.19	.26	.01	.07	29186.79	25.99	3590.02
6.64	18.50	0.00	0.00	574.20	64000.00	603.09	.20	.01	.05	32210.06	28.89	3620.00
6.64	18.50	0.00	0.00	574.20	20900.00	594.21	.24	.01	.04	17006.70	20.01	1063.83
6.65	18.50	0.00	0.00	574.20	28600.00	595.80	.28	.01	.01	20850.81	21.60	525.94
6.65	18.50	0.00	0.00	574.20	42600.00	598.88	.34	.01	.03	29095.55	24.68	1745.89
6.65	18.50	0.00	0.00	574.20	48800.00	600.18	.30	.01	.02	30637.39	25.98	3269.87
6.65	18.50	0.00	0.00	574.20	64000.00	603.12	.18	.01	.01	30252.64	28.92	3610.30
6.65	18.50	0.00	0.00	574.20	20900.00	594.28	.19	.01	.02	15478.62	20.08	520.06
6.65	1.00	596.60	602.80	574.20	28600.00	595.84	.25	.00	.01	18672.03	21.64	526.03
6.65	1.00	596.60	602.80	574.20	42600.00	598.95	.29	.00	.02	26270.19	24.75	1886.00
6.65	1.00	596.60	602.80	574.20	48800.00	600.17	.30	.00	.00	30621.74	25.97	3269.98
6.65	1.00	596.60	602.80	574.20	64000.00	603.20	.12	.00	.02	22463.29	29.00	3610.30
6.65	1.00	596.60	602.80	574.20	20900.00	594.31	.17	.00	.01	13924.84	20.11	520.31
6.65	21.00	596.60	602.80	574.20	28600.00	595.85	.25	.01	.00	18669.89	21.65	526.05
6.65	21.00	596.60	602.80	574.20	42600.00	598.96	.29	.01	.00	26255.45	24.76	1912.68
6.65	21.00	596.60	602.80	574.20	48800.00	600.19	.30	.01	.00	30593.26	25.99	3272.02
6.65	21.00	596.60	602.80	574.20	64000.00	603.21	.12	.01	.00	22429.17	29.01	3610.30
6.65	21.00	596.60	602.80	574.20	20900.00	594.32	.17	.01	.00	13923.54	20.12	520.37
6.65	1.00	0.00	0.00	574.20	28600.00	595.84	.28	.00	.01	20842.16	21.64	526.03
6.65	1.00	0.00	0.00	574.20	42600.00	598.93	.34	.00	.03	29018.25	24.73	1843.85
6.65	1.00	0.00	0.00	574.20	48800.00	600.19	.30	.00	.00	30608.57	25.99	3272.12
6.65	1.00	0.00	0.00	574.20	64000.00	603.18	.18	.00	.03	30086.38	28.98	3610.30
6.65	1.00	0.00	0.00	574.20	20900.00	594.31	.19	.00	.01	15473.82	20.11	520.32
6.66	12.20	0.00	0.00	574.40	28600.00	595.84	.29	.01	.00	21541.25	21.44	2150.00
6.66	12.20	0.00	0.00	574.40	42600.00	599.05	.25	.01	.03	26685.68	24.65	3536.95
6.66	12.20	0.00	0.00	574.40	48800.00	600.29	.23	.01	.02	28194.85	25.89	3604.46
6.66	12.20	0.00	0.00	574.40	64000.00	603.18	.19	.00	.00	31305.05	28.78	3627.00
6.66	12.20	0.00	0.00	574.40	20900.00	594.30	.22	.01	.01	16496.16	19.90	1429.25

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
6.66	12.20	0.00	0.00	574.30	28600.00	596.02	.15	.01	.04	17657.28	21.72	3371.48
6.66	12.20	0.00	0.00	574.30	42600.00	599.23	.12	.00	.04	20983.64	24.93	3647.29
6.66	12.20	0.00	0.00	574.30	48800.00	600.44	.12	.00	.03	22391.83	26.14	3648.67
6.66	12.20	0.00	0.00	574.30	64000.00	603.29	.10	.00	.02	25580.32	28.99	3651.87
6.66	12.20	0.00	0.00	574.30	20900.00	594.40	.15	.01	.02	14605.58	20.10	2979.92
6.66	24.50	0.00	0.00	574.20	28600.00	596.18	.03	.00	.04	10233.20	21.98	3683.94
6.66	24.50	0.00	0.00	574.20	42600.00	599.35	.03	.00	.03	13445.63	25.15	3689.60
6.66	24.50	0.00	0.00	574.20	48800.00	600.55	.04	.00	.02	14831.52	26.35	3691.75
6.66	24.50	0.00	0.00	574.20	64000.00	603.38	.04	.00	.02	18077.72	29.18	3696.82
6.66	24.50	0.00	0.00	574.20	20900.00	594.56	.02	.00	.04	8125.97	20.36	3628.48
7.12	2450.00	0.00	0.00	571.40	28600.00	596.32	.05	.15	.01	16532.03	24.92	3150.00
7.12	2450.00	0.00	0.00	571.40	42600.00	599.48	.06	.14	.01	21390.10	28.08	3150.00
7.12	2450.00	0.00	0.00	571.40	48800.00	600.68	.06	.14	.01	23483.86	29.28	3150.00
7.12	2450.00	0.00	0.00	571.40	64000.00	603.50	.06	.13	.01	28361.69	32.10	3150.00
7.12	2450.00	0.00	0.00	571.40	20900.00	594.68	.05	.13	.01	13282.90	23.28	3150.00
7.69	3000.00	0.00	0.00	576.00	28600.00	596.51	.05	.18	.00	11156.65	20.51	2300.00
7.69	3000.00	0.00	0.00	576.00	42600.00	599.65	.06	.18	.00	14338.86	23.65	2300.00
7.69	3000.00	0.00	0.00	576.00	48800.00	600.85	.06	.17	.00	15711.75	24.85	2300.00
7.69	3000.00	0.00	0.00	576.00	64000.00	603.67	.07	.17	.00	18906.99	27.67	2300.00
7.69	3000.00	0.00	0.00	576.00	20900.00	594.85	.04	.17	.00	9024.58	18.85	2300.00
8.14	2400.00	0.00	0.00	579.30	28600.00	596.70	.25	.29	.10	21432.26	17.40	1665.22
8.14	2400.00	0.00	0.00	579.30	42600.00	599.82	.31	.29	.13	29612.07	20.52	1750.00
8.14	2400.00	0.00	0.00	579.30	48800.00	601.01	.33	.30	.14	33115.68	21.71	1750.00
8.14	2400.00	0.00	0.00	579.30	64000.00	603.80	.39	.29	.16	41407.70	24.50	1750.00
8.14	2400.00	0.00	0.00	579.30	20900.00	595.03	.19	.25	.07	16430.48	15.73	1619.89
8.88	3900.00	0.00	0.00	571.70	28600.00	597.43	.17	.63	.02	17194.21	25.73	2297.73
8.88	3900.00	0.00	0.00	571.70	42600.00	600.65	.18	.66	.04	22111.14	28.95	2304.13
8.88	3900.00	0.00	0.00	571.70	48800.00	601.88	.18	.67	.04	24216.57	30.18	2304.35
8.88	3900.00	0.00	0.00	571.70	64000.00	604.73	.20	.68	.06	29107.28	33.03	2304.85
8.88	3900.00	0.00	0.00	571.70	20900.00	595.63	.15	.55	.01	13934.32	23.93	2262.52
9.33	2350.00	0.00	0.00	571.00	28600.00	597.74	.20	.32	.01	18703.38	26.74	2133.26
9.33	2350.00	0.00	0.00	571.00	42600.00	600.94	.21	.32	.02	24260.54	29.94	2142.22
9.33	2350.00	0.00	0.00	571.00	48800.00	602.17	.22	.31	.02	26619.16	31.17	2145.65
9.33	2350.00	0.00	0.00	571.00	64000.00	605.01	.24	.31	.02	32107.76	34.01	2153.61
9.33	2350.00	0.00	0.00	571.00	20900.00	595.91	.18	.30	.01	15071.39	24.91	2109.47
10.16	4400.00	0.00	0.00	578.40	28600.00	598.40	.08	.50	.03	14359.02	20.00	3399.04
10.16	4400.00	0.00	0.00	578.40	42600.00	601.58	.08	.46	.04	17907.97	23.18	3441.99
10.16	4400.00	0.00	0.00	578.40	48800.00	602.81	.08	.45	.04	19437.53	24.41	3458.55
10.16	4400.00	0.00	0.00	578.40	64000.00	605.65	.08	.43	.05	23001.68	27.25	3562.99
10.16	4400.00	0.00	0.00	578.40	20900.00	596.53	.08	.50	.03	12033.79	18.13	3380.70

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
10.61	2350.00	0.00	0.00	579.00	28600.00	598.58	.13	.21	.02	18161.16	19.58	2682.58
10.61	2350.00	0.00	0.00	579.00	42600.00	601.74	.13	.19	.02	22879.91	22.74	2724.57
10.61	2350.00	0.00	0.00	579.00	48800.00	602.96	.13	.18	.02	24868.15	23.96	2740.82
10.61	2350.00	0.00	0.00	579.00	64000.00	605.79	.13	.17	.02	29456.97	26.79	2799.36
10.61	2350.00	0.00	0.00	579.00	20900.00	596.73	.12	.22	.02	14990.44	17.73	2657.89
10.99	2050.00	0.00	0.00	578.30	28600.00	598.81	.19	.26	.03	20923.86	20.51	1650.00
10.99	2050.00	0.00	0.00	578.30	42600.00	601.94	.23	.25	.05	28444.49	23.64	1650.00
10.99	2050.00	0.00	0.00	578.30	48800.00	603.15	.25	.25	.06	31631.67	24.85	1650.00
10.99	2050.00	0.00	0.00	578.30	64000.00	605.95	.29	.25	.08	39129.85	27.65	1650.00
10.99	2050.00	0.00	0.00	578.30	20900.00	596.95	.15	.24	.02	16330.85	18.65	1650.00
11.30	1600.00	0.00	0.00	578.90	28600.00	599.04	.32	.29	.06	21779.97	20.14	1642.37
11.30	1600.00	0.00	0.00	578.90	42600.00	602.19	.35	.31	.06	28778.52	23.29	1875.46
11.30	1600.00	0.00	0.00	578.90	48800.00	603.41	.36	.31	.06	31595.42	24.51	2014.38
11.30	1600.00	0.00	0.00	578.90	64000.00	606.22	.37	.31	.04	37668.26	27.32	2203.90
11.30	1600.00	0.00	0.00	578.90	20900.00	597.15	.27	.26	.06	17272.88	18.25	1627.72
11.32	149.00	0.00	0.00	579.40	28600.00	599.09	.31	.04	.00	28600.00	19.69	393.52
11.32	149.00	0.00	0.00	579.40	42600.00	602.18	.46	.05	.05	41888.90	22.78	1586.71
11.32	149.00	0.00	0.00	579.40	48800.00	603.42	.44	.05	.04	44948.81	24.02	1810.67
11.32	149.00	0.00	0.00	579.40	64000.00	606.34	.31	.04	.02	46806.86	26.94	2135.87
11.32	149.00	0.00	0.00	579.40	20900.00	597.27	.21	.04	.02	20900.00	17.87	386.00
11.33	38.00	600.80	606.00	579.40	28600.00	599.11	.31	.02	0.00	28600.00	19.71	397.19
11.33	38.00	600.80	606.00	579.40	42600.00	602.18	.46	0.00	0.00	41889.53	22.78	1586.65
11.33	38.00	600.80	606.00	579.40	48800.00	603.42	.44	0.00	0.00	44978.82	24.02	1809.02
11.33	38.00	600.80	606.00	579.40	64000.00	606.48	.30	.12	0.00	46273.87	27.08	2142.03
11.33	38.00	600.80	606.00	579.40	20900.00	597.28	.21	.01	0.00	20900.00	17.88	386.05
11.34	49.00	0.00	0.00	579.40	28600.00	599.34	.14	.01	.05	23466.50	19.94	1647.24
11.34	49.00	0.00	0.00	579.40	42600.00	602.56	.17	.01	.09	32648.01	23.16	1914.14
11.34	49.00	0.00	0.00	579.40	48800.00	603.75	.19	.01	.08	36550.38	24.35	2048.58
11.34	49.00	0.00	0.00	579.40	64000.00	606.60	.21	.01	.03	45506.67	27.20	2222.13
11.34	49.00	0.00	0.00	579.40	20900.00	597.42	.11	.01	.03	17992.16	18.02	1629.82

SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
2.628	28600.000	590.810	0.000	0.000	0.000	1788.951	0.000	24.500
2.628	42600.000	592.790	1.980	0.000	0.000	2383.499	-594.548	24.500
2.628	48800.000	593.860	1.070	0.000	0.000	2574.999	-786.048	24.500
2.628	64000.000	596.570	2.710	0.000	0.000	2574.999	-786.048	24.500
2.628	20900.000	590.840	-5.730	0.000	0.000	1822.065	-33.114	24.500
2.631	28600.000	590.796	0.000	-.014	0.000	296.704	0.000	24.500
2.631	42600.000	592.698	1.902	-.092	0.000	686.398	-389.694	24.500
2.631	48800.000	593.736	1.038	-.124	0.000	1757.907	-1461.203	24.500
2.631	64000.000	596.473	2.737	-.097	0.000	2390.788	-2094.084	24.500
2.631	20900.000	590.833	-5.641	-.007	0.000	296.704	0.000	24.500
2.640	28600.000	590.846	0.000	.050	0.000	304.000	0.000	38.000
2.640	42600.000	592.937	2.090	.239	0.000	1002.162	-698.162	38.000
2.640	48800.000	593.843	.907	.107	0.000	1767.128	-1463.128	38.000
2.640	64000.000	596.492	2.648	.019	0.000	2390.308	-2086.308	38.000
2.640	20900.000	590.856	-5.636	.024	0.000	304.000	0.000	38.000
2.643	28600.000	590.945	0.000	.098	0.000	581.191	0.000	12.200
2.643	42600.000	593.172	2.227	.235	0.000	2367.373	-1786.182	12.200
2.643	48800.000	594.114	.943	.271	0.000	2488.648	-1907.457	12.200
2.643	64000.000	596.625	2.511	.133	0.000	2524.999	-1943.808	12.200
2.643	20900.000	590.907	-5.718	.051	0.000	574.087	7.10[illegible]	12.200

2.645	28600.000	591.016	0.000	.071	0.000	2253.033	0.000	12.300
2.645	42600.000	593.345	2.330	.174	0.000	2524.999	-271.966	12.300
2.645	48800.000	594.313	.968	.199	0.000	2524.999	-271.966	12.300
2.645	64000.000	596.821	2.508	.196	0.000	2524.999	-271.966	12.300
2.645	20900.000	590.944	-5.878	.037	0.000	2240.916	12.117	12.300
2.649	28600.000	591.205	0.000	.189	0.000	2397.623	0.000	24.500
2.649	42600.000	593.632	2.427	.286	0.000	2524.999	-127.376	24.500
2.649	48800.000	594.626	.994	.312	0.000	2524.999	-127.376	24.500
2.649	64000.000	597.152	2.526	.331	0.000	2524.999	-127.376	24.500
2.649	20900.000	591.044	-6.108	.100	0.000	2393.587	4.036	24.500
2.992	28600.000	591.573	0.000	.369	0.000	1821.092	0.000	1850.000
2.992	42600.000	594.103	2.529	.471	0.000	1839.113	-18.021	1850.000
2.992	48800.000	595.128	1.025	.502	0.000	1846.846	-25.753	1850.000
2.992	64000.000	597.685	2.557	.533	0.000	1869.493	-48.401	1850.000
2.992	20900.000	591.248	-6.437	.205	0.000	1818.833	2.259	1850.000
3.456	28600.000	592.130	0.000	.556	0.000	2585.017	0.000	2500.000
3.456	42600.000	594.728	2.598	.625	0.000	2594.822	-9.805	2500.000
3.456	48800.000	595.772	1.044	.644	0.000	2598.761	-13.744	2500.000
3.456	64000.000	598.332	2.560	.647	0.000	2600.001	-14.984	2500.000
3.456	20900.000	591.582	-6.750	.334	0.000	2562.053	22.964	2500.000
3.693	28600.000	592.357	0.000	.227	0.000	1519.999	0.000	1250.000
3.693	42600.000	594.960	2.603	.232	0.000	1519.999	-.000	1250.000
3.693	48800.000	595.998	1.039	.227	0.000	1519.999	-.000	1250.000
3.693	64000.000	598.525	2.527	.193	0.000	1519.999	-.000	1250.000
3.693	20900.000	591.727	-6.798	.145	0.000	1519.999	.000	1250.000
3.711	28600.000	592.352	0.000	-.005	0.000	503.026	0.000	99.000
3.711	42600.000	594.939	2.587	-.021	0.000	548.305	-45.279	99.000
3.711	48800.000	595.972	1.033	-.026	0.000	562.863	-59.838	99.000
3.711	64000.000	598.485	2.513	-.040	0.000	782.457	-279.431	99.000
3.711	20900.000	591.726	-6.759	-.001	0.000	502.944	.082	99.000
3.717	28600.000	592.368	0.000	.015	0.000	503.027	0.000	24.000
3.717	42600.000	595.144	2.777	.206	0.000	562.817	-59.790	24.000
3.717	48800.000	596.345	1.201	.373	0.000	562.885	-59.858	24.000
3.717	64000.000	598.898	2.553	.414	0.000	1128.207	-625.180	24.000
3.717	20900.000	591.735	-7.164	.009	0.000	502.944	.083	24.000
3.725	28600.000	592.576	0.000	.208	0.000	1519.999	0.000	49.000
3.725	42600.000	595.461	2.886	.317	0.000	1519.999	-.000	49.000
3.725	48800.000	596.696	1.235	.351	0.000	1519.999	-.000	49.000
3.725	64000.000	599.334	2.637	.435	0.000	1519.999	-.000	49.000
3.725	20900.000	591.855	-7.479	.120	0.000	1519.999	.000	49.000
3.877	28600.000	592.878	0.000	.302	0.000	1899.999	0.000	800.000
3.877	42600.000	595.878	3.000	.416	0.000	1899.999	-.000	800.000
3.877	48800.000	597.153	1.275	.457	0.000	1899.999	-.000	800.000
3.877	64000.000	599.892	2.739	.559	0.000	1899.999	-.000	800.000
3.877	20900.000	592.039	-7.853	.184	0.000	1899.999	.000	800.000
4.451	28600.000	593.371	0.000	.494	0.000	2439.999	0.000	3050.000
4.451	42600.000	596.403	3.032	.525	0.000	2439.999	-.000	3050.000
4.451	48800.000	597.680	1.277	.527	0.000	2439.999	-.000	3050.000
4.451	64000.000	600.431	2.751	.538	0.000	2439.999	-.000	3050.000
4.451	20900.000	592.378	-8.053	.338	0.000	2439.999	.000	3050.000
4.754	28600.000	593.636	0.000	.265	0.000	2656.263	0.000	1600.000
4.754	42600.000	596.680	3.044	.277	0.000	2669.999	-13.736	1600.000
4.754	48800.000	597.956	1.276	.276	0.000	2669.999	-13.736	1600.000
4.754	64000.000	600.711	2.755	.281	0.000	2669.999	-13.736	1600.000
4.754	20900.000	592.566	-8.145	.188	0.000	2645.566	10.697	1600.000

5.038	28600.000	593.852	0.000	.216	0.000	1580.213	0.000	1500.000
5.038	42600.000	596.886	3.034	.206	0.000	1617.608	-37.395	1500.000
5.038	48800.000	598.154	1.268	.198	0.000	1633.258	-53.045	1500.000
5.038	64000.000	600.896	2.742	.185	0.000	1739.999	-159.786	1500.000
5.038	20900.000	592.727	-8.169	.161	0.000	1566.230	13.983	1500.000
5.046	28600.000	593.996	0.000	.144	0.000	668.700	0.000	49.000
5.046	42600.000	597.004	3.008	.118	0.000	668.700	0.000	49.000
5.046	48800.000	598.250	1.246	.096	0.000	668.700	0.000	49.000
5.046	64000.000	600.938	2.688	.042	0.000	691.000	-22.300	49.000
5.046	20900.000	592.835	-8.102	.108	0.000	668.700	0.000	49.000
5.047	28600.000	593.996	0.000	.000	0.000	668.700	0.000	1.000
5.047	42600.000	597.005	3.008	.001	0.000	668.700	0.000	1.000
5.047	48800.000	598.251	1.246	.001	0.000	668.700	0.000	1.000
5.047	64000.000	600.915	2.664	-.023	0.000	691.000	-22.300	1.000
5.047	20900.000	592.836	-8.079	.000	0.000	668.700	0.000	1.000
5.059	28600.000	594.024	0.000	.028	0.000	668.700	0.000	64.000
5.059	42600.000	597.041	3.016	.036	0.000	668.700	0.000	64.000
5.059	48800.000	598.290	1.249	.039	0.000	668.700	0.000	64.000
5.059	64000.000	601.011	2.721	.096	0.000	691.000	-22.300	64.000
5.059	20900.000	592.855	-8.157	.019	0.000	668.700	0.000	64.000
5.060	28600.000	594.025	0.000	.000	0.000	668.700	0.000	1.000
5.060	42600.000	597.041	3.016	.001	0.000	668.700	0.000	1.000
5.060	48800.000	598.291	1.249	.001	0.000	668.700	0.000	1.000
5.060	64000.000	601.081	2.791	.070	0.000	691.000	-22.300	1.000
5.060	20900.000	592.855	-8.226	.000	0.000	668.700	0.000	1.000
5.068	28600.000	594.043	0.000	.018	0.000	1617.225	0.000	49.000
5.068	42600.000	597.096	3.053	.055	0.000	1632.152	-14.928	49.000
5.068	48800.000	598.364	1.268	.074	0.000	1638.356	-21.131	49.000
5.068	64000.000	601.202	2.838	.121	0.000	1769.999	-152.774	49.000
5.068	20900.000	592.865	-8.337	.010	0.000	1611.472	5.753	49.000
5.322	28600.000	594.507	0.000	.464	0.000	2224.961	0.000	1400.000
5.322	42600.000	597.652	3.145	.556	0.000	2298.651	-73.690	1400.000
5.322	48800.000	598.948	1.296	.584	0.000	2299.999	-75.038	1400.000
5.322	64000.000	601.844	2.896	.642	0.000	2299.999	-75.038	1400.000
5.322	20900.000	593.192	-8.651	.327	0.000	2202.574	22.387	1400.000
6.061	28600.000	595.312	0.000	.804	0.000	2394.999	0.000	3900.000
6.061	42600.000	598.450	3.139	.798	0.000	2394.999	-.000	3900.000
6.061	48800.000	599.734	1.284	.786	0.000	2394.999	-.000	3900.000
6.061	64000.000	602.608	2.874	.764	0.000	2394.999	-.000	3900.000
6.061	20900.000	593.838	-8.770	.645	0.000	2394.999	.000	3900.000
6.596	28600.000	595.839	0.000	.528	0.000	3737.905	0.000	2825.000
6.596	42600.000	598.981	3.141	.531	0.000	3742.219	-4.314	2825.000
6.596	48800.000	600.262	1.282	.528	0.000	3743.979	-6.074	2825.000
6.596	64000.000	603.135	2.873	.527	0.000	3747.923	-10.019	2825.000
6.596	20900.000	594.282	-8.854	.444	0.000	3607.654	130.251	2825.000
6.634	28600.000	595.863	0.000	.023	0.000	3677.944	0.000	200.000
6.634	42600.000	599.003	3.141	.023	0.000	3682.257	-4.313	200.000
6.634	48800.000	600.285	1.281	.022	0.000	3684.016	-6.072	200.000
6.634	64000.000	603.157	2.872	.021	0.000	3687.960	-10.016	200.000
6.634	20900.000	594.302	-8.855	.020	0.000	3551.875	126.069	200.000
6.641	28600.000	595.804	0.000	-.058	0.000	3316.063	0.000	37.000
6.641	42600.000	598.963	3.158	-.041	0.000	3637.993	-321.930	37.000
6.641	48800.000	600.249	1.287	-.035	0.000	3639.454	-323.391	37.000
6.641	64000.000	603.129	2.880	-.027	0.000	3642.686	-326.623	37.000
6.641	20900.000	594.2[illegible]5	-8.884	-.056	0.000	293[illegible]71	381.592	37.000

6.644	28600.000	595.735	0.000	-.069	0.000	2068.037	0.000	18.500
6.644	42600.000	598.892	3.157	-.071	0.000	3520.610	-1452.574	18.500
6.644	48800.000	600.189	1.297	-.060	0.000	3590.018	-1521.981	18.500
6.644	64000.000	603.087	2.898	-.042	0.000	3619.999	-1551.962	18.500
6.644	20900.000	594.211	-8.876	-.035	0.000	1063.830	1004.207	18.500
6.647	28600.000	595.803	0.000	.068	0.000	525.944	0.000	18.500
6.647	42600.000	598.875	3.072	-.017	0.000	1745.894	-1219.950	18.500
6.647	48800.000	600.175	1.300	-.014	0.000	3269.872	-2743.928	18.500
6.647	64000.000	603.121	2.946	.034	0.000	3610.299	-3084.355	18.500
6.647	20900.000	594.284	-8.837	.073	0.000	520.058	5.886	18.500
6.648	28600.000	595.843	0.000	.040	0.000	526.030	0.000	1.000
6.648	42600.000	598.951	3.108	.076	0.000	1885.998	-1359.967	1.000
6.648	48800.000	600.175	1.224	-.001	0.000	3269.975	-2743.945	1.000
6.648	64000.000	603.198	3.023	.077	0.000	3610.299	-3084.269	1.000
6.648	20900.000	594.311	-8.886	.027	0.000	520.306	5.724	1.000
6.652	28600.000	595.852	0.000	.008	0.000	526.050	0.000	21.000
6.652	42600.000	598.962	3.110	.010	0.000	1912.678	-1386.628	21.000
6.652	48800.000	600.187	1.225	.012	0.000	3272.020	-2745.970	21.000
6.652	64000.000	603.207	3.020	.009	0.000	3610.299	-3084.249	21.000
6.652	20900.000	594.318	-8.889	.006	0.000	520.369	5.681	21.000
6.653	28600.000	595.837	0.000	-.014	0.000	526.035	0.000	1.000
6.653	42600.000	598.935	3.098	-.027	0.000	1843.846	-1317.812	1.000
6.653	48800.000	600.190	1.255	.003	0.000	3272.117	-2746.083	1.000
6.653	64000.000	603.179	2.990	-.027	0.000	3610.299	-3084.264	1.000
6.653	20900.000	594.308	-8.871	-.010	0.000	520.324	5.711	1.000
6.655	28600.000	595.840	0.000	.002	0.000	2150.004	0.000	12.200
6.655	42600.000	599.054	3.214	.119	0.000	3536.949	-1386.945	12.200
6.655	48800.000	600.288	1.235	.099	0.000	3604.463	-1454.459	12.200
6.655	64000.000	603.180	2.892	.001	0.000	3626.999	-1476.995	12.200
6.655	20900.000	594.299	-8.881	-.009	0.000	1429.249	720.755	12.200
6.657	28600.000	596.019	0.000	.179	0.000	3371.478	0.000	12.200
6.657	42600.000	599.228	3.209	.174	0.000	3647.294	-275.816	12.200
6.657	48800.000	600.441	1.214	.153	0.000	3648.670	-277.192	12.200
6.657	64000.000	603.290	2.849	.110	0.000	3651.866	-280.388	12.200
6.657	20900.000	594.397	-8.893	.098	0.000	2979.924	391.554	12.200
6.661	28600.000	596.184	0.000	.165	0.000	3683.942	0.000	24.500
6.661	42600.000	599.348	3.164	.120	0.000	3689.603	-5.661	24.500
6.661	48800.000	600.551	1.203	.110	0.000	3691.755	-7.812	24.500
6.661	64000.000	603.379	2.829	.089	0.000	3696.815	-12.873	24.500
6.661	20900.000	594.558	-8.822	.161	0.000	3628.478	55.464	24.500
7.121	28600.000	596.319	0.000	.136	0.000	3149.999	0.000	2450.000
7.121	42600.000	599.476	3.156	.128	0.000	3149.999	-.000	2450.000
7.121	48800.000	600.677	1.202	.127	0.000	3149.999	-.000	2450.000
7.121	64000.000	603.500	2.823	.121	0.000	3149.999	-.000	2450.000
7.121	20900.000	594.680	-8.820	.123	0.000	3149.999	.000	2450.000
7.689	28600.000	596.506	0.000	.187	0.000	2299.999	0.000	3000.000
7.689	42600.000	599.651	3.145	.175	0.000	2299.999	-.000	3000.000
7.689	48800.000	600.851	1.200	.174	0.000	2299.999	-.000	3000.000
7.689	64000.000	603.668	2.816	.167	0.000	2299.999	-.000	3000.000
7.689	20900.000	594.850	-8.818	.170	0.000	2299.999	.000	3000.000
8.144	28600.000	596.698	0.000	.192	0.000	1665.217	0.000	2400.000
8.144	42600.000	599.818	3.120	.167	0.000	1749.999	-84.782	2400.000
8.144	48800.000	601.010	1.192	.159	0.000	1749.999	-84.782	2400.000
8.144	64000.000	603.803	2.792	.135	0.000	1749.999	-84.782	2400.000
8.144	20900.000	595.031	-8.772	.180	0.000	1619.893	5.32[illegible]	2400.000

8.883	28600.000	597.434	0.000	.735	0.000	2297.728	0.000	3900.000
8.883	42600.000	600.646	3.212	.828	0.000	2304.131	-6.403	3900.000
8.883	48800.000	601.875	1.229	.865	0.000	2304.347	-6.619	3900.000
8.883	64000.000	604.728	2.853	.925	0.000	2304.847	-7.119	3900.000
8.883	20900.000	595.630	-9.098	.600	0.000	2262.523	35.204	3900.000
9.328	28600.000	597.742	0.000	.308	0.000	2133.263	0.000	2350.000
9.328	42600.000	600.944	3.202	.298	0.000	2142.220	-8.957	2350.000
9.328	48800.000	602.171	1.227	.296	0.000	2145.653	-12.390	2350.000
9.328	64000.000	605.014	2.843	.286	0.000	2153.606	-20.343	2350.000
9.328	20900.000	595.914	-9.100	.284	0.000	2109.466	23.797	2350.000
10.161	28600.000	598.396	0.000	.654	0.000	3399.040	0.000	4400.000
10.161	42600.000	601.579	3.183	.636	0.000	3441.987	-42.947	4400.000
10.161	48800.000	602.807	1.228	.636	0.000	3458.552	-59.512	4400.000
10.161	64000.000	605.645	2.838	.631	0.000	3562.990	-163.950	4400.000
10.161	20900.000	596.532	-9.113	.618	0.000	3380.704	18.336	4400.000
10.606	28600.000	598.585	0.000	.189	0.000	2682.575	0.000	2350.000
10.606	42600.000	601.742	3.157	.163	0.000	2724.570	-41.994	2350.000
10.606	48800.000	602.964	1.221	.156	0.000	2740.815	-58.240	2350.000
10.606	64000.000	605.787	2.823	.142	0.000	2799.361	-116.786	2350.000
10.606	20900.000	596.729	-9.059	.197	0.000	2657.889	24.686	2350.000
10.994	28600.000	598.809	0.000	.224	0.000	1649.999	0.000	2050.000
10.994	42600.000	601.940	3.131	.197	0.000	1649.999	-.000	2050.000
10.994	48800.000	603.152	1.212	.188	0.000	1649.999	-.000	2050.000
10.994	64000.000	605.952	2.800	.165	0.000	1649.999	-.000	2050.000
10.994	20900.000	596.951	-9.001	.223	0.000	1649.999	.000	2050.000
11.297	28600.000	599.036	0.000	.227	0.000	1642.365	0.000	1600.000
11.297	42600.000	602.186	3.151	.247	0.000	1875.462	-233.097	1600.000
11.297	48800.000	603.406	1.220	.254	0.000	2014.378	-372.013	1600.000
11.297	64000.000	606.219	2.813	.267	0.000	2203.901	-561.535	1600.000
11.297	20900.000	597.150	-9.069	.199	0.000	1627.719	14.646	1600.000
11.324	28600.000	599.089	0.000	.053	0.000	393.523	0.000	149.000
11.324	42600.000	602.183	3.094	-.004	0.000	1586.713	-1193.190	149.000
11.324	48800.000	603.417	1.235	.011	0.000	1810.669	-1417.146	149.000
11.324	64000.000	606.341	2.924	.122	0.000	2135.874	-1742.352	149.000
11.324	20900.000	597.269	-9.072	.119	0.000	385.997	7.525	149.000
11.333	28600.000	599.110	0.000	.021	0.000	397.187	0.000	38.000
11.333	42600.000	602.183	3.073	-.000	0.000	1586.653	-1189.466	38.000
11.333	48800.000	603.416	1.234	-.001	0.000	1809.025	-1411.838	38.000
11.333	64000.000	606.477	3.061	.136	0.000	2142.025	-1744.838	38.000
11.333	20900.000	597.282	-9.195	.013	0.000	386.052	11.135	38.000
11.341	28600.000	599.339	0.000	.230	0.000	1647.245	0.000	49.000
11.341	42600.000	602.564	3.225	.382	0.000	1914.144	-266.900	49.000
11.341	48800.000	603.754	1.190	.338	0.000	2048.576	-401.331	49.000
11.341	64000.000	606.597	2.843	.120	0.000	2222.133	-574.888	49.000
11.341	20900.000	597.416	-9.181	.134	0.000	1629.823	17.422	49.000

DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	2208.132	0.000
2	0.000	0.000	2241.353	33.221
3	0.000	0.000	2250.535	42.403
4	0.000	0.000	2271.651	63.520
5	0.000	0.000	2188.493	-19.639

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW TWP.

3) WATERCOURSE: UNNAMED CREEK

4) DOCUMENT TYPE: REPORT

00BREAK00

Telex 23-5793
Phone: (313) 334-9901

Johnson&Anderson,Inc.
CONSULTANTS
P. O. Box 1166 ▫ 2300 Dixie Highway ▫ Pontiac, Mich. 48056

April 14, 1977

Water Management Division
Bureau of Land & Water Management
Michigan Dept. of Natural Resources
Post Office Box 30028
Lansing, Michigan 48909

Attention: Mr. Daniel H. Morgan, Acting Chief
Flood Insurance Unit

Re: Flood Insurance Studies
Tittabawassee River and unnamed
tributary to the Tittabawassee

Ref: J&A File No. 5555-60-1

Gentlemen:

We have completed the hydraulic investigation of the Tittabawassee River and an unnamed tributary to the Tittabawassee. The study for the Tittabawassee extends from the end of the Saginaw River at Green Point to Tittabawassee Road, which is approximately 11 miles upstream from Green Point. The unnamed creek was studied from its confluence with the Tittabawassee to a point approximately 4000 feet upstream. In compliance with the Flood Insurance Study requirements, flows with recurrence intervals of 10-, 50-, 100-, and 500-years were selected for this study. The flows used in the study have been approved by the Department of Natural Resources.

Enclosed with this submittal are:

1. HEC-2 computer run, 4 flows and IPLOT for 100-year flood
2. HEC-2 computer run, 100-year flow, natural floodway for the Tittabawassee River only
3. Plan view and profile
4. Hydraulic analysis report and support data

If you have any questions, please call Thomas Baier, project manager for this study.

Sincerely,

Gerald A. Cleary

Gerald A. Cleary, P.E.
Vice President
TAB/dp
encl.
cc: File

TITTABAWASSEE RIVER TRIBUTARY

SAGINAW TOWNSHIP

#5555-60

HYDRAULIC ANALYSIS

Introduction

The stream being studied is a tributary of the Tittabawassee River, Saginaw Township, Saginaw County, Michigan. The study limits are from the Tittabawassee River to 250' upstream of the Hospital Road Bridge. The flows were computed by the SCS method and have been approved by the Michigan Department of Natural Resources. The project manager is Ronald Kowalski.

Method of Analysis

Water-surface profiles were computed through use of the COE HEC-2 step-backwater computer program. Valley sections and bridge sections used in the model were surveyed in August of 1976. Culverts and bridges which were under low flow conditions for all four flows were coded according to the "normal bridge" routine requirements. Those bridges which experienced pressure or weir flow for any of the four flows were coded according to the "special bridge" routine requirements.

The hydraulic model was developed for the 100-year flow. Valley sections upstream and downsteam of culverts or bridges were encroached to model the expansion and contraction of flow thouugh culverts or bridges. The criteria for encroachment of these sections was that outlined on pages 18-21 in the HEC Training Document No. 6, Application of the HEC-2 Bridge Routines.

Variables and Coefficients

The roughness factors (Manning's "n") were established by comparing photographs and field inspection with the photographs and descriptions found on pages 101 to 123 in Open-Channel Hydraulics, by Ven Te Chow. The time of year of flooding considered in selecting the roughness values was during the months of March and April. In general, the following range of values was used:

Description	Manning's "n"
A. Channel	
1. Muddy bottom with some weeds and rocks	.04 - .05
2. Muddy bottom with medium to dense brush, weeds and trees in channel	.07 - .09
B. Overbank	
1. Woods with light undergrowth	.08
2. Woods with medium undergrowth	.10
3. Woods with dense undergrowth	.12
4. Field with dense gress and weeds	.08

The contraction and expansion coefficients used in the study of the unnamed Tittabawassee River tributary were .3 and .5, respectively. These values were used throughout the study. References evaluated in the selection of these values were the HEC-2 Users Manual, exhibit 2, page 2, and Open-Channel Hydraulics, Ven Te Chow, pages 311 and 468.

The orifice and weir coefficients used in the HEC-2 "special bridge" routine were determined as outlined in the HEC-2 Users Manual, exhibit 2, pages 1 and 2, and Application of the HEC-2 Bridge Routines, pages 27-35.

OK

Starting Point

Profile computations began at the Tittabawassee River by the slope-area method. In the final Flood Insurance Study Report, the 10-, 50-, 100-, and 500-year Tittabawassee River elevations will be extended horizontally upstream until the corresponding profiles on the Tittabawassee River tributary are intersected. The floodway and flood plain as delineated in this submittal are based on the calculated water-surface profiles begun at the Tittabawassee River by the slope-area method. In the final Flood Insurance Study, the floodway will be based on the Tittabawassee River tributary profiles; the flood plain will reflect the influence of the Tittabawassee River.

USGS datum

General Comments

Sections 2885, 2930, 2963 and 2975 are manufactured sections based on the topographic map and on field-surveyed valley sections nearby.

The culverts in the study were clean of silt when surveyed. This would indicate the presence of relatively high velocities through the culverts. Additional sections were required upstream and downstream of the culverts to provide a more gradual velocity change between sections.

Tittabawassee River Tributary
Saginaw Twp., Saginaw County
5555-60

Original Cross Section Location

Cross Section	SECNO	Location
A	1	300' d/s of Midland Road (M-47) Bridge
B	436	Midland Road (M-47) Bridge
C	1050	615' u/s of Midland Road (M-47) Bridge
D	1960	75' d/s of First Private Road Bridge
E	2060.5	First Private Road Bridge
F	2960	Second Private Road Br dge
G	3685	175' d/s of Hospital Road Bridge
H	3907	Hospital Road Bridge
I	4150	250' u/s of Hospital Road Bridge

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY AB DATE 8/9/10 JOB DESCRIPTION SPECIAL BRIDGE COEFFS. SHEET 2 OF 2
SUBJECT JOB NO 5555-60-1

SECTION 436

$A = 103$ sf. 103.6

$P = 38 + 4.7 = 42.7$ ft 42.6

$\frac{A}{P} = R = \frac{103}{42.7} = 2.412$ $R^{4/3} = 3.229$

$L = 135$ ft.

$n = .02$

$K_p = \frac{29(.02)^2(135)}{3.229} = .485$

$K_i = .7$

$\Sigma K_{OR} = 1 + .7 + .485 = 2.185$ ✓

SECTION 2960

$A = 39$ sf

$P = 6.283$

$R = \frac{39}{6.283} = 6.21$ $R^{4/3} = 3.379$

$L = 24$ ft

$n = .02$

$K_p = \frac{29(.02)^2(24)}{3.379} = .082$

$K_i = .5$

$\Sigma K_{OR} = 1 + .5 + .082 = \underline{1.58}$

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS

BY TAB DATE 3/9/76 JOB DESCRIPTION SPECIAL BRIDGE COEFFS. SHEET 2 OF 2

SUBJECT _____ JOB NO _____

SECTION 3907

$A = 41 sf$
$P = 31 ft$

$R = \frac{41}{31} = 1.33$

$R^{4/3} = 1.46$

$n = .02$

$L = 46$

$K_o = \frac{29(.02)^2(46)}{1.46} = .37$

$K_c = .7$

$\Sigma K OR = 1 + .7 + .37 \quad 2.07$

Johnson & Anderson, Inc.
Consulting Engineers
P.O. Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRAULIC STRUCTURAL DATA

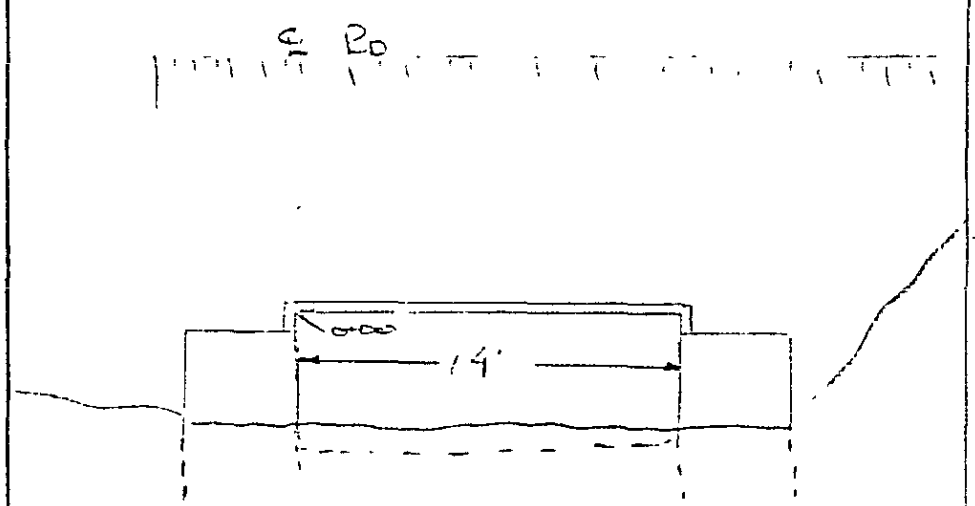
Code No. U.S. #2

Job Name: SAG TWP TRIB. OF TITABAWASSEE RIVER		By: R. MOSES
Date: 8-6-76	Feature: CONC BOX CULVERT	Water Course:
Remarks: BRIDGE UNDER M-47 (MIDLAND RD)		

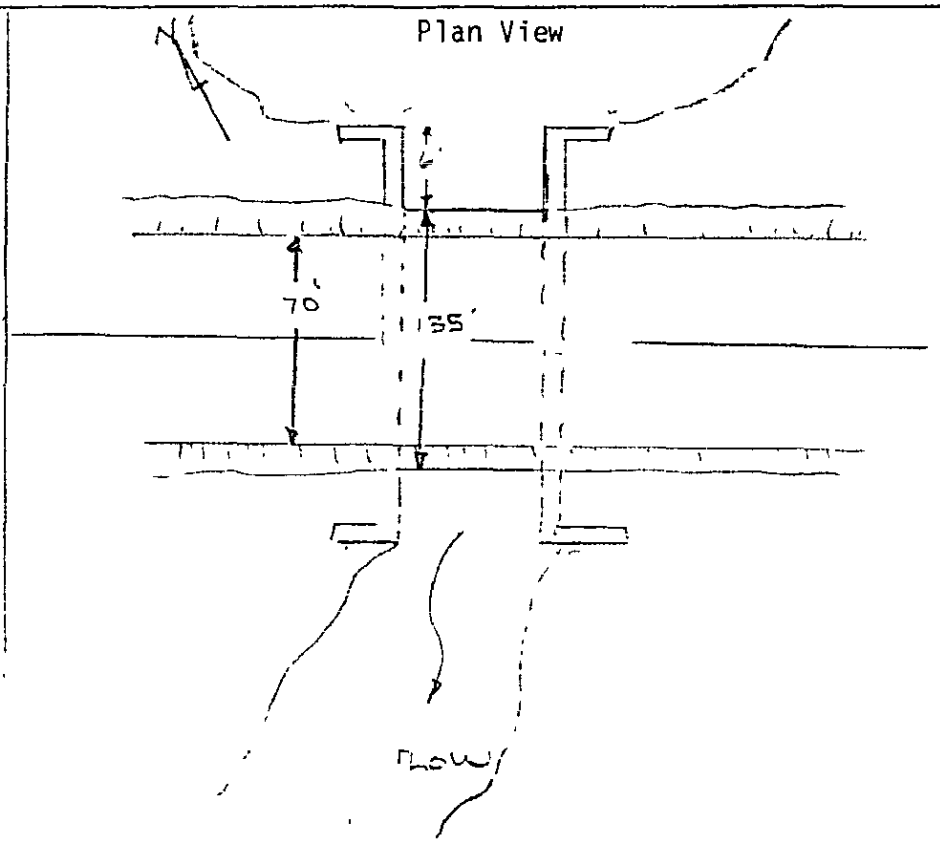
Width of Piers: —	Pier Shape: —	No. of Piers: —	Area: —
Water Elevation:	Length:	Width of Deck: —	Skew: —

FIELD SKETCH

Profile View



Plan View



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Consulting Engineers
P.O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

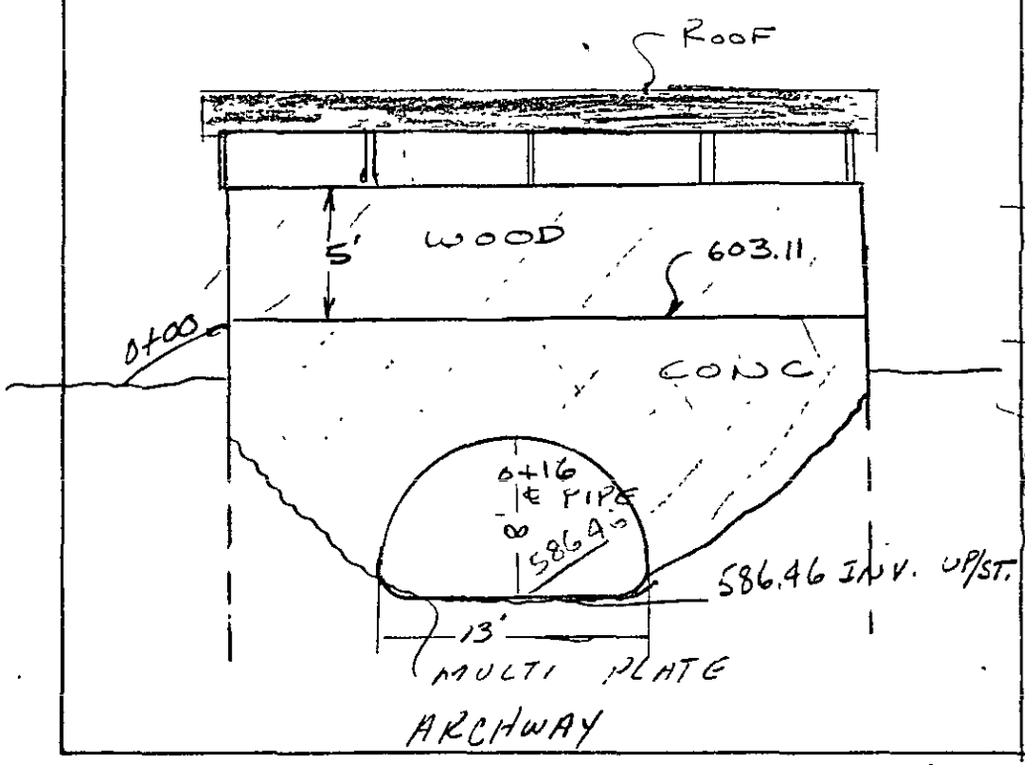
HYDRAULIC STRUCTURAL DATA BS 5 T-T

Code No. 5555-60-05

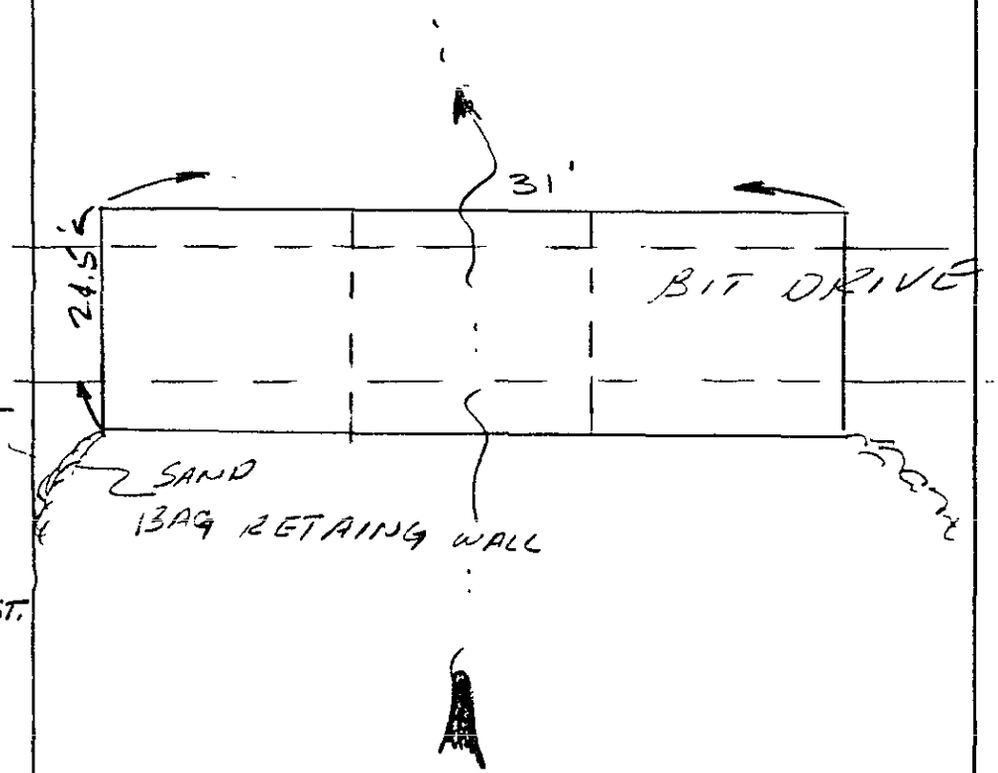
Job Name: SAGINAW TWP TITTABAWASSEE TRIB.		By: JOE KAPELCZAK	
Date: 8-9-76	Feature: MULTI PLATE ARCH.	Water Course: T.T.	
Remarks: COVERED BRIDGE			
13 D.S.F. / 14 UPS / 15 USF / 16 D/S / 17 R / 18 L			
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation: 587.21	Length:	Width of Deck:	Skew: NA.

FIELD SKETCH

Profile View



Plan View



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Consulting Engineers
P.O Box 1166 2300 Dixie Highway Pontiac, Michigan 48056

HYDRA[illegible]IC STRUCTURAL DATA

Code No. 5555-60-6

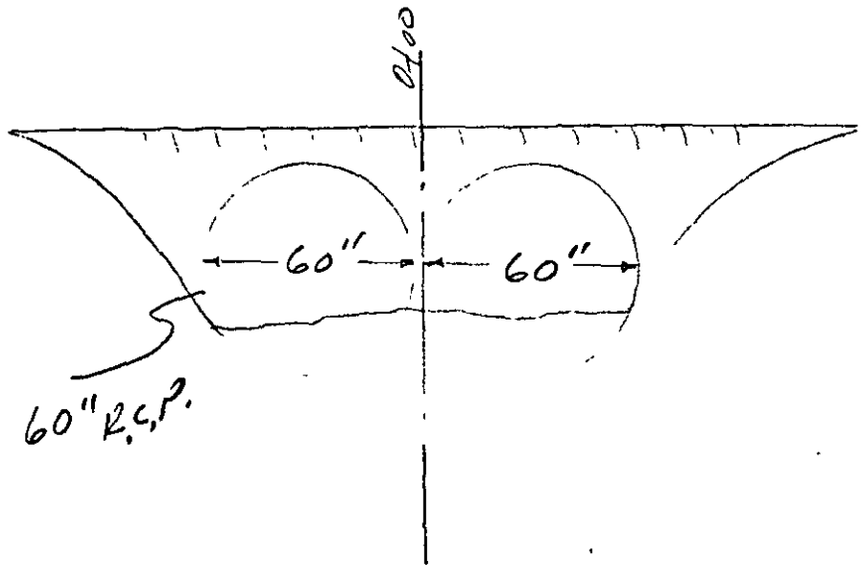
Job Name: Saginaw Twp Tripp off Titabawassee River		By: Ron Mose & Joe K
Date: 8-9-76	Feature: Conc Pipe	Water Course:
Remarks: CULVERTS AT DRIVE AS PER AERIAL PHOTO		

PHOTO LOG	19 US	20 USF	21 D/S	22 DSF	23 R	24 L

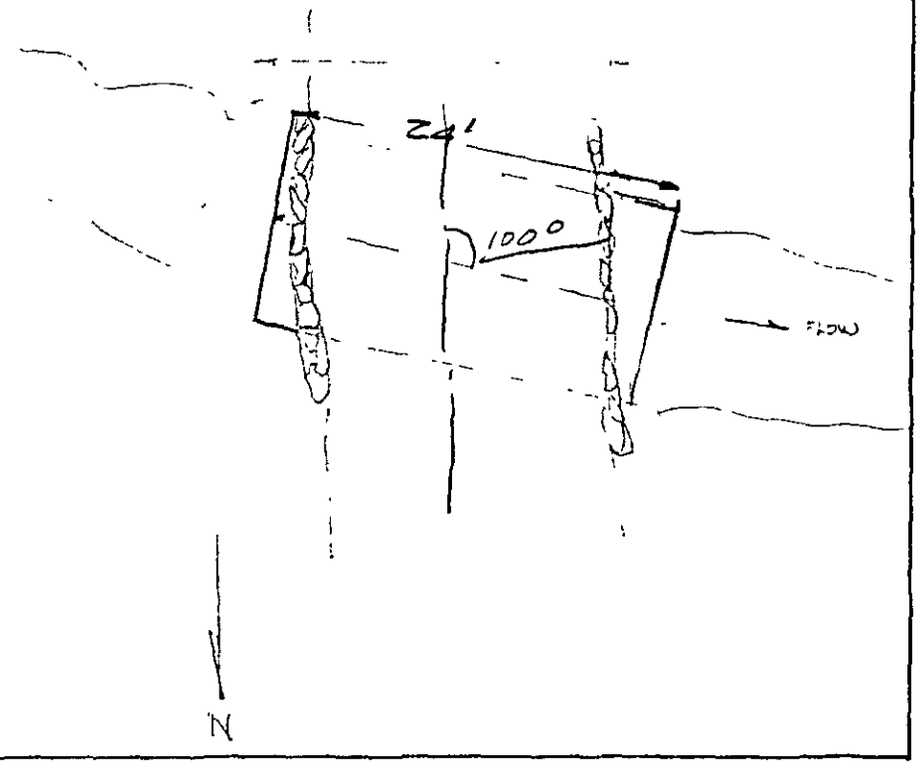
Width of Piers:	Pier Shape:	No. of Piers:	Area:
Water Elevation:	Length:	Width of Deck:	Skew: 10°

FIELD SKETCH

Profile View



Plan View



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HYDRAULIC STRUCTURAL DATA

pg (1)

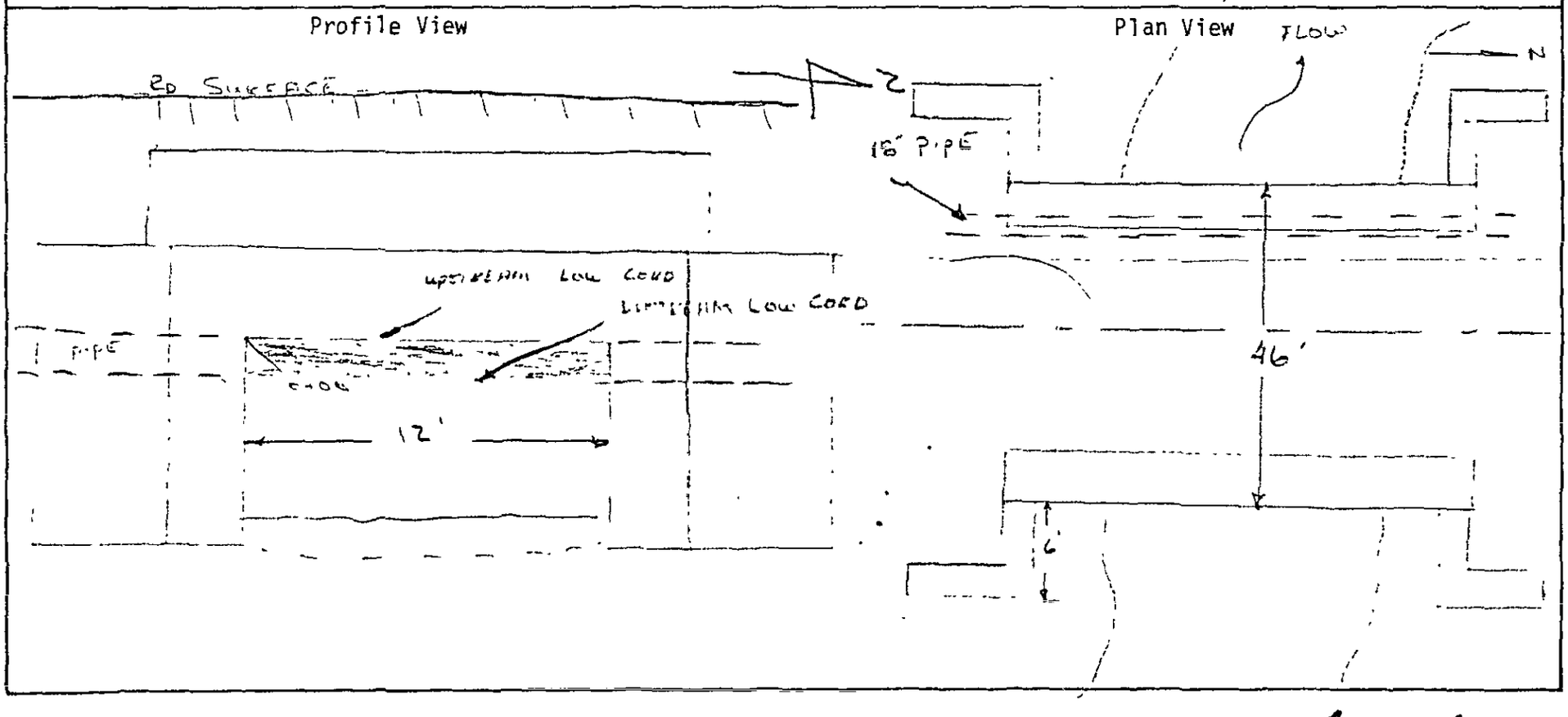
Code No. 5555-60-8

TRIBU. OF TITABAWASSEE RIVER

Job Name: SAGINAW TWP F.L.S.		By: J. BENNETT
Date: 7-29-76	Feature: CONC BOX CULVERT	Water Course: TITABAWASSEE R.
Remarks: BRIDGE UNDER HOSPITAL RD JUST NORTH OF SHATTUCK		

Width of Piers: NONE	Pier Shape: NONE	No. of Piers: NONE	Area: —
Water Elevation: 594.5	Length:	Width of Deck:	Skew: —

FIELD SKETCH



00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: SAGINAW TWP

3) WATERCOURSE: UNNAMED CREEK

4) DOCUMENT TYPE: SUMMARY

00BREAK00

3.23

NOV 17 '78

UNNAMED CREEK
SAGINAW TWP.
10-, 50-, 100-, 500-YR.

SAGJOVJ JAHDA 11/17/76 10.42.51 7600 JO

PROGRAM WILL BE ENTERED AT HEC2 (373) SCM LENGTH 146644 LCM LENGTH 0

BLOCK	ADDRESS	LENGTH
/ALPHA/	100	101
HEC2	201	11605
CARD	12007	1673
SUPPO	13702	1063
CHAP	14765	1645
DC	16632	703
FLODIS	17535	444
BLFLO	20201	1003
ADOPTS	21204	334
DNEIR	21541	1356
YCOUT	23115	122
SLAMA	23240	256
SCALE	23516	246
XSEC	23764	1264
PROF	25250	1142
/FCL.C./	26412	23
/OB.IO./	26435	137
OBNTRY=	26574	1
COMIO=	26575	44
ENDFIL=	26641	45
FECMSK=	26706	41
FLTIN=	26747	154
FLTOUT=	27123	314
ENTAP=	27437	372
FORSYS=	30031	556
FORUTL=	30607	16
GETFIT=	30625	43
INCOM=	30670	257
IPC=	31147	173
KODER=	31342	467
KRAKER=	32031	454
/HEADING/	32505	16
OUTC=	32523	1006
OUTCOM=	33531	203
RETURN=	33734	35
GOTOER=	33771	14
ALOG	34005	77
EXP	34104	100
ITOJ*	34204	52
SYSAID=	34256	1
SYS=1ST	34257	62
XTOY*	34341	55
//	34416	112226

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*****************************************
HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
*****************************************


C
1       UNNAMED TITTABAWASSEE RIVER TRIBUTARY
T2  10 YEAR FLOOD
T3  SAGINAW TOWNSHIP - J&A FILE NO. 5555-60 RONALD KOWALSKI, PROJECT MNGR.

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      -0.       2.       -0.       -0.    .002460    -0.00     -0.0      -0.     -0.000    -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1.000    -0.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

J3      1.000    10.000    11.000    12.000    14.000     8.000     4.000    -0.000    -0.000    -0.000
NC       .080      .080      .070      .300      .500    -0.000    -0.000    -0.000    -0.000    -0.000
QT      4.000   390.000   550.000   640.000   315.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1      1.000    21.000   380.000   400.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000   313.000    -0.000   477.000    -0.000    -0.000    -0.000    -0.000
GR    603.900     0.000   606.100   100.000   598.600   200.000   588.600   300.000   584.900   380.000
GR    584.600   385.000   584.000   391.000   584.400   396.000   585.100   400.000   585.700   500.000
GR    588.100   520.000   592.600   540.000   596.500   600.000   599.400   700.000   600.600   800.000
GR    599.200   900.000   597.900  1000.000   598.000  1100.000   597.500  1200.000   597.100  1300.000
GR    595.800  1400.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
NC      .080      .080      .050    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1    250.000    21.000   380.000   400.000   250.000   250.000   250.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000   370.500    -0.000   409.500    -0.000    -0.000    -0.000    -0.000
GR    603.900     0.000   606.100   100.000   598.600   200.000   588.600   300.000   584.900   380.000
GR    584.600   385.000   582.300   391.000   584.400   396.000   585.100   400.000   585.700   500.000
GR    588.100   520.000   592.600   540.000   596.500   600.000   599.400   700.000   600.600   800.000
GR    599.200   900.000   597.900  1000.000   598.000  1100.000   597.500  1200.000   597.100  1300.000
GR    595.800  1400.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
NC      .060      .060      .050    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1    275.000    21.000   380.000   400.000    25.000    25.000    25.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000   176.800    -0.000   403.300    -0.000    -0.000    -0.000    -0.000
GR    603.900     0.000   606.100   100.000   598.600   200.000   588.600   300.000   584.900   380.000
GR    584.600   385.000   582.100   391.000   584.400   396.000   585.100   400.000   585.700   500.000
GR    588.100   520.000   592.600   540.000   596.500   600.000   599.400   700.000   600.600   800.000
GR    599.200   900.000   597.900  1000.000   598.000  1100.000   597.500  1200.000   597.100  1300.000
GR    595.800  1400.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000
NC      .030      .030      .020    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000

X1    299.000    25.000  1000.000  1014.000    24.000    24.000    24.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000   600.900   600.400    -0.000
GR    606.200     0.000   605.800   100.000   605.400   200.000   605.000   300.000   604.300   400.000
GR    603.400   500.000   602.900   600.000   602.200   700.000   601.600   800.000   601.400   900.000
GR    600.900  1000.000   582.600  1000.000   581.900  1007.000   582.600  1014.000   600.400  1014.000
GR    597.100  1100.000   597.500  1200.000   602.000  1300.000   602.600  1400.000   603.400  1500.000
GR    604.300  1600.000   605.000  1700.000   605.700  1800.000   606.100  1900.000   606.600  2000.000
SB     -0.000     2.190     3.000    -0.000    14.000    -0.000   103.000    -0.000   581.900   581.900

X1    436.000    -0.000    -0.000    -0.000   137.000   137.000   137.000    -0.000    -0.000    -0.000
X3     -0.000    -0.000     1.000   589.300   600.400    -0.000    -0.000    -0.000    -0.000    -0.000
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X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.900	600.400	-0.000
BT	22.000	0.000	606.200	0.000	100.000	605.800	0.000	200.000	605.400	0.000
BT	300.000	605.000	0.000	400.000	604.300	0.000	500.000	603.400	0.000	600.000
BT	602.900	0.000	700.000	602.200	0.000	800.000	601.600	0.000	900.000	601.400
BT	0.000	1000.000	600.900	589.300	1014.000	600.400	589.300	1100.000	597.100	0.000
BT	1200.000	597.500	0.000	1300.000	602.000	-0.000	1400.000	602.600	0.000	1500.000
BT	603.400	0.000	1600.000	604.300	0.000	1700.000	605.000	0.000	1800.000	605.700
BT	0.000	1900.000	606.100	0.000	2000.000	606.600	0.000	-0.000	-0.000	-0.000
NC	.060	.060	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	440.000	21.000	340.000	400.000	4.000	4.000	4.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	372.000	-0.000	402.000	-0.000	-0.000	-0.000	-0.000
GR	603.900	0.000	606.100	100.000	596.600	200.000	588.600	300.000	584.900	380.000
GR	584.600	385.000	581.900	391.000	584.400	396.000	585.100	400.000	585.700	500.000
GR	588.100	520.000	592.600	540.000	596.500	600.000	599.400	700.000	600.600	800.000
GR	599.200	900.000	597.900	1000.000	598.000	1100.000	597.500	1200.000	597.100	1300.000
GR	595.800	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.120	.120	.090	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	450.000	21.000	340.000	400.000	10.000	10.000	10.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	363.000	-0.000	412.000	-0.000	-0.000	-0.000	-0.000
GR	603.900	0.000	606.100	100.000	598.600	200.000	588.600	300.000	582.900	380.000
GR	582.600	385.000	582.000	391.000	582.400	396.000	583.100	400.000	585.700	500.000
GR	588.100	520.000	592.600	540.000	596.500	600.000	599.400	700.000	600.600	800.000
GR	599.200	900.000	597.900	1000.000	598.000	1100.000	597.500	1200.000	597.100	1300.000
GR	595.300	1400.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1050.000	13.000	140.000	160.000	590.000	610.000	600.000	-0.000	-0.000	-0.000
GR	599.000	0.000	592.300	31.000	587.700	52.000	587.900	140.000	585.700	144.000
GR	584.900	150.000	585.300	154.000	587.700	160.000	586.400	240.000	589.100	275.000
GR	592.600	295.000	594.900	340.000	598.000	375.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.100	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	1960.000	12.000	90.000	111.000	910.000	910.000	910.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	74.800	-0.000	126.200	-0.000	-0.000	-0.000	-0.000
GR	603.600	0.000	602.600	13.000	590.300	42.000	589.100	90.000	587.700	94.000
GR	586.600	100.000	587.600	107.000	590.000	111.000	590.300	190.000	595.700	272.000
GR	598.900	290.000	602.900	315.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.100	.100	.050	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2021.000	12.000	90.000	111.000	60.000	60.000	60.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	90.300	-0.000	111.200	-0.000	-0.000	-0.000	-0.000
GR	603.600	0.000	602.600	13.000	590.300	42.000	589.100	90.000	587.700	94.000
GR	586.400	100.000	587.600	107.000	590.000	111.000	590.300	190.000	595.700	272.000
GR	598.900	290.000	602.900	315.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2028.000	-0.000	-0.000	-0.000	7.000	7.000	7.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	91.400	-0.000	109.200	-0.000	-0.000	-0.000	-0.000
X1	2035.000	14.000	208.800	222.200	7.000	7.000	7.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.700	600.800	-0.000
GR	605.900	0.000	603.700	100.000	600.700	200.000	588.800	208.800	587.200	209.500
GR	586.800	211.700	586.400	214.300	586.400	216.700	586.800	219.500	587.200	221.500
GR	588.800	222.200	600.800	231.000	602.000	331.000	604.900	431.000	-0.000	-0.000
NC	.030	.030	.033	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2036.000	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	-0.000	594.800	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.700	600.800	-0.000
BT	16.000	0.000	605.900	0.000	100.000	603.700	0.000	200.000	600.700	0.000
BT	200.000	608.100	600.700	208.800	608.100	588.800	209.500	608.100	591.200	211.700
BT	608.100	593.600	214.300	608.100	594.800	216.700	608.100	594.800	219.500	608.100
BT	593.600	221.500	603.100	591.200	222.200	608.100	588.800	231.000	608.100	600.800
BT	231.000	600.800	0.000	331.000	602.000	0.000	431.000	604.900	0.000	-0.000
X1	2060.500	14.000	208.800	222.200	24.500	24.500	24.500	-0.000	-0.000	-0.000

X2	-0.000	-0.000	-0.000	594.900	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.700	600.800	-0.000
BT	16.000	0.000	605.900	0.000	100.000	603.700	0.000	200.000	600.700	0.000
BT	200.000	608.100	600.700	208.800	608.100	600.700	209.500	608.100	591.300	211.700
BT	608.100	593.700	214.300	608.100	594.900	216.700	608.100	594.900	219.500	608.100
BT	593.700	221.500	608.100	591.300	222.200	608.100	600.800	231.000	608.100	600.800
BT	231.000	600.800	0.000	331.000	602.000	0.000	431.000	604.900	0.000	-0.000
GR	605.900	0.000	603.700	100.000	600.700	200.000	600.700	208.800	587.300	209.500
GR	586.900	211.700	586.500	214.300	586.500	216.700	586.900	219.500	587.300	221.500
GR	600.800	222.200	600.800	231.000	602.000	331.000	604.900	431.000	-0.000	-0.000
NC	.100	.100	.040	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2061.500	-0.000	-0.000	-0.000	1.000	1.000	1.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	600.700	600.800	-0.000
X1	2062.000	12.000	90.000	111.000	.500	.500	.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	93.300	-0.000	107.700	-0.000	-0.000	-0.000	-0.000
GR	603.600	0.000	602.600	18.000	590.300	42.000	589.100	90.000	587.700	94.000
GR	586.500	100.000	587.600	107.000	590.000	111.000	590.300	190.000	595.700	272.000
GR	598.900	290.000	602.900	315.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2062.500	-0.000	-0.000	-0.000	.500	.500	.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	92.800	-0.000	108.200	-0.000	-0.000	-0.000	-0.000
X1	2064.500	-0.000	-0.000	-0.000	2.000	2.000	2.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	89.800	-0.000	109.200	-0.000	-0.000	-0.000	-0.000
NC	.100	.100	.060	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2076.000	-0.000	-0.000	-0.000	11.500	11.500	11.500	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	78.400	-0.000	122.800	-0.000	-0.000	-0.000	-0.000
QT	4.000	230.000	330.000	380.000	480.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.120	.120	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2885.000	11.000	126.000	156.000	814.000	804.000	809.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	123.000	-0.000	158.000	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	593.300	122.000	590.200	126.000
GR	589.200	150.000	590.200	156.000	593.500	158.000	595.000	200.000	600.000	250.000
GR	605.000	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2930.000	11.000	126.000	156.000	45.000	45.000	45.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	133.700	-0.000	146.200	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	593.300	122.000	590.200	126.000
GR	589.400	150.000	590.200	156.000	593.500	158.000	595.000	200.000	600.000	250.000
GR	605.000	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2932.000	-0.000	-0.000	-0.000	2.000	2.000	2.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	134.200	-0.000	145.700	-0.000	-0.000	-0.000	-0.000
NC	.040	.040	.020	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2934.000	29.000	445.000	455.000	2.000	2.000	2.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	597.100	597.200	-0.000
GR	606.500	0.000	603.100	50.000	600.200	150.000	599.500	250.000	602.200	300.000
GR	598.800	350.000	598.800	350.000	593.800	442.000	591.400	445.000	590.800	445.400
GR	590.000	446.200	589.700	447.500	590.000	448.800	590.800	449.600	591.400	450.000
GR	591.500	450.000	590.900	450.400	590.100	451.200	589.800	452.500	590.100	453.800
GR	590.900	454.600	591.500	455.000	590.200	456.000	593.500	458.000	601.000	550.000
GR	601.000	550.000	605.000	650.000	606.700	700.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	1.580	3.000	-0.000	8.000	-0.000	39.300	-0.000	589.800	589.700
X1	2960.000	28.000	445.000	455.000	26.000	26.000	26.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	594.900	597.000	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	597.100	597.200	-0.000
BT	29.000	0.000	606.500	-0.000	50.000	603.100	-0.000	150.000	600.200	-0.000
BT	250.000	599.500	0.000	300.000	602.200	0.000	350.000	598.800	-0.000	350.000
BT	598.800	-0.000	445.000	597.100	597.100	445.000	597.100	591.500	445.000	597.100
BT	593.100	445.400	597.100	593.700	446.200	597.100	594.500	447.500	597.000	59[illegible].800

BT	448.800	597.000	594.500	449.600	597.000	593.700	450.000	597.000	593.100	450.000
BT	597.000	591.600	450.000	597.000	593.200	450.400	597.000	593.800	451.200	597.000
BT	594.600	452.500	597.100	594.900	453.800	597.200	594.600	454.600	597.200	593.800
BT	455.000	597.200	593.200	455.000	597.200	591.600	455.000	597.200	597.200	550.000
BT	601.000	0.000	650.000	605.000	-0.000	700.000	606.700	-0.000	-0.000	-0.000
GR	606.500	0.000	603.100	50.000	600.200	150.000	599.500	250.000	602.200	300.000
GR	598.800	350.000	598.800	350.000	597.100	445.000	591.500	445.000	590.900	445.400
GR	590.100	446.200	589.600	447.500	590.100	448.800	590.900	449.600	591.500	450.000
GR	591.600	450.000	591.000	450.400	590.200	451.200	589.900	452.500	590.200	453.800
GR	591.000	454.600	591.600	455.000	597.200	455.000	597.200	455.000	601.000	550.000
GR	601.000	550.000	605.000	650.000	606.700	700.000	-0.000	-0.000	-0.000	-0.000
NC	.120	.120	.070	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2963.000	11.000	126.000	155.000	3.000	3.000	3.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	131.000	-0.000	149.000	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	593.800	122.000	590.200	126.000
GR	589.800	150.000	590.200	156.000	593.500	158.000	595.000	200.000	600.000	250.000
GR	605.000	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	2975.000	11.000	126.000	156.000	12.000	12.000	12.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	112.000	-0.000	161.000	-0.000	-0.000	-0.000	-0.000
GR	605.000	0.000	600.000	50.000	595.000	100.000	593.800	122.000	590.200	126.000
GR	589.900	150.000	590.200	156.000	593.500	158.000	595.000	200.000	600.000	250.000
GR	605.000	300.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.080	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3685.000	16.000	262.000	274.000	705.000	715.000	710.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	239.000	-0.000	338.500	-0.000	-0.000	-0.000	-0.000
GR	608.200	0.000	606.900	62.000	607.300	162.000	606.700	204.000	596.800	239.000
GR	595.500	262.000	592.500	269.000	592.100	271.000	592.400	273.000	594.700	274.000
GR	595.500	362.000	599.500	440.000	602.500	462.000	606.400	502.000	607.200	562.000
GR	608.100	662.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3810.000	16.000	262.000	274.000	125.000	125.000	125.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	249.200	-0.000	286.200	-0.000	-0.000	-0.000	-0.000
GR	608.200	0.000	606.900	62.000	607.300	162.000	606.700	204.000	596.800	239.000
GR	595.500	262.000	593.000	269.000	593.000	271.000	593.000	273.000	594.700	274.000
GR	595.500	362.000	599.500	440.000	602.500	462.000	606.400	502.000	607.200	562.000
GR	608.100	662.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3835.000	16.000	262.000	274.000	25.000	25.000	25.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	255.500	-0.000	280.000	-0.000	-0.000	-0.000	-0.000
GR	608.200	0.000	606.900	62.000	607.300	162.000	606.700	204.000	596.800	239.000
GR	595.500	262.000	593.100	269.000	593.100	271.000	593.100	273.000	594.700	274.000
GR	595.500	362.000	599.500	440.000	602.500	462.000	606.400	502.000	607.200	562.000
GR	608.100	662.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.030	.030	.025	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3859.000	26.000	1000.000	1012.000	24.000	24.000	24.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	605.800	605.900	-0.000
GR	609.400	0.000	609.300	100.000	609.100	200.000	609.400	300.000	609.100	400.000
GR	608.800	500.000	607.800	600.000	607.100	700.000	606.200	800.000	605.600	900.000
GR	605.800	1000.000	594.000	1000.000	593.300	1005.000	593.400	1010.000	593.400	1012.000
GR	605.900	1012.000	606.600	1100.000	607.600	1200.000	608.700	1300.000	609.800	1400.000
GR	610.800	1500.000	611.700	1600.000	612.700	1700.000	614.000	1800.000	614.600	1900.000
GR	614.900	2000.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
SB	-0.000	2.060	3.000	-0.000	12.000	-0.000	41.000	-0.000	593.300	593.300
X1	3907.000	-0.000	-0.000	-0.000	48.000	48.000	48.000	-0.000	-0.000	-0.000
X2	-0.000	-0.000	1.000	528.200	605.800	-0.000	-0.000	-0.000	-0.000	-0.000
X3	10.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	604.600	604.200	-0.000
BT	24.000	0.000	609.400	0.000	100.000	609.300	0.000	200.000	609.100	0.000
BT	300.000	609.400	0.000	400.000	609.100	0.000	500.000	608.800	0.000	600.000
BT	607.800	0.000	700.000	607.100	0.000	800.000	606.200	0.000	900.000	605.600
BT	605.600	1000.000	605.800	605.800	1000.000	605.800	598.200	1012.000	605.900	598.200
BT	1012.000	605.900	605.900	1100.000	606.600	606.600	1200.000	607.600	0.000	1300.000

BT	608.700	0.000	1400.000	609.800	0.000	1500.000	610.800	0.000	1600.000	611.700
BT	0.000	1700.000	612.700	0.000	1800.000	614.000	0.000	1900.000	614.600	0.000
BT	2000.000	614.900	0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
NC	.080	.060	.080	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	3922.000	11.000	235.000	261.000	15.000	15.000	15.000	-0.000	-0.000	-0.000
X3	-0.000	-0.000	-0.000	226.000	-0.000	270.000	-0.000	-0.000	-0.000	-0.000
GR	607.900	0.000	606.300	35.000	600.900	135.000	597.000	145.000	596.700	235.000
GR	594.200	242.000	593.400	248.000	593.900	252.000	597.700	261.000	603.100	335.000
GR	608.000	449.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
X1	4150.000	11.000	235.000	261.000	228.000	228.000	228.000	-0.000	-0.000	-0.000
GR	607.900	0.000	606.300	35.000	600.900	135.000	597.000	145.000	597.500	235.000
GR	595.000	242.000	594.200	248.000	594.700	252.000	598.500	261.000	603.100	335.000
GR	608.000	449.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000
EJ	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000	-0.000

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HEC2 VERSION UPDATED JAN 1976
ERROR CORRECTIONS 01,02,03,04,05,06,07,08,09
MODIFICATIONS 52,53,54,55,56,57,58
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T1      UNNAMED TITTABAWASSEE RIVER TRIBUTARY
T2  100 YEAR FLOOD
T3  SAGINAW TOWNSHIP

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     -10.      4.        -0.       -0.     .002460    -0.00     -0.0      -0.      -0.000    -0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     3.000     1.000    -1.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000    -0.000


CCHV=     .300 CEHV=     .500
2096 WSEL NOT GIVEN,AVG OF MAX,MIN USED
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


3470 ENCROACHMENT STATIONS=     313.0     477.0  TYPE=     1  TARGET=     164.000

                A      300' D.S. OF THE MIDLAND ROAD (M-47) BRIDGE

     1.00      3.95    587.95     0.00     -0.00    588.00     .05      0.00      0.00    584.90
     640.      122.     166.      352.      101.      69.      202.      0.        0.      585.10
     0.00      1.21     2.40      1.74      .080     .070      .080     0.000   584.00    314.05
   .002439     -0.      -0.       -0.        0        0        20      0.00    162.94    477.00


3470 ENCROACHMENT STATIONS=     370.5     409.5  TYPE=     1  TARGET=      39.000

                         REPEAT OF SECTION A

   250.00      6.29    588.59     0.00      0.00    588.91     .32      .77       .13     584.90
     640.      89.      462.      89.       33.      92.      33.       2.        1.      585.10
     .02      2.70      5.05     2.70      .080     .050     .080     .050    582.30    370.50
   .004027    250.      250.      250.       2        0        1      0.00     39.00    409.50


3470 ENCROACHMENT STATIONS=     376.8     403.3  TYPE=     1  TARGET=      26.500

                         REPEAT OF SECTION A

   275.00      6.52    588.62     0.00      0.00    589.11     .49      .11       .08     584.90
     640.      50.      542.      43.       12.      93.      12.       2.        1.      585.10
     .02      4.25      5.81     4.15      .060     .050     .060     .050    582.10    376.80
   .005264    25.       25.       25.        2        0        1      0.00     26.50    403.30
```

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 600.90 ELREA= 600.40

299.00	6.62	588.52	0.00	0.00	589.35	.82	.07	.17	600.90
640.	0.	640.	0.	0.	88.	0.	2.	1.	600.40
.02	0.00	7.29	0.00	.030	.020	.030	.047	581.90	1000.00
.001591	24.	24.	24.	2	0	1	0.00	14.00	1014.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	-0.00	2.19	3.00	-0.00	14.00	-0.00	103.00	-0.00	581.90	581.90

PRESSURE FLOW

EGPRS	EGLMC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
589.83	589.35	0.00	0.	640.	103.	589.30	600.40	10.00

$(2.19)\left[\left(\frac{640}{103.6}\right)^2 / 64.4\right] = H$

$1.297 = H$

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 600.90 ELREA= 600.40

B MIDLAND ROAD (M-47) BRIDGE - CONCRETE BOX CULVERT, 14FT.

WIDE, 135FT. LONG, AND 7.4FT. HIGH, WITH WINGWALLS

PERPENDICULAR TO BARREL. NO SILT IN CULVERT.

436.00	7.26	589.16	0.00	0.00	589.83	.68	.49	0.00	600.90
640.	0.	640.	0.	0.	97.	0.	2.	1.	600.40
.02	0.00	6.61	0.00	.030	.020	.030	.039	581.90	1000.00
.001457	137.	137.	137.	2	0	1	0.00	14.00	1014.00

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

3470 ENCROACHMENT STATIONS= 378.0 402.0 TYPE= 1 TARGET= 24.000

REPEAT OF SECTION A

440.00	7.66	589.56	0.00	0.00	589.93	.38	.01	.09	584.90
640.	35.	572.	33.	9.	113.	9.	2.	1.	585.10
.02	3.82	5.05	3.73	.060	.050	.060	.039	581.90	378.00
.003097	4.	4.	4.	2	0	1	0.00	24.00	402.00

3470 ENCROACHMENT STATIONS= 368.0 412.0 TYPE= 1 TARGET= 44.000

REPEAT OF SECTION A

450.00	7.97	589.97	0.00	0.00	590.05	.07	.02	.09	582.90
640.	135.	367.	138.	90.	150.	81.	2.	1.	583.10
.03	1.70	2.45	1.71	.120	.090	.120	.040	582.00	368.00
.001508	10	10	10	2	0	1	0.00	4.00	412.00

```
                C        614" U.S. OF M-47 BRIDGE

  1050.00     5.80   590.70     0.00     0.00   590.72      .01      .65      .02   587.90
     640.      193.     124.     323.     276.      96.     403.       9.       3.   587.70
      .22      .70     1.29      .80     .120     .090     .120     .068   584.90    38.29
  .000818     590.     600.     610.        3        0        1     0.00   245.87   284.16

3470 ENCROACHMENT STATIONS=       74.8      126.2  TYPE=      1  TARGET=       51.400

                D        75' D.S. OF FIRST PRIVATE ROAD BRIDGE

  1960.00     5.55   592.15     0.00     0.00   592.46      .32     1.60      .15   589.10
     640.      102.     476.      62.      43.      94.      32.      19.       6.   590.00
      .28     2.34     5.08     1.92     .100     .060     .100     .064   586.60    74.80
  .006129     910.     910.     910.        2        0        1     0.00    51.40   126.20

3470 ENCROACHMENT STATIONS=       90.3      111.2  TYPE=      1  TARGET=       20.900

                        REPEAT OF SECTION D

  2021.00     5.99   592.39     0.00     0.00   593.04      .64      .41      .16100000.00
     640.       0.     639.       1.       0.      99.       0.      20.       6.   590.00
      .28     0.00     6.45     2.31     .100     .050     .100     .064   586.40    90.30
  .007586      60.      60.      60.        2        0        1     0.00    20.90   111.20

3470 ENCROACHMENT STATIONS=       91.8      109.2  TYPE=      1  TARGET=       17.400
  2028.00     5.97   592.37     0.00     0.00   593.19      .82      .06      .09100000.00
     640.       0.     640.       0.       0.      88.       0.      20.       6. 100000.00
      .28     0.00     7.28     0.00     .100     .050     .100     .064   586.40    91.80
  .011505       7.       7.       7.        2        0        1     0.00    17.40   109.20

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       600.70 ELREA=       600.80

  2035.00     5.87   592.27     0.00     0.00   593.47     1.20      .09      .19   588.80
     640.       0.     640.       0.       0.      73.       0.      20.       6.   588.80
      .28     0.00     8.79     0.00     .100     .050     .100     .064   586.40   208.80
  .014584       7.       7.       7.        2        0        1     0.00    13.40   224.74

NORMAL BRIDGE,NRD=16 MIN ELTRD=  600.70 MAX ELLC=  600.80

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=       600.70 ELREA=       600.80

  2036.00     5.79   592.19     0.00     0.00   593.57     1.39      .01      .09   588.80
     640.       0.     640.       0.       0.      68.       0.      20.       6.   588.80
      .28     0.00     9.44     0.00     .030     .033     .030     .064   586.40   208.80
  .009587       1.       1.       1.        2        0        1    -8.16    13.40   224.68

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

NORMAL BRIDGE,NRD=15 MIN ELTRD= 600.70 MAX ELLC= 600.80

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 600.70 ELREA= 600.80

E FIRST PRIVATE ROAD BRIDGE - 25FT. OF 8FT. X 13FT.

MULTIPLATE ARCH - ENDS FLUSH WITH CONCRETE HEADWALL

NO SILT IN CULVERT.

2060.50	5.92	592.42	0.00	0.00	593.87	1.45	.27	.03	600.70
640.	0.	640.	0.	0.	66.	0.	20.	6.	600.80
.28	0.00	9.68	0.00	.030	.033	.030	.063	586.50	209.23
.012383	25.	25.	25.	2	0	1	-2.65	12.53	221.77

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 600.70 ELREA= 600.80

2061.50	6.28	592.78	0.00	0.00	593.97	1.18	.01	.08	600.70
640.	0.	640.	0.	0.	73.	0.	20.	6.	600.80
.28	0.00	8.72	0.00	.100	.040	.100	.063	586.50	209.21
.011824	1.	1.	1.	3	0	1	0.00	12.57	221.78

3470 ENCROACHMENT STATIONS= 93.3 107.7 TYPE= 1 TARGET= 14.400

REPEAT OF SECTION D

2062.00	6.76	593.26	0.00	0.00	594.08	.82	.00	.11	100000.00
640.	0.	640.	0.	0.	88.	0.	20.	6.	100000.00
.28	0.00	7.27	0.00	.100	.040	.100	.063	586.50	93.30
.007275	1.	1.	1.	3	0	1	0.00	14.40	107.70

3470 ENCROACHMENT STATIONS= 92.8 108.2 TYPE= 1 TARGET= 15.400

REPEAT OF SECTION D

2062.50	6.93	593.43	0.00	0.00	594.12	.69	.00	.04	100000.00
640.	0.	640.	0.	0.	96.	0.	20.	6.	100000.00
.28	0.00	6.68	0.00	.100	.040	.100	.063	586.50	92.80
.005764	1.	1.	1.	2	0	1	0.00	15.40	108.20

3470 ENCROACHMENT STATIONS= 89.8 109.2 TYPE= 1 TARGET= 19.400

REPEAT OF SECTION D

2064.50	7.27	593.77	0.00	0.00	594.21	.43	.01	.08	589.10
640.	2.	638.	0.	1.	121.	0.	20.	6.	100000.00
.28	2.06	5.28	0.00	.100	.040	.100	.063	586.50	89.80
.002457	2.	2.	2.	2	0	1	0.00	19.40	109.20

poor ponding

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3470 ENCROACHMENT STATIONS=      78.4      122.8  TYPE=      1  TARGET=      44.400

                    REPEAT OF SECTION D

  2076.00      7.68    594.18      0.00      0.00    594.32       .14       .02       .09    589.10
     640.      100.      464.       76.       57.      137.       49.       20.        6.    590.00
      .28      1.74      3.39      1.56      .100      .060      .100      .063    586.50     78.40
  .001643       12.       12.       12.         2         0         1      0.00     44.40    122.80

3470 ENCROACHMENT STATIONS=     123.0      151.0  TYPE=      1  TARGET=      35.000

                    MANUFACTURED SECTION - BASED ON CONTOUR MAP

  2885.00      6.17    595.37      0.00      0.00    595.44       .07      1.10       .02    590.20
     380.        9.      367.        4.       11.      170.        7.       24.        7.    590.20
      .39       .80      2.16       .59      .120      .070      .120      .065    589.20    123.00
  .001027      814.      809.      804.         2         0         1      0.00     35.00    158.00

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

3470 ENCROACHMENT STATIONS=     133.7      146.2  TYPE=      1  TARGET=      12.500

                    REPEAT OF SECTION 2885

  2930.00      5.76    595.29      0.00      0.00    595.75       .47       .12       .20100000.00
     380.        0.      380.        0.        0.       69.        0.       24.        7. 100000.00
      .39      0.00      5.47      0.00      .120      .070      .120      .065    589.53    133.70
  .015783       45.       45.       45.         2         0         1      0.00     12.50    146.20

3470 ENCROACHMENT STATIONS=     134.2      145.7  TYPE=      1  TARGET=      11.500
  2932.00      5.75    595.28      0.00      0.00    595.83       .55       .04       .04100000.00
     380.        0.      380.        0.        0.       64.        0.       24.        7. 100000.00
      .39      0.00      5.96      0.00      .120      .070      .120      .065    589.53    134.20
  .019754        2.        2.        2.         2         0         1      0.00     11.50    145.70

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      597.10 ELREA=      597.20

  2934.00      5.38    595.08      0.00      0.00    596.05       .97       .01       .21    591.40
     380.        0.      380.        0.        0.       48.        0.       24.        7.    591.50
      .39      0.00      7.90      0.00      .040      .020      .040      .065    589.70    445.00
  .002701        2.        2.        2.         2         0         1      0.00     10.00    455.00

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
    -0.00      1.58      3.00     -0.00      8.00     -0.00     39.30     -0.00    589.80    589.70

PRESSURE AND WEIR FLOW

  EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     ELLC      ELTRD     CLASS
```

597.38 596.15 0.00 4. 373. 39. 594.90 597.00 30.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 597.10 ELREA= 597.20

F SECOND PRIVATE ROAD BRIDGE - TWO 24FT. LENGTHS OF

60 IN. CONCRETE PIPE - ENDS PROJECTING FROM BROKEN

what about skew

CONCRETE HEADWALL. NO SILT IN CULVERTS.

2960.00	6.93	596.73	0.00	0.00	597.29	.55	1.24	0.00	597.10
380.	0.	380.	0.	0.	64.	0.	24.	7.	597.20
.39	0.00	5.97	0.00	.040	.020	.040	.065	589.80	445.00
.001685	26.	26.	26.	2	0	3	0.00	10.00	455.00

3470 ENCROACHMENT STATIONS= 131.0 149.0 TYPE= 1 TARGET= 18.000

REPEAT OF SECTION 2885

2963.00	7.48	597.29	0.00	0.00	597.42	.13	.01	.13	100000.00
380.	0.	380.	0.	0.	132.	0.	24.	7.	100000.00
.39	0.00	2.88	0.00	.120	.070	.120	.065	589.82	131.00
.002863	3.	3.	3.	2	0	1	0.00	18.00	149.00

3470 ENCROACHMENT STATIONS= 119.0 161.0 TYPE= 1 TARGET= 42.000

REPEAT OF SECTION 2885

2975.00	7.52	597.42	0.00	0.00	597.46	.04	.01	.03	590.20
380.	19.	348.	12.	32.	221.	23.	24.	7.	590.20
.39	.60	1.57	.55	.120	.070	.120	.065	589.90	119.00
.000383	12.	12.	12.	2	0	1	0.00	42.00	161.00

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

3470 ENCROACHMENT STATIONS= 239.0 338.5 TYPE= 1 TARGET= 99.500

G 175' D.S. OF THE HOSPITAL ROAD BRIDGE

3685.00	5.79	597.89	0.00	0.00	597.92	.03	.46	.00	595.50
380.	39.	88.	253.	40.	54.	187.	28.	8.	594.70
.54	.97	1.63	1.36	.080	.080	.080	.067	592.10	239.00
.001298	705.	710.	715.	2	0	1	0.00	99.50	338.50

3470 ENCROACHMENT STATIONS= 249.2 286.2 TYPE= 1 TARGET= 37.000

REPEAT OF SECTION G

3810.00	5.12	598.12	0.00	0.00	598.28	.16	.30	.06	595.50

380.	70.	180.	130.	29.	52.	41.	29.	8.	594.70
.55	2.42	3.47	3.16	.080	.080	.080	.068	593.00	249.20
.005738	125.	125.	125.	2	0	1	0.00	37.00	286.20

3470 ENCROACHMENT STATIONS= 255.5 280.0 TYPE= 1 TARGET= 24.500

REPEAT OF SECTION G

3835.00	5.14	598.24	0.00	0.00	598.53	.28	.18	.06	595.50
380.	56.	236.	88.	17.	53.	21.	29.	8.	594.70
.55	3.36	4.50	4.16	.080	.080	.080	.068	593.10	255.50
.009398	25.	25.	25.	2	0	1	0.00	24.50	280.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 605.80 ELREA= 605.90

3859.00	4.86	598.16	0.00	0.00	598.87	.71	.13	.21	605.80
380.	0.	380.	0.	0.	56.	0.	29.	8.	605.90
.55	0.00	6.77	0.00	.030	.025	.030	.068	593.30	1000.00
.003496	24.	24.	24.	2	0	1	0.00	12.00	1012.00

SPECIAL BRIDGE

SS	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHO
	-0.00	2.06	3.00	-0.00	12.00	-0.00	41.00	-0.00	593.30	593.30

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	ELLC	ELTRD	CLASS
600.90	598.87	0.00	0.	380.	41.	598.20	605.80	10.00

OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 604.60 ELREA= 604.20

H HOSPITAL ROAD BRIDGE - CONCRETE BOX CULVERT, 12FT. WIDE,

46FT. LONG, AND 4.9FT HIGH, WITH WINGWALLS PERPENDICULAR

TO THE BARREL. NO SILT IN CULVERT.

3907.00	7.30	600.60	0.00	0.00	600.90	.31	2.04	0.00	605.80
380.	0.	380.	0.	0.	85.	0.	29.	8.	605.90
.55	0.00	4.45	0.00	.030	.025	.030	.067	593.30	1000.00
.001140	48.	48.	48.	2	0	1	0.00	12.00	1012.00

3470 ENCROACHMENT STATIONS= 226.0 270.0 TYPE= 1 TARGET= 44.000

REPEAT OF SECTION I

3922.00	7.55	600.95	0.00	0.00	601.00	.05	.02	.08	596.70
380.	56.	264.	40.	38.	157.	26.	29.	8.	597.70
.56	1.47	1.81	1.53	.080	.080	.060	.067	593.40	226.00
.000917	15.	15.	15.	2	0	1	0.00	4[illegible].00	270.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	FV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
I	243' U.S. OF HOSPITAL ROAD BRIDGE								
4150.00	6.89	601.09	0.00	0.00	601.10	.01	.09	.01	597.50
380.	242.	114.	23.	368.	140.	54.	31.	9.	598.50
.65	.66	.82	.43	.080	.080	.060	.068	594.20	131.44
.000219	228.	228.	228.	2	0	1	0.00	171.26	302.70

SUMMARY PRINTOUT FOR MULTIPLE PROFILES

NAW TOWNSHIP

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
1.00	0.00	0.00	0.00	584.00	390.00	587.26	.04	0.00	0.00	115.58	3.26	148.08
1.00	0.00	0.00	0.00	584.00	550.00	587.73	.05	0.00	0.00	148.48	3.73	158.10
1.00	0.00	0.00	0.00	584.00	640.00	587.95	.05	0.00	0.00	166.34	3.95	162.94
1.00	0.00	0.00	0.00	584.00	815.00	588.33	.06	0.00	0.00	198.08	4.33	164.00
250.00	250.00	0.00	0.00	582.30	390.00	587.85	.18	.66	.07	289.83	5.55	39.00
250.00	250.00	0.00	0.00	582.30	550.00	588.35	.27	.74	.11	400.68	6.05	39.00
250.00	250.00	0.00	0.00	582.30	640.00	588.59	.32	.77	.13	462.33	6.29	39.00
250.00	250.00	0.00	0.00	582.30	815.00	588.98	.42	.84	.18	581.85	6.68	39.00
275.00	25.00	0.00	0.00	582.10	390.00	587.89	.26	.08	.04	335.20	5.79	26.50
275.00	25.00	0.00	0.00	582.10	550.00	588.39	.40	.10	.07	467.96	6.29	26.50
275.00	25.00	0.00	0.00	582.10	640.00	588.62	.49	.11	.08	542.34	6.52	26.50
275.00	25.00	0.00	0.00	582.10	815.00	589.00	.67	.14	.12	686.59	6.90	26.50
299.00	24.00	0.00	0.00	581.90	390.00	587.87	.38	.04	.06	390.00	5.97	14.00
299.00	24.00	0.00	0.00	581.90	550.00	588.32	.65	.06	.12	550.00	6.42	14.00
299.00	24.00	0.00	0.00	581.90	640.00	588.52	.82	.07	.17	640.00	6.62	14.00
299.00	24.00	0.00	0.00	581.90	815.00	588.82	1.22	.10	.28	815.00	6.92	14.00
436.00	137.00	600.40	589.30	581.90	390.00	588.02	.36	.12	.01	390.00	6.12	14.00
436.00	137.00	600.40	589.30	581.90	550.00	588.59	.60	.20	.02	550.00	6.69	14.00
436.00	137.00	600.40	589.30	581.90	640.00	589.16	.68	.49	0.00	640.00	7.26	14.00
436.00	137.00	600.40	589.30	581.90	815.00	590.10	.85	.91	0.00	815.00	8.20	14.00
440.00	4.00	0.00	0.00	581.90	390.00	588.17	.25	.01	.03	353.23	6.27	24.00
440.00	4.00	0.00	0.00	581.90	550.00	588.90	.36	.01	.07	493.97	7.00	24.00
440.00	4.00	0.00	0.00	581.90	640.00	589.56	.38	.01	.09	571.52	7.66	24.00
440.00	4.00	0.00	0.00	581.90	815.00	590.67	.42	.01	.13	722.46	8.77	24.00
450.00	10.00	0.00	0.00	582.00	390.00	588.46	.04	.02	.06	228.44	6.46	44.00
450.00	10.00	0.00	0.00	582.00	550.00	589.31	.07	.02	.09	317.82	7.31	44.00
450.00	10.00	0.00	0.00	582.00	640.00	589.97	.07	.02	.09	366.73	7.97	44.00
450.00	10.00	0.00	0.00	582.00	815.00	591.12	.09	.02	.10	461.65	9.12	44.00
1050.00	600.00	0.00	0.00	584.90	390.00	589.35	.02	.85	.01	99.93	4.45	231.85
1050.00	600.00	0.00	0.00	584.90	550.00	590.15	.01	.77	.02	116.40	5.25	240.19
1050.00	600.00	0.00	0.00	584.90	640.00	590.70	.01	.65	.02	123.71	5.80	245.87
1050.00	600.00	0.00	0.00	584.90	815.00	591.73	.01	.51	.02	139.63	6.83	256.33
1960.00	910.00	0.00	0.00	586.60	390.00	591.52	.18	2.26	.08	306.00	4.92	51.40
1960.00	910.00	0.00	0.00	586.60	550.00	591.93	.27	1.90	.13	416.42	5.33	51.40
1960.00	910.00	0.00	0.00	586.60	640.00	592.15	.32	1.60	.15	476.40	5.55	51.40
1960.00	910.00	0.00	0.00	586.60	815.00	592.73	.36	1.18	.18	583.82	6.13	51.40
2021.00	60.00	0.00	0.00	586.40	390.00	591.71	.33	.26	.07	389.52	5.31	20.90
2021.00	60.00	0.00	0.00	586.40	550.00	592.16	.53	.36	.13	549.14	5.76	20.90
2021.00	60.00	0.00	0.00	586.40	640.00	592.39	.64	.41	.16	638.90	5.99	20.90
2021.00	60.00	0.00	0.00	586.40	815.00	592.93	.84	.44	.24	813.33	6.53	20.90

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2028.00	7.00	0.00	0.00	586.40	390.00	591.71	.40	.04	.04	390.00	5.31	17.40
2028.00	7.00	0.00	0.00	586.40	550.00	592.14	.66	.06	.07	550.00	5.74	17.40
2028.00	7.00	0.00	0.00	586.40	640.00	592.37	.82	.06	.09	640.00	5.97	17.40
2028.00	7.00	0.00	0.00	586.40	815.00	592.88	1.10	.08	.13	815.00	6.48	17.40
2035.00	7.00	0.00	0.00	586.40	390.00	591.68	.56	.05	.08	390.00	5.28	13.40
2035.00	7.00	0.00	0.00	586.40	550.00	592.08	.95	.08	.14	550.00	5.68	13.40
2035.00	7.00	0.00	0.00	586.40	640.00	592.27	1.20	.09	.19	640.00	5.87	13.40
2035.00	7.00	0.00	0.00	586.40	815.00	592.71	1.66	.11	.28	815.00	6.31	13.40
2036.00	1.00	600.70	600.80	586.40	390.00	591.66	.61	.01	.02	390.00	5.26	13.40
2036.00	1.00	600.70	600.80	586.40	550.00	592.02	1.08	.01	.06	550.00	5.62	13.40
2036.00	1.00	600.70	600.80	586.40	640.00	592.19	1.39	.01	.09	640.00	5.79	13.40
2036.00	1.00	600.70	600.80	586.40	815.00	592.55	2.02	.02	.18	815.00	6.15	13.40
2060.50	24.50	600.70	600.80	586.50	390.00	591.76	.67	.13	.03	390.00	5.26	12.46
2060.50	24.50	600.70	600.80	586.50	550.00	592.20	1.15	.21	.04	550.00	5.70	12.51
2060.50	24.50	600.70	600.80	586.50	640.00	592.42	1.45	.27	.03	640.00	5.92	12.53
2060.50	24.50	600.70	600.80	586.50	815.00	592.90	2.04	.36	.01	815.00	6.40	12.58
2061.50	1.00	0.00	0.00	586.50	390.00	591.82	.63	.01	.01	390.00	5.32	12.47
2061.50	1.00	0.00	0.00	586.50	550.00	592.41	.99	.01	.05	550.00	5.91	12.53
2061.50	1.00	0.00	0.00	586.50	640.00	592.78	1.18	.01	.08	640.00	6.28	12.57
2061.50	1.00	0.00	0.00	586.50	815.00	593.73	1.42	.01	.19	815.00	7.23	12.67
2062.00	.50	0.00	0.00	586.50	390.00	592.01	.48	.00	.04	390.00	5.51	14.40
2062.00	.50	0.00	0.00	586.50	550.00	592.79	.71	.00	.08	550.00	6.29	14.40
2062.00	.50	0.00	0.00	586.50	640.00	593.26	.82	.00	.11	640.00	6.76	14.40
2062.00	.50	0.00	0.00	586.50	815.00	594.32	.97	.00	.14	815.00	7.82	14.40
2062.50	.50	0.00	0.00	586.50	390.00	592.10	.42	.00	.02	390.00	5.60	15.40
2062.50	.50	0.00	0.00	586.50	550.00	592.92	.61	.00	.03	550.00	6.42	15.40
2062.50	.50	0.00	0.00	586.50	640.00	593.43	.69	.00	.04	640.00	6.93	15.40
2062.50	.50	0.00	0.00	586.50	815.00	594.53	.81	.00	.05	815.00	8.03	15.40
2064.50	2.00	0.00	0.00	586.50	390.00	592.29	.28	.01	.04	389.07	5.79	19.40
2064.50	2.00	0.00	0.00	586.50	550.00	593.22	.38	.01	.07	548.46	6.72	19.40
2064.50	2.00	0.00	0.00	586.50	640.00	593.77	.43	.01	.08	638.07	7.27	19.40
2064.50	2.00	0.00	0.00	586.50	815.00	594.94	.50	.01	.09	812.24	8.44	19.40
2076.00	11.50	0.00	0.00	586.50	390.00	592.52	.11	.02	.05	301.77	6.02	44.40
2076.00	11.50	0.00	0.00	586.50	550.00	593.57	.13	.02	.08	406.72	7.07	44.40
2076.00	11.50	0.00	0.00	586.50	640.00	594.18	.14	.02	.09	463.86	7.68	44.40
2076.00	11.50	0.00	0.00	586.50	815.00	595.42	.15	.02	.10	572.23	8.92	44.40
2885.00	809.00	0.00	0.00	589.20	230.00	593.82	.05	1.22	.02	224.37	4.62	35.00
2885.00	809.00	0.00	0.00	589.20	330.00	594.83	.07	1.17	.02	319.49	5.63	35.00
2885.00	809.00	0.00	0.00	589.20	380.00	595.37	.07	1.10	.02	366.73	6.17	35.00
2885.00	809.00	0.00	0.00	589.20	480.00	596.46	.08	.95	.02	460.90	7.26	35.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
2930.00	45.00	0.00	0.00	589.53	230.00	593.81	.32	.12	.13	230.00	4.28	12.50
2930.00	45.00	0.00	0.00	589.53	330.00	594.77	.43	.12	.18	330.00	5.24	12.50
2930.00	45.00	0.00	0.00	589.53	380.00	595.29	.47	.12	.20	380.00	5.76	12.50
2930.00	45.00	0.00	0.00	589.53	480.00	596.34	.52	.11	.22	480.00	6.82	12.50
2932.00	2.00	0.00	0.00	589.53	230.00	593.81	.37	.03	.03	230.00	4.28	11.50
2932.00	2.00	0.00	0.00	589.53	330.00	594.76	.51	.03	.04	330.00	5.24	11.50
2932.00	2.00	0.00	0.00	589.53	380.00	595.26	.55	.04	.04	380.00	5.75	11.50
2932.00	2.00	0.00	0.00	589.53	480.00	596.33	.62	.04	.05	480.00	6.80	11.50
2934.00	2.00	0.00	0.00	589.70	230.00	593.65	.72	.01	.17	230.00	3.95	10.00
2934.00	2.00	0.00	0.00	589.70	330.00	594.57	.92	.01	.21	330.00	4.87	10.00
2934.00	2.00	0.00	0.00	589.70	380.00	595.08	.97	.01	.21	380.00	5.38	10.00
2934.00	2.00	0.00	0.00	589.70	480.00	596.13	1.04	.01	.21	480.00	6.43	10.00
2960.00	26.00	597.00	594.90	589.80	230.00	593.71	.79	.09	.04	230.00	3.91	10.00
2960.00	26.00	597.00	594.90	589.80	330.00	595.71	.59	.81	0.00	330.00	5.91	10.00
2960.00	26.00	597.00	594.90	589.80	380.00	596.73	.55	1.24	0.00	380.00	6.93	10.00
2960.00	26.00	597.00	594.90	589.80	480.00	597.44	.71	.98	0.00	478.01	7.64	35.34
2963.00	3.00	0.00	0.00	589.82	230.00	594.59	.12	.01	.20	230.00	4.78	18.00
2963.00	3.00	0.00	0.00	589.82	330.00	596.32	.13	.01	.14	330.00	6.50	18.00
2963.00	3.00	0.00	0.00	589.82	380.00	597.29	.13	.01	.13	380.00	7.48	18.00
2963.00	3.00	0.00	0.00	589.82	480.00	598.16	.16	.01	.16	480.00	8.34	18.00
2975.00	12.00	0.00	0.00	589.90	230.00	594.72	.04	.02	.02	219.86	4.82	42.00
2975.00	12.00	0.00	0.00	589.90	330.00	596.45	.04	.01	.03	306.24	6.55	42.00
2975.00	12.00	0.00	0.00	589.90	380.00	597.42	.04	.01	.03	348.27	7.52	42.00
2975.00	12.00	0.00	0.00	589.90	480.00	598.32	.04	.01	.04	435.81	8.42	42.00
3685.00	710.00	0.00	0.00	592.10	230.00	595.97	.11	1.29	.04	104.54	3.87	84.78
3685.00	710.00	0.00	0.00	592.10	330.00	597.11	.05	.67	.00	92.33	5.01	99.50
3685.00	710.00	0.00	0.00	592.10	380.00	597.89	.03	.46	.00	88.04	5.79	99.50
3685.00	710.00	0.00	0.00	592.10	480.00	598.75	.03	.41	.00	96.78	6.65	99.50
3810.00	125.00	0.00	0.00	593.00	230.00	597.07	.13	1.12	.01	125.40	4.07	37.00
3810.00	125.00	0.00	0.00	593.00	330.00	597.58	.17	.53	.06	166.55	4.58	37.00
3810.00	125.00	0.00	0.00	593.00	380.00	598.12	.16	.30	.06	179.97	5.12	37.00
3810.00	125.00	0.00	0.00	593.00	480.00	598.90	.16	.21	.07	212.55	5.90	37.00
3835.00	25.00	0.00	0.00	593.10	230.00	597.24	.20	.20	.03	154.63	4.14	24.50
3835.00	25.00	0.00	0.00	593.10	330.00	597.75	.29	.23	.06	212.21	4.65	24.50
3835.00	25.00	0.00	0.00	593.10	380.00	598.24	.28	.18	.06	236.30	5.14	24.50
3835.00	25.00	0.00	0.00	593.10	480.00	598.98	.31	.15	.07	287.22	5.88	24.50
3859.00	24.00	0.00	0.00	593.30	230.00	597.24	.40	.10	.10	230.00	3.94	12.00
3859.00	24.00	0.00	0.00	593.30	330.00	597.71	.66	.14	.19	330.00	4.41	12.00
3859.00	24.00	0.00	0.00	593.30	380.00	598.16	.71	.13	.21	380.00	4.86	12.00
3859.00	24.00	0.00	0.00	593.30	480.00	598.83	.87	.13	.28	480.00	5.53	12.00

SECTION NUMBER	CHANNEL LENGTH	MIN EL OF ROADWAY	MAX EL OF LOW CHORD	MIN EL GROUND	DISCHARGE (CFS)	CWSEL	HV	HL	OLOSS	QCH	DEPTH	TOPWID
3907.00	48.00	605.80	598.20	593.30	230.00	597.39	.37	.11	.01	230.00	4.09	12.00
3907.00	48.00	605.80	598.20	593.30	330.00	599.45	.33	1.41	0.00	330.00	6.15	12.00
3907.00	48.00	605.80	598.20	593.30	380.00	600.60	.31	2.04	0.00	380.00	7.30	12.00
3907.00	48.00	605.80	598.20	593.30	480.00	602.94	.28	3.52	0.00	480.00	9.64	12.00
3922.00	15.00	0.00	0.00	593.40	230.00	597.76	.12	.05	.07	215.36	4.36	35.96
3922.00	15.00	0.00	0.00	593.40	330.00	599.82	.06	.02	.08	262.81	6.42	44.00
3922.00	15.00	0.00	0.00	593.40	380.00	600.95	.05	.02	.08	283.57	7.55	44.00
3922.00	15.00	0.00	0.00	593.40	480.00	603.26	.03	.01	.07	329.49	9.86	44.00
4150.00	228.00	0.00	0.00	594.20	230.00	598.59	.02	.69	.03	114.15	4.39	121.42
4150.00	228.00	0.00	0.00	594.20	330.00	600.06	.01	.18	.01	115.57	5.86	148.93
4150.00	228.00	0.00	0.00	594.20	380.00	601.09	.01	.09	.01	114.18	6.89	171.26
4150.00	228.00	0.00	0.00	594.20	480.00	603.33	.00	.03	.01	111.24	9.13	250.43

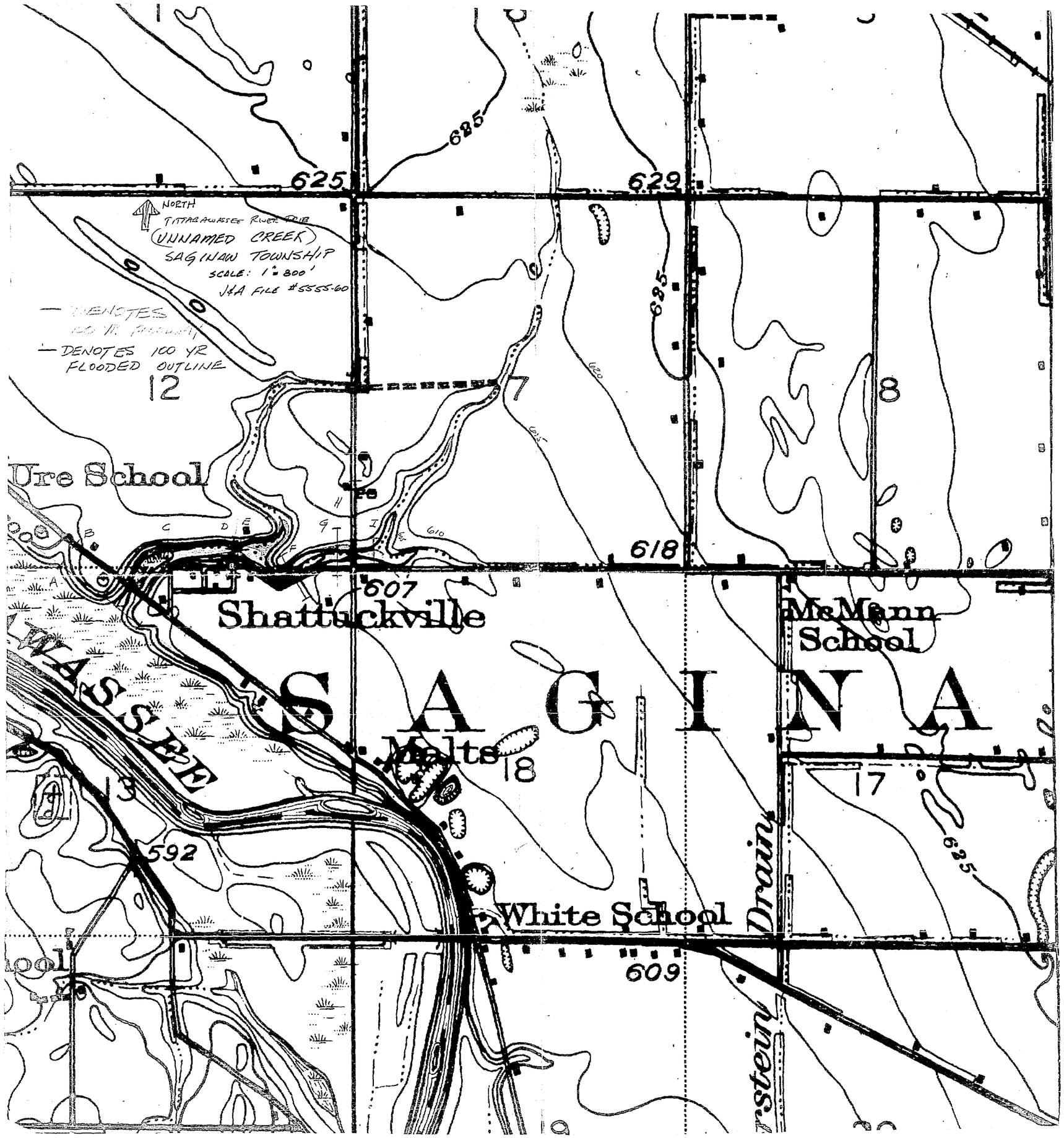
SECTION NUMBER	DISCHARGE CFS	CWSEL	CWSEL DIFF EACH Q	CWSEL DIFF EACH SECTION	CWSEL-WSELK	TOPWID	T.W. DIFF	LENGTH
1.000	390.000	587.262	0.000	0.000	0.000	148.077	0.000	-0.000
1.000	550.000	587.726	.463	0.000	0.000	158.097	-10.019	-0.000
1.000	640.000	587.950	.224	0.000	0.000	162.945	-14.867	-0.000
1.000	815.000	588.326	.376	0.000	0.000	163.999	-15.922	-0.000
250.000	390.000	587.852	0.000	.590	0.000	38.999	0.000	250.000
250.000	550.000	588.352	.499	.626	0.000	38.999	-.000	250.000
250.000	640.000	588.589	.238	.639	0.000	38.999	-.000	250.000
250.000	815.000	588.983	.393	.657	0.000	38.999	-.000	250.000
275.000	390.000	587.890	0.000	.038	0.000	26.499	0.000	25.000
275.000	550.000	588.387	.497	.035	0.000	26.499	-.000	25.000
275.000	640.000	588.619	.232	.030	0.000	26.499	-.000	25.000
275.000	815.000	589.001	.382	.018	0.000	26.499	-.000	25.000
299.000	390.000	587.870	0.000	-.021	0.000	14.000	0.000	24.000
299.000	550.000	588.322	.452	-.065	0.000	14.000	0.000	24.000
299.000	640.000	588.521	.199	-.098	0.000	14.000	0.000	24.000
299.000	815.000	588.821	.300	-.180	0.000	14.000	0.000	24.000
436.000	390.000	588.020	0.000	.150	0.000	14.000	0.000	137.000
436.000	550.000	588.589	.569	.267	0.000	14.000	0.000	137.000
436.000	640.000	589.155	.567	.634	0.000	14.000	0.000	137.000
436.000	815.000	590.096	.940	1.274	0.000	14.000	0.000	137.000
440.000	390.000	588.167	0.000	.147	0.000	23.999	0.000	4.000
440.000	550.000	588.904	.737	.315	0.000	23.999	-.000	4.000
440.000	640.000	589.556	.652	.400	0.000	23.999	-.000	4.000
440.000	815.000	590.669	1.113	.573	0.000	23.999	-.000	4.000
450.000	390.000	588.458	0.000	.291	0.000	43.999	0.000	10.000
450.000	550.000	589.309	.851	.405	0.000	43.999	-.000	10.000
450.000	640.000	589.973	.664	.417	0.000	43.999	-.000	10.000
450.000	815.000	591.122	1.150	.454	0.000	43.999	-.000	10.000
1050.000	390.000	589.347	0.000	.890	0.000	231.852	0.000	600.000
1050.000	550.000	590.150	.802	.841	0.000	240.186	-8.334	600.000
1050.000	640.000	590.703	.553	.730	0.000	245.869	-14.017	600.000
1050.000	815.000	591.730	1.027	.608	0.000	256.330	-24.478	600.000
1960.000	390.000	591.519	0.000	2.172	0.000	51.399	0.000	910.000
1960.000	550.000	591.926	.407	1.776	0.000	51.399	-.000	910.000
1960.000	640.000	592.147	.221	1.444	0.000	51.399	-.000	910.000
1960.000	815.000	592.733	.587	1.003	0.000	51.399	-.000	910.000

2021.000	390.000	591.710	0.000	.191	0.000	20.899	0.000	60.000
2021.000	550.000	592.159	.449	.234	0.000	20.899	-.000	60.000
2021.000	640.000	592.391	.232	.245	0.000	20.899	-.000	60.000
2021.000	815.000	592.932	.540	.198	0.000	20.899	-.000	60.000
2028.000	390.000	591.709	0.000	-.001	0.000	17.399	0.000	7.000
2028.000	550.000	592.145	.436	-.015	0.000	17.399	-.000	7.000
2028.000	640.000	592.367	.222	-.025	0.000	17.399	-.000	7.000
2028.000	815.000	592.881	.514	-.051	0.000	17.399	-.000	7.000
2035.000	390.000	591.679	0.000	-.030	0.000	13.400	0.000	7.000
2035.000	550.000	592.076	.397	-.069	0.000	13.400	0.000	7.000
2035.000	640.000	592.269	.193	-.093	0.000	13.400	0.000	7.000
2035.000	815.000	592.714	.445	-.167	0.000	13.400	0.000	7.000
2036.000	390.000	591.662	0.000	-.017	0.000	13.400	0.000	1.000
2036.000	550.000	592.024	.362	-.052	0.000	13.400	0.000	1.000
2036.000	640.000	592.188	.164	-.081	0.000	13.400	0.000	1.000
2036.000	815.000	592.551	.364	-.162	0.000	13.400	0.000	1.000
2060.500	390.000	591.760	0.000	.098	0.000	12.464	0.000	24.500
2060.500	550.000	592.200	.440	.176	0.000	12.510	-.046	24.500
2060.500	640.000	592.419	.219	.232	0.000	12.533	-.069	24.500
2060.500	815.000	592.901	.482	.350	0.000	12.583	-.119	24.500
2061.500	390.000	591.816	0.000	.056	0.000	12.470	0.000	1.000
2061.500	550.000	592.413	.597	.213	0.000	12.533	-.063	1.000
2061.500	640.000	592.785	.371	.365	0.000	12.571	-.101	1.000
2061.500	815.000	593.730	.946	.829	0.000	12.669	-.199	1.000
2062.000	390.000	592.013	0.000	.197	0.000	14.399	0.000	.500
2062.000	550.000	592.786	.773	.372	0.000	14.399	-.000	.500
2062.000	640.000	593.258	.472	.473	0.000	14.399	-.000	.500
2062.000	815.000	594.324	1.066	.593	0.000	14.399	-.000	.500
2062.500	390.000	592.098	0.000	.086	0.000	15.399	0.000	.500
2062.500	550.000	592.923	.825	.138	0.000	15.399	-.000	.500
2062.500	640.000	593.428	.505	.170	0.000	15.399	-.000	.500
2062.500	815.000	594.528	1.100	.204	0.000	15.399	-.000	.500
2064.500	390.000	592.286	0.000	.188	0.000	19.399	0.000	2.000
2064.500	550.000	593.219	.932	.295	0.000	19.399	-.000	2.000
2064.500	640.000	593.774	.556	.346	0.000	19.399	-.000	2.000
2064.500	815.000	594.943	1.168	.415	0.000	19.399	-.000	2.000
2076.000	390.000	592.524	0.000	.237	0.000	44.399	0.000	11.500
2076.000	550.000	593.569	1.045	.350	0.000	44.399	-.000	11.500
2076.000	640.000	594.176	.607	.401	0.000	44.399	-.000	11.500
2076.000	815.000	595.416	1.241	.474	0.000	44.399	-.000	11.500
2885.000	230.000	593.820	0.000	1.297	0.000	34.999	0.000	809.000
2885.000	330.000	594.827	1.006	1.258	0.000	34.999	-.000	809.000
2885.000	380.000	595.369	.543	1.193	0.000	34.999	-.000	809.000
2885.000	480.000	596.461	1.092	1.044	0.000	34.999	-.000	809.000
2930.000	230.000	593.803	0.000	-.012	0.000	12.499	0.000	45.000
2930.000	330.000	594.763	.960	-.058	0.000	12.499	-.000	45.000
2930.000	380.000	595.289	.521	-.080	0.000	12.499	-.000	45.000
2930.000	480.000	596.343	1.054	-.118	0.000	12.499	-.000	45.000
2932.000	230.000	593.810	0.000	.002	0.000	11.499	0.000	2.000
2932.000	330.000	594.764	.953	-.005	0.000	11.499	-.000	2.000
2932.000	380.000	595.281	.517	-.008	0.000	11.499	-.000	2.000
2932.000	480.000	596.329	1.048	-.013	0.000	11.499	-.000	2.000
2934.000	230.000	593.647	0.000	-.163	0.000	10.000	0.000	2.000

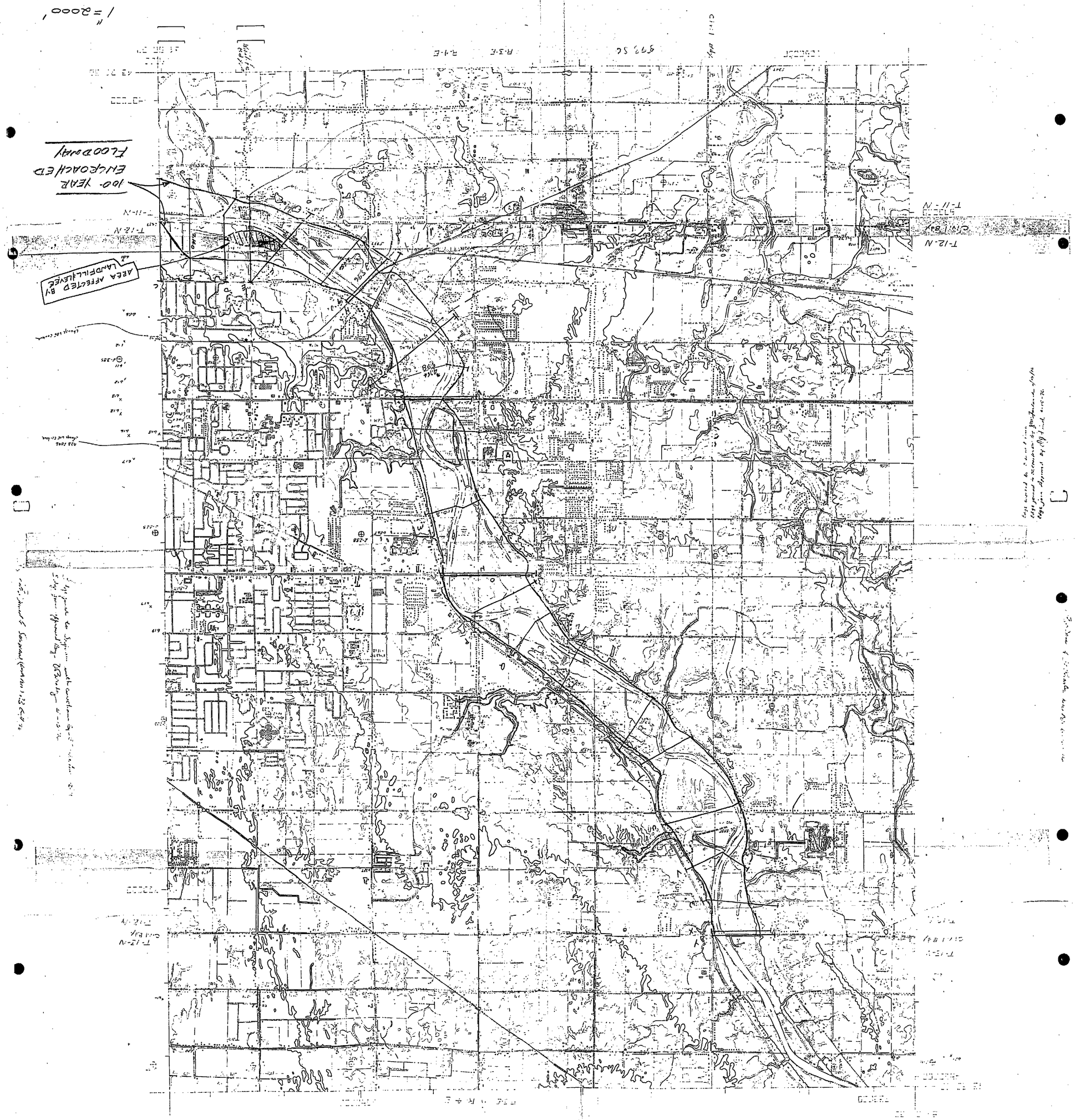
2934.000	330.000	594.570	.923	-.193	0.000	10.000	0.000	2.000
2934.000	380.000	595.083	.513	-.198	0.000	10.000	0.000	2.000
2934.000	480.000	596.129	1.046	-.200	0.000	10.000	0.000	2.000
2960.000	230.000	593.705	0.000	.058	0.000	10.000	0.000	26.000
2960.000	330.000	595.707	2.002	1.137	0.000	10.000	0.000	26.000
2960.000	380.000	596.735	1.027	1.651	0.000	10.000	0.000	26.000
2960.000	480.000	597.442	.708	1.313	0.000	35.344	-25.344	26.000
2963.000	230.000	594.594	0.000	.888	0.000	17.999	0.000	3.000
2963.000	330.000	596.317	1.724	.610	0.000	17.999	-.000	3.000
2963.000	380.000	597.293	.976	.559	0.000	17.999	-.000	3.000
2963.000	480.000	598.156	.862	.713	0.000	17.999	-.000	3.000
2975.000	230.000	594.716	0.000	.123	0.000	41.999	0.000	12.000
2975.000	330.000	596.449	1.733	.132	0.000	41.999	-.000	12.000
2975.000	380.000	597.424	.975	.131	0.000	41.999	-.000	12.000
2975.000	480.000	598.323	.899	.167	0.000	41.999	-.000	12.000
3685.000	230.000	595.966	0.000	1.250	0.000	84.776	0.000	710.000
3685.000	330.000	597.114	1.148	.665	0.000	99.499	-14.723	710.000
3685.000	380.000	597.889	.775	.465	0.000	99.499	-14.723	710.000
3685.000	480.000	598.755	.865	.432	0.000	99.499	-14.723	710.000
3810.000	230.000	597.074	0.000	1.107	0.000	36.999	0.000	125.000
3810.000	330.000	597.579	.505	.464	0.000	36.999	-.000	125.000
3810.000	380.000	598.123	.545	.234	0.000	36.999	-.000	125.000
3810.000	480.000	598.899	.776	.145	0.000	36.999	-.000	125.000
3835.000	230.000	597.243	0.000	.169	0.000	24.499	0.000	25.000
3835.000	330.000	597.753	.510	.174	0.000	24.499	-.000	25.000
3835.000	380.000	598.242	.489	.118	0.000	24.499	-.000	25.000
3835.000	480.000	598.976	.734	.077	0.000	24.499	-.000	25.000
3859.000	230.000	597.242	0.000	-.001	0.000	12.000	0.000	24.000
3859.000	330.000	597.706	.464	-.047	0.000	12.000	0.000	24.000
3859.000	380.000	598.157	.451	-.085	0.000	12.000	0.000	24.000
3859.000	480.000	598.829	.673	-.147	0.000	12.000	0.000	24.000
3907.000	230.000	597.387	0.000	.145	0.000	12.000	0.000	48.000
3907.000	330.000	599.448	2.061	1.742	0.000	12.000	0.000	48.000
3907.000	380.000	600.597	1.149	2.440	0.000	12.000	0.000	48.000
3907.000	480.000	602.936	2.339	4.106	0.000	12.000	0.000	48.000
3922.000	230.000	597.762	0.000	.375	0.000	35.962	0.000	15.000
3922.000	330.000	599.821	2.059	.373	0.000	43.999	-8.037	15.000
3922.000	380.000	600.951	1.130	.355	0.000	43.999	-8.037	15.000
3922.000	480.000	603.261	2.310	.325	0.000	43.999	-8.037	15.000
4150.000	230.000	598.586	0.000	.824	0.000	121.420	0.000	228.000
4150.000	330.000	600.059	1.473	.238	0.000	148.926	-27.506	228.000
4150.000	380.000	601.092	1.033	.141	0.000	171.258	-49.839	228.000
4150.000	480.000	603.332	2.240	.071	0.000	250.428	-129.008	228.000

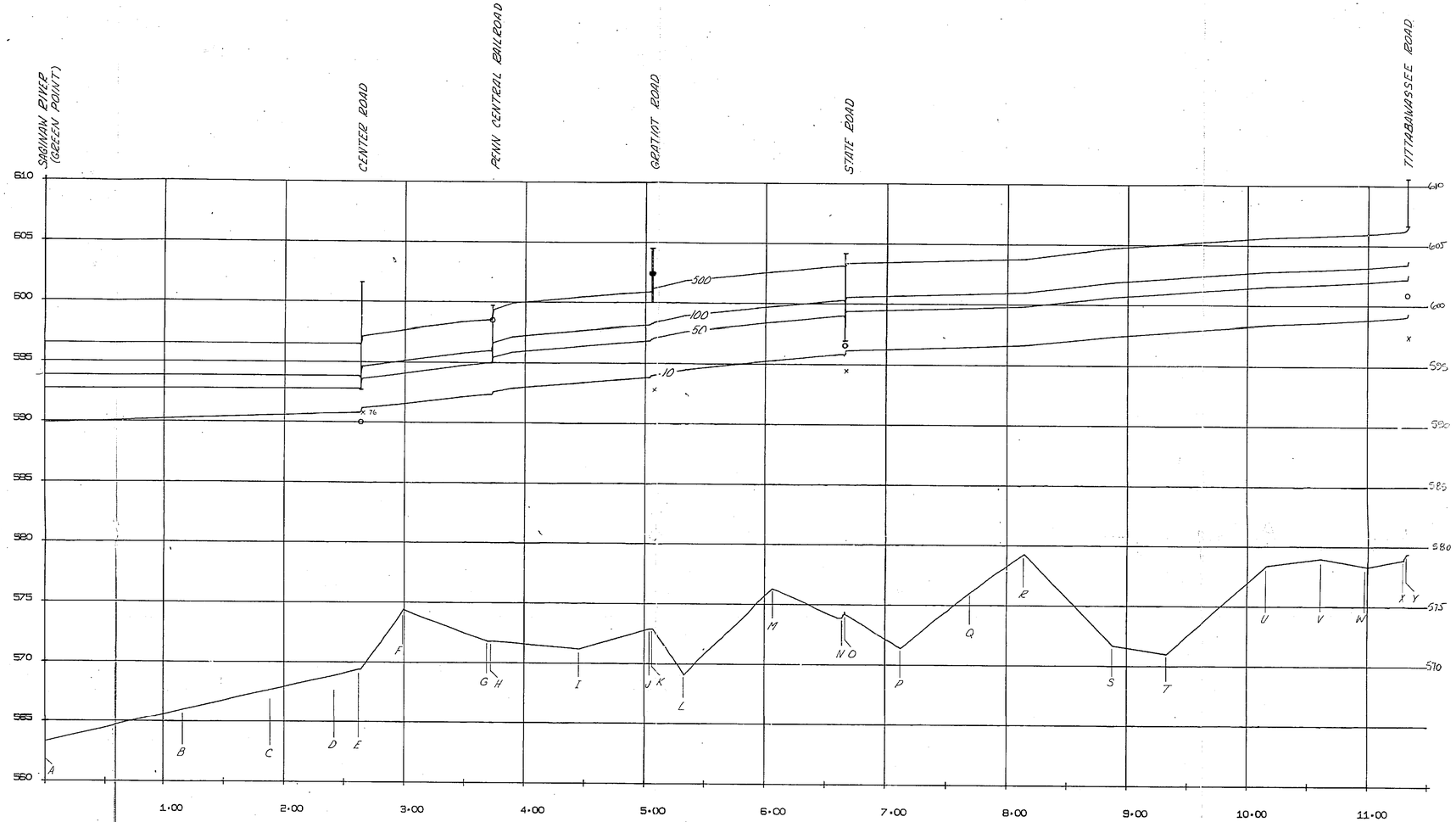
DATA FOR LAST CROSS SECTION

PROFILE	TYPE ENC	TARGET	TOP WIDTH AREA-ACRES	TOP WIDTH AREA-DIFF
1	0.000	0.000	8.004	0.000
2	0.000	0.000	8.412	.408
3	0.000	0.000	8.583	.579
4	0.000	0.000	8.983	.979



NORTH
TITTABAWASSEE RIVER TRIB
(UNNAMED CREEK)
SAGINAW TOWNSHIP
SCALE: 1" = 800'
J&A FILE #5555-60
— DENOTES 100 YR FLOODED OUTLINE
625
629
685
12
7
8
Ure School
618
607
Shattuckville
McMann School
S A G I N A
WASSEE
Malts
18
17
13
592
White School
609
Drain


1" = 2000'
TITTABAWASSEE RIVER
100-YEAR ENCROACHED FLOODWAY
AREA AFFECTED BY LANDFILL LEVEE
T-12-N
T-11-N
R-3-E
R-4-E



Max 76 Q = 20,900
Q10 = 28,100

ALL ELEVATIONS ARE USC&GS DATUM

DRAWN:
DESIGN:
CHECKED:
FINAL:
DATE COMPLETED:
PRELIMINARY:

SCALE: VERT. 1" = 5'
HORIZ. 1" = 0.5 MI

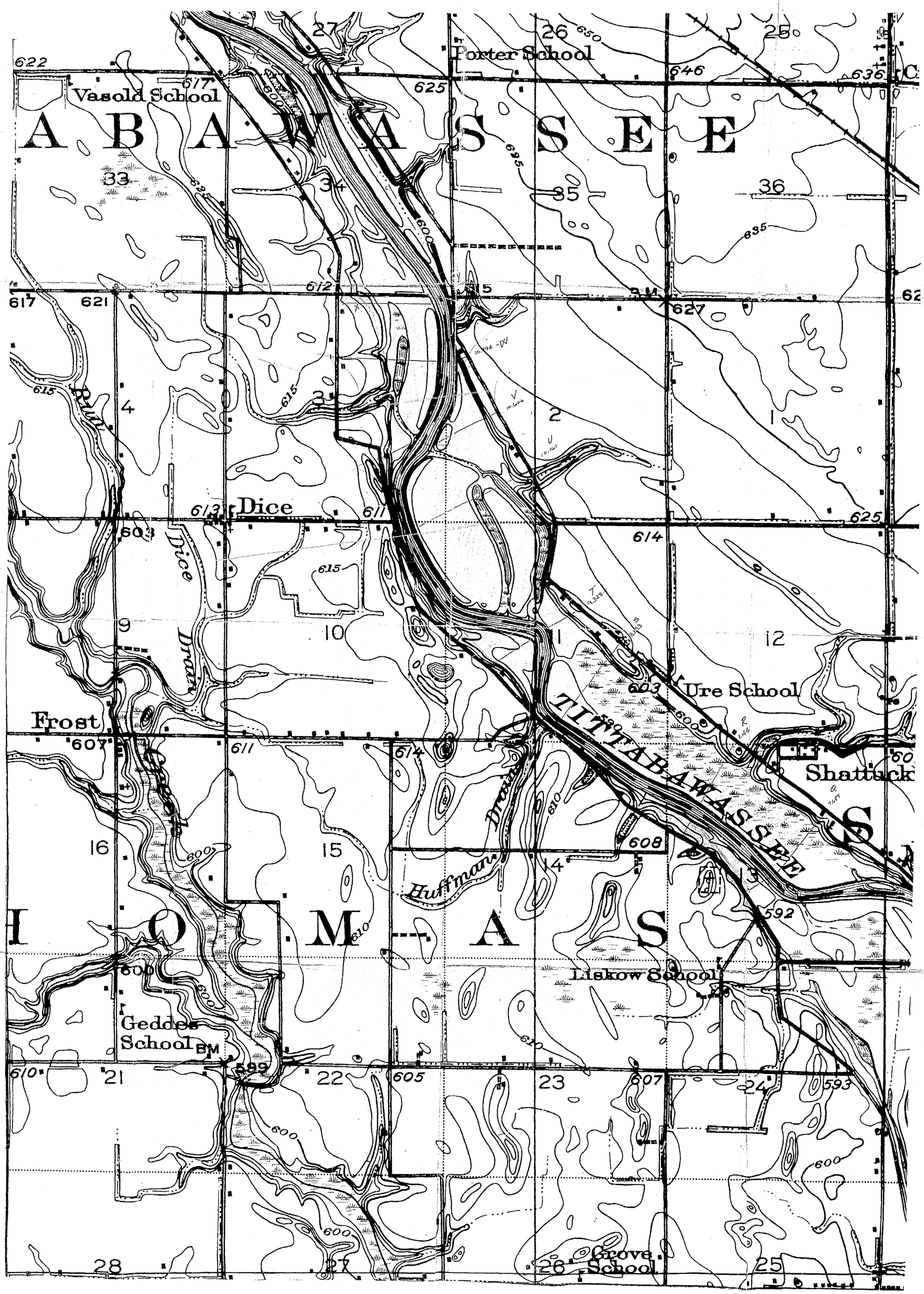
REVISIONS	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE	MARK	BULLETIN	DATE

JOHNSON & ANDERSON, INC.
CONSULTING ENGINEERS
PONTIAC, MICHIGAN

TITTABAWASSEE RIVER
PROJECT MANAGER - THOMAS BAIER

SAGINAW TOWNSHIP, MI, FIS

JOB NO. 5555-60-1
DATE ISSUED 9-21-77
SHEET NO. 1 OF 1



2 OF 2

RECEIVED
APR 19 1977
WATER MANAGEMENT

NORTH

SCALE: 1"=800'

— INDICATES 100 YR. FLOODED OUTLINE

— INDICATES 100 YR. FLOODWAY

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, NORTH BRANCH

4) DOCUMENT TYPE: 100 YR ENCROACHED

00BREAK00

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*************************************************
```

T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	0.0	0.0	0.0	0.	593.860	0.0

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

```
*PROF 2

CCHV    0.100 CEHV    0.300
*SECNO 20950.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


3470 ENCROACHMENT STATIONS      600.0     975.0  TYPE      1  TARGET      375.000

          SECTION A 750 FEET UPSTREAM FROM M-47

 20950.00    13.36   593.86      0.0   593.86   593.90     0.04      0.0      0.0   584.40
    4200.     112.    3010.    1079.     159.    1552.    1324.       0.       0.   583.10
      0.0     0.70     1.94     0.81    0.080    0.045    0.080      0.0   530.50   619.19
 0.000127       0.       0.       0.        0        0        0    -0.01   347.79   966.97


*SECNO 22150.000

3470 ENCROACHMENT STATIONS      100.0     500.0  TYPE      1  TARGET      400.000

          SECTION B

 22150.00    14.82   594.02      0.0   594.02   594.07     0.05     0.16     0.00   584.10
    4200.     148.    1958.    2093.     213.     826.    2596.      76.       8.   583.40
      0.20     0.70     2.37     0.81    0.100    0.045    0.100    0.053   579.20   100.00
 0.000177     950.    1300.     800.        2        0        0    -0.04   400.00   500.00


*SECNO 22850.000
3280 CROSS SECTION  22850.00 EXTENDED      8.70 FEET


3470 ENCROACHMENT STATIONS      300.0     850.0  TYPE      1  TARGET      550.000

          SECTION C

 22850.00    15.10   594.10      0.0   594.09   594.15     0.05     0.08     0.00   584.60
    4200.     534.    1389.    2277.     609.     585.    1701.     109.      13.   585.20
      0.28     0.88     2.37     1.34    0.060    0.045    0.060    0.051   579.00   300.00
 0.000183     450.     450.     450.        1        0        0    -0.03   550.00   850.00


*SECNO 25180.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS      625.0    1850.0  TYPE      1  TARGET     1225.000

          SECTION D DOWNSTREAM GOLF COURSE BRIDGE


          TRD. 594.7   L.C. 592.6   8'X48'

 25180.00    13.29   594.39      0.0   594.27   594.41     0.01     0.25     0.00   585.17
    4200.    3330.     859.      11.    4878.     558.      33.     290.      49.   588.60
      0.92     0.68     1.54     0.33    0.060    0.045    0.060    0.053   531.10   625.00
 0.000094    1700.    2400.    2100.        2        0        0    -0.01  1203.72  1850.00
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*SECNO 25279.000

3265 DIVIDED FLOW

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

 25279.00     13.31    594.41      0.0    594.28    594.42      0.01      0.01      0.00    585.17
    4200.     3383.      807.      11.     5592.      558.       38.      303.       52.    588.60
     0.96      0.50      1.44      0.28    0.060     0.045     0.060     0.052    531.10    242.86
 0.000083      100.      100.      100.        0         0         0     -0.00   1599.84   1861.26

*SECNO 25280.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   588.00 MAX ELLC   610.00

 25280.00     13.31    594.41      0.0    594.28    594.42      0.01      0.00      0.00    585.17
    4200.     3758.      439.       4.     5554.      466.       25.      303.       53.    588.60
     0.96      0.68      0.94      0.14    0.060     0.045     0.060     0.052    591.10    242.90
 0.000110        1.        1.        1.        0         0         0   -139.87   1599.34   1861.24

*SECNO 25281.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   588.00 MAX ELLC   610.00

 25281.00     13.31    594.41      0.0    594.28    594.42      0.01      0.00      0.00    585.17
    4200.     3758.      438.       4.     5560.      466.       26.      304.       53.    588.60
     0.96      0.68      0.94      0.14    0.060     0.045     0.060     0.052    581.10    242.33
 0.000109        3.        8.        8.        0         0         0   -140.11   1600.28   1861.28

*SECNO 25380.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       585.17 ELREA       594.50

 25380.00     13.31    594.41      0.0    594.28    594.42      0.01      0.00      0.00    585.17
    4200.     3392.      808.       0.     5599.      558.       0.      308.       54.    588.60
     0.97      0.61      1.45      0.0     0.060     0.045     0.060     0.052    581.10    242.78
 0.000083       25.       25.       25.        0         0         0     -0.01   1508.22   1751.00

*SECNO 25780.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS      300.0     1625.0  TYPE      1  TARGET     1325.000

          SECTION E MIDDLE GOLF COURSE BRIDGE

          TRD. 594.7   L.C.  592.6    8'X48'
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 25780.00    14.83   594.43     0.0   594.30   594.43     0.01     0.01     0.00   594.70
    4200.    3465.     566.     169.    5202.     557.     413.     342.      61.   594.00
     1.07     0.67     1.01     0.41    0.040    0.035    0.040    0.053   579.60   300.00
 0.000033     200.     510.     525.        2        0        0    -0.06  1321.15  1625.00

*SECNO 25879.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS       300.0    1625.0  TYPE      1  TARGET     1325.000
 25879.00    13.43   594.43     0.0   594.30   594.44     0.01     0.00     0.00   588.80
    4200.    3444.     511.     246.    4990.     462.     490.     355.      64.   589.40
     1.11     0.69     1.11     0.50    0.040    0.035    0.040    0.053   581.00   300.00
 0.000041     100.     100.     100.        0        0        0    -0.06  1325.00  1625.00

*SECNO 25880.000

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   585.10 MAX ELLC   599.00

 25880.00    13.43   594.43     0.0   594.30   594.44     0.01     0.00     0.00   588.80
    4200.    3814.     233.     152.    6206.     394.     411.     356.      64.   589.40
     1.11     0.61     0.59     0.37    0.040    0.035    0.040    0.053   581.00    16.67
 0.000033       1.       1.       1.        0        0        0  -211.84  1628.46  1645.12

*SECNO 25881.000

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   585.10 MAX ELLC   599.00

 25881.00    13.43   594.43     0.0   594.30   594.44     0.01     0.00     0.00   588.80
    4200.    3814.     233.     153.    6211.     394.     412.     357.      65.   589.40
     1.12     0.61     0.59     0.37    0.040    0.035    0.040    0.053   581.00    16.65
 0.000033       8.       8.       8.        0        0        0  -212.03  1628.53  1645.19

*SECNO 25980.000

3470 ENCROACHMENT STATIONS       300.0    1625.0  TYPE      1  TARGET     1325.000
 25980.00    13.43   594.43     0.0   594.30   594.44     0.01     0.00     0.00   588.80
    4200.    3444.     511.     246.    4991.     462.     490.     357.      65.   589.40
     1.12     0.69     1.11     0.50    0.040    0.035    0.040    0.053   581.00   300.00
 0.000041       1.       1.       1.        0        0        0    -0.06  1325.00  1625.00

*SECNO 26000.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS       300.0    1625.0  TYPE      1  TARGET     1325.000
 26000.00    14.83   594.43     0.0   594.30   594.44     0.01     0.00     0.00   587.00
    4200.    3416.     614.     170.    5218.     538.     423.     361.      65.   588.90
     1.13     0.55     1.14     0.40    0.040    0.035    0.040    0.053   579.60   300.00
 0.000032      25.      25.      25.        0        0        0    -0.06  1321.22  1625.00

*SECNO 26260.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
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   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS      1100.0     2125.0  TYPE       1  TARGET      1025.000
          SECTION F UPSTREAM GOLF COURSE BRIDGE

           TRD.  594.9    L.C. 592.3      8'X46'

 26260.00    13.34    594.44      0.0    594.31    594.47      0.03      0.02      0.01    594.30
    4200.    3071.    1129.        0.     2837.     510.        0.      403.        76. 100000.00
     1.20     1.08     2.21      0.0     0.040     0.035     0.040     0.051    581.10   1100.00
 0.000170     390.     390.     250.         0         0         0     -0.00   1025.00   2125.00

*SECNO 26360.000

3470 ENCROACHMENT STATIONS      1100.0     2125.0  TYPE       1  TARGET      1025.000
 26360.00    13.35    594.45      0.0    594.32    594.49      0.03      0.02      0.00    592.30
    4200.    3082.    1118.        0.     2846.     503.        0.      410.        78. 100000.00
     1.22     1.08     2.22      0.0     0.040     0.035     0.040     0.051    581.10   1100.00
 0.000170     100.     100.     100.         0         0         0     -0.00   1025.00   2125.00

*SECNO 26361.000

3370 NORMAL BRIDGE,NRD  29 MIN ELTRD   590.00 MAX ELLC   604.00

 26361.00    13.37    594.47      0.0    594.33    594.49      0.02      0.00      0.00    592.30
    4200.    3714.     478.        9.     3348.     396.       35.      410.        78.    594.30
     1.22     1.11     1.21      0.25     0.040     0.035     0.040     0.051    581.10    705.57
 0.000206       1.       1.        1.         1         0         0   -158.01   1508.04   2213.62

*SECNO 26369.000

3370 NORMAL BRIDGE,NRD  29 MIN ELTRD   590.00 MAX ELLC   604.00

 26369.00    13.37    594.47      0.0    594.33    594.49      0.02      0.00      0.00    592.30
    4200.    3718.     473.        9.     3361.     396.       36.      411.        78.    594.30
     1.23     1.11     1.19      0.25     0.040     0.035     0.040     0.051    581.10    705.28
 0.000205       8.       8.        8.         0         0         0   -158.28   1508.44   2213.71

*SECNO 26370.000

3470 ENCROACHMENT STATIONS      1000.0     2125.0  TYPE       1  TARGET      1125.000
 26370.00    13.36    594.46      0.0    594.33    594.49      0.03      0.00      0.00    592.30
    4200.    3125.    1075.        0.     3060.     504.        0.      411.        73. 100000.00
     1.23     1.02     2.13      0.0     0.040     0.035     0.040     0.051    581.10   1000.00
 0.000156       1.       1.        1.         0         0         0     -0.02   1125.00   2125.00

*SECNO 26700.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS      1000.0     2125.0  TYPE       1  TARGET      1125.000
 26700.00    13.37    594.47      0.0    594.33    594.50      0.03      0.00      0.00    592.30
    4200.    3124.    1076.        0.     3057.     504.        0.      413.        79. 100000.00
```

1.23	1.02	2.14	0.0	0.040	0.035	0.040	0.051	591.10	1000.00
0.000157	25.	25.	25.	0	0	0	-0.02	1125.00	2125.00

*SECNO 27550.000

3470 ENCROACHMENT STATIONS 1250.0 2450.0 TYPE 1 TARGET 1200.000

SECTION G

27550.00	11.35	594.65	0.0	594.52	594.66	0.01	0.16	0.00	588.30
4200.	2983.	557.	661.	4462.	423.	1219.	578.	119.	586.90
1.79	0.67	1.30	0.54	0.060	0.045	0.060	0.046	583.30	1250.00
0.000077	1675.	1030.	650.	0	0	0	-0.09	1200.00	2450.00

*SECNO 28650.000

SECTION H

28650.00	10.34	594.74	0.0	594.63	594.76	0.02	0.10	0.00	590.80
4200.	1006.	830.	2314.	1193.	500.	3790.	697.	153.	590.50
2.07	0.84	1.76	0.61	0.060	0.045	0.060	0.048	584.40	1100.88
0.000175	650.	1300.	1100.	2	0	0	-0.18	1900.75	3001.63

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
20950.000	0.0	0.0	0.0	580.50	4200.00	593.86	0.0	593.90	1.27	1.94	3035.27	3729.63
20950.000	0.0	0.0	0.0	580.50	4200.00	593.86	0.0	593.90	1.27	1.94	3035.27	3729.63
22150.000	1300.00	0.0	0.0	579.20	4200.00	594.02	0.0	594.06	1.50	2.18	4183.69	3425.89
22150.000	1300.00	0.0	0.0	579.20	4200.00	594.02	0.0	594.07	1.77	2.37	3634.43	3154.99
22850.000	450.00	0.0	0.0	579.00	4200.00	594.09	0.0	594.11	0.84	1.61	4443.67	4586.16
22850.000	450.00	0.0	0.0	579.00	4200.00	594.10	0.0	594.15	1.83	2.37	2895.35	3106.84
25180.000	2400.00	0.0	0.0	581.10	4200.00	594.27	0.0	594.28	0.91	1.50	5969.12	4403.93
25180.000	2400.00	0.0	0.0	581.10	4200.00	594.39	0.0	594.41	0.94	1.54	5469.22	4329.02
25279.000	100.00	0.0	0.0	581.10	4200.00	594.28	0.0	594.29	0.90	1.50	5982.41	4417.05
25279.000	100.00	0.0	0.0	581.10	4200.00	594.41	0.0	594.42	0.83	1.44	6188.67	4621.47
25280.000	1.00	588.00	610.00	581.10	4200.00	594.28	0.0	594.29	1.20	0.99	5851.21	3830.23
25280.000	1.00	588.00	610.00	581.10	4200.00	594.41	0.0	594.42	1.10	0.94	6045.30	4008.04
25281.000	8.00	588.00	610.00	581.10	4200.00	594.28	0.0	594.29	1.20	0.98	5857.48	3835.96
25281.000	8.00	588.00	610.00	581.10	4200.00	594.41	0.0	594.42	1.09	0.94	6051.70	4013.93
25380.000	25.00	0.0	0.0	581.10	4200.00	594.28	0.0	594.29	0.90	1.50	5966.02	4418.66
25380.000	25.00	0.0	0.0	581.10	4200.00	594.41	0.0	594.42	0.83	1.45	6157.36	4616.81
25780.000	510.00	0.0	0.0	579.60	4200.00	594.30	0.0	594.31	0.26	0.89	7252.61	8249.57
25780.000	510.00	0.0	0.0	579.60	4200.00	594.43	0.0	594.43	0.33	1.01	6172.46	7280.00
25879.000	100.00	0.0	0.0	581.00	4200.00	594.30	0.0	594.31	0.31	0.95	7023.72	7553.24
25879.000	100.00	0.0	0.0	581.00	4200.00	594.43	0.0	594.44	0.41	1.11	5942.08	6577.90
25880.000	1.00	585.10	599.00	581.00	4200.00	594.30	0.0	594.31	0.36	0.62	6814.13	7016.67
25880.000	1.00	585.10	599.00	581.00	4200.00	594.43	0.0	594.44	0.33	0.59	7011.39	7319.18
25881.000	8.00	585.10	599.00	581.00	4200.00	594.30	0.0	594.31	0.36	0.62	6814.90	7017.83
25881.000	8.00	585.10	599.00	581.00	4200.00	594.43	0.0	594.44	0.33	0.59	7016.76	7327.55
25980.000	1.00	0.0	0.0	581.00	4200.00	594.30	0.0	594.31	0.31	0.96	7019.35	7546.24
25980.000	1.00	0.0	0.0	581.00	4200.00	594.43	0.0	594.44	0.41	1.11	5943.05	6579.49
26000.000	25.00	0.0	0.0	579.60	4200.00	594.30	0.0	594.31	0.25	1.00	7258.59	8366.67
26000.000	25.00	0.0	0.0	579.60	4200.00	594.43	0.0	594.44	0.32	1.14	6178.96	7400.51
26260.000	390.00	0.0	0.0	581.10	4200.00	594.31	0.0	594.34	1.59	2.18	3704.86	3331.02
26260.000	390.00	0.0	0.0	581.10	4200.00	594.44	0.0	594.47	1.70	2.21	3347.23	3222.02
26360.000	100.00	0.0	0.0	581.10	4200.00	594.32	0.0	594.35	1.63	2.17	3716.29	3294.23
26360.000	100.00	0.0	0.0	581.10	4200.00	594.45	0.0	594.49	1.70	2.22	3348.78	3219.99
26361.000	1.00	590.00	604.00	581.10	4200.00	594.33	0.0	594.35	2.31	1.46	3575.60	2761.05
26361.000	1.00	590.00	604.00	581.10	4200.00	594.47	0.0	594.49	2.06	1.21	3779.11	2922.92
26369.000	8.00	590.00	604.00	581.10	4200.00	594.33	0.0	594.36	2.29	1.44	3591.52	2774.45
26369.000	8.00	590.00	604.00	581.10	4200.00	594.47	0.0	594.49	2.05	1.19	3793.21	2935.54

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
26370.000	1.00	0.0	0.0	581.10	4200.00	594.33	0.0	594.36	1.60	2.15	3744.90	3325.05
26370.000	1.00	0.0	0.0	581.10	4200.00	594.46	0.0	594.49	1.56	2.13	3564.16	3360.72
26700.000	25.00	0.0	0.0	581.10	4200.00	594.33	0.0	594.36	1.60	2.15	3743.07	3323.07
26700.000	25.00	0.0	0.0	581.10	4200.00	594.47	0.0	594.50	1.57	2.14	3560.86	3356.52
27550.000	1030.00	0.0	0.0	583.30	4200.00	594.52	0.0	594.53	0.84	1.35	5986.88	4593.38
27550.000	1030.00	0.0	0.0	583.30	4200.00	594.65	0.0	594.66	0.77	1.30	6108.90	4794.82
28650.000	1300.00	0.0	0.0	584.40	4200.00	594.63	0.0	594.64	1.92	1.83	5275.34	3028.15
28650.000	1300.00	0.0	0.0	584.40	4200.00	594.74	0.0	594.76	1.75	1.76	5482.95	3177.54

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
20950.000	4200.00	593.86	0.0	0.0	0.0	347.79	0.0
20950.000	4200.00	593.86	0.0	0.0	0.0	347.79	0.0
22150.000	4200.00	594.02	0.0	0.16	0.0	530.24	1300.00
22150.000	4200.00	594.02	0.00	0.16	0.00	400.00	1300.00
22850.000	4200.00	594.09	0.0	0.07	0.0	883.20	450.00
22850.000	4200.00	594.10	0.02	0.08	0.02	550.00	450.00
25180.000	4200.00	594.27	0.0	0.18	0.0	1563.44	2400.00
25180.000	4200.00	594.39	0.13	0.29	0.13	1203.72	2400.00
25279.000	4200.00	594.28	0.0	0.01	0.0	1570.36	100.00
25279.000	4200.00	594.41	0.13	0.01	0.13	1599.84	100.00
25280.000	4200.00	594.28	0.0	0.00	0.0	1570.53	1.00
25280.000	4200.00	594.41	0.13	0.00	0.13	1599.34	1.00
25281.000	4200.00	594.28	0.0	0.00	0.0	1571.47	8.00
25281.000	4200.00	594.41	0.13	0.00	0.13	1600.28	8.00
25380.000	4200.00	594.28	0.0	0.00	0.0	1505.99	25.00
25380.000	4200.00	594.41	0.13	0.0	0.13	1503.22	25.00
25780.000	4200.00	594.30	0.0	0.02	0.0	1619.96	510.00
25780.000	4200.00	594.43	0.13	0.02	0.13	1321.15	510.00
25879.000	4200.00	594.30	0.0	0.00	0.0	1625.70	100.00
25879.000	4200.00	594.43	0.13	0.00	0.13	1325.00	100.00
25880.000	4200.00	594.30	0.0	0.00	0.0	1625.63	1.00
25880.000	4200.00	594.43	0.13	0.00	0.13	1628.46	1.00
25881.000	4200.00	594.30	0.0	0.00	0.0	1625.64	8.00
25881.000	4200.00	594.43	0.13	0.00	0.13	1628.53	8.00
25980.000	4200.00	594.30	0.0	-0.00	0.0	1625.64	1.00
25980.000	4200.00	594.43	0.13	-0.00	0.13	1325.00	1.00
26000.000	4200.00	594.30	0.0	0.00	0.0	1620.09	25.00
26000.000	4200.00	594.43	0.13	0.00	0.13	1321.22	25.00
26260.000	4200.00	594.31	0.0	0.00	0.0	1437.22	390.00
26260.000	4200.00	594.44	0.13	0.01	0.13	1025.00	390.00
26360.000	4200.00	594.32	0.0	0.02	0.0	1501.99	100.00
26360.000	4200.00	594.45	0.13	0.02	0.13	1025.00	100.00
26361.000	4200.00	594.33	0.0	0.01	0.0	1502.30	1.00
26361.000	4200.00	594.47	0.14	0.02	0.14	1508.04	1.00
26369.000	4200.00	594.33	0.0	0.00	0.0	1502.76	8.00
26369.000	4200.00	594.47	0.14	0.00	0.14	1508.44	8.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
26370.000	4200.00	594.33	0.0	-0.01	0.0	1502.78	1.00
26370.000	4200.00	594.46	0.14	-0.01	0.14	1125.00	1.00
26700.000	4200.00	594.33	0.0	0.00	0.0	1502.73	25.00
26700.000	4200.00	594.47	0.14	0.00	0.14	1125.00	25.00
27550.000	4200.00	594.52	0.0	0.19	0.0	1258.73	1030.00
27550.000	4200.00	594.65	0.13	0.18	0.13	1200.00	1030.00
28650.000	4200.00	594.63	0.0	0.11	0.0	1864.33	1300.00
28650.000	4200.00	594.74	0.12	0.10	0.12	1900.75	1300.00

SUMMARY OF ERRORS

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
20950.000	593.86	0.0	593.90	347.79	111.63	3009.81	1078.56	375.00	600.00	650.00	780.00	975.00
20950.000	593.86	0.0	593.90	347.79	111.63	3009.81	1078.56	375.00	600.00	650.00	780.00	975.00
22150.000	594.02	0.0	594.06	530.24	249.65	1302.57	2147.78	0.0	0.0	125.00	190.00	0.0
22150.000	594.02	0.00	594.07	400.00	148.49	1958.22	2093.29	400.00	100.00	125.00	190.00	500.00
22850.000	594.09	0.0	594.11	883.20	390.07	939.00	2870.93	0.0	0.0	601.00	646.00	0.0
22850.000	594.10	0.02	594.15	550.00	534.15	1388.88	2276.97	550.00	300.00	601.00	646.00	850.00
25180.000	594.27	0.0	594.28	1568.44	3361.49	828.64	9.88	0.0	0.0	1700.00	1751.00	0.0
25180.000	594.39	0.13	594.41	1203.72	3329.63	359.29	11.08	1225.00	625.00	1700.00	1751.00	1850.00
25279.000	594.28	0.0	594.29	1570.36	3362.82	327.25	9.92	0.0	0.0	1700.00	1751.00	0.0
25279.000	594.41	0.13	594.42	1599.84	3382.53	806.58	10.89	0.0	0.0	1700.00	1751.00	0.0
25280.000	594.28	0.0	594.29	1570.53	3738.24	459.11	2.65	0.0	0.0	1700.00	1751.00	0.0
25280.000	594.41	0.13	594.42	1599.34	3757.76	438.74	3.51	0.0	0.0	1700.00	1751.00	0.0
25281.000	594.28	0.0	594.29	1571.47	3738.91	458.42	2.67	0.0	0.0	1700.00	1751.00	0.0
25281.000	594.41	0.13	594.42	1600.28	3758.36	438.10	3.54	0.0	0.0	1700.00	1751.00	0.0
25380.000	594.28	0.0	594.29	1505.99	3372.05	827.95	0.0	0.0	0.0	1700.00	1751.00	0.0
25380.000	594.41	0.13	594.42	1508.22	3392.03	807.97	0.0	0.0	0.0	1700.00	1751.00	0.0
25780.000	594.30	0.0	594.31	1619.96	3577.00	489.61	133.39	0.0	0.0	1415.00	1470.00	0.0
25780.000	594.43	0.13	594.43	1321.15	3464.93	565.66	169.41	1325.00	300.00	1415.00	1470.00	1625.00
25879.000	594.30	0.0	594.31	1625.70	3570.21	434.95	194.83	0.0	0.0	1418.00	1467.00	0.0
25879.000	594.43	0.13	594.44	1325.00	3443.55	510.71	245.74	1325.00	300.00	1418.00	1467.00	1625.00
25880.000	594.30	0.0	594.31	1625.63	3807.63	244.76	147.60	0.0	0.0	1418.00	1467.00	0.0
25880.000	594.43	0.13	594.44	1628.46	3814.21	233.30	152.49	0.0	0.0	1418.00	1467.00	0.0
25881.000	594.30	0.0	594.31	1625.64	3807.66	244.72	147.62	0.0	0.0	1418.00	1467.00	0.0
25881.000	594.43	0.13	594.44	1628.53	3814.35	233.00	152.64	0.0	0.0	1418.00	1467.00	0.0
25980.000	594.30	0.0	594.31	1625.64	3570.13	435.15	194.72	0.0	0.0	1418.00	1467.00	0.0
25980.000	594.43	0.13	594.44	1325.00	3443.57	510.65	245.78	1325.00	300.00	1418.00	1467.00	1625.00

SECND	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
26000.000	594.30	0.0	594.31	1620.09	3533.52	532.60	133.88	0.0	0.0	1418.00	1467.00	0.0
26000.000	594.43	0.13	594.44	1321.22	3416.47	613.90	169.53	1325.00	300.00	1418.00	1467.00	1625.00
26260.000	594.31	0.0	594.34	1437.22	2985.18	1214.53	0.29	0.0	0.0	2077.00	2134.00	0.0
26260.000	594.44	0.13	594.47	1025.00	3070.99	1129.01	0.0	1025.00	1100.00	2077.00	2134.00	2125.00
26360.000	594.32	0.0	594.35	1501.99	3024.46	1170.38	5.16	0.0	0.0	2077.00	2134.00	0.0
26360.000	594.45	0.13	594.49	1025.00	3082.33	1117.66	0.0	1025.00	1100.00	2077.00	2134.00	2125.00
26361.000	594.33	0.0	594.35	1502.30	3621.60	573.06	5.34	0.0	0.0	2077.00	2134.00	0.0
26361.000	594.47	0.14	594.49	1508.04	3713.62	477.67	8.71	0.0	0.0	2077.00	2134.00	0.0
26369.000	594.33	0.0	594.36	1502.76	3627.96	566.45	5.59	0.0	0.0	2077.00	2134.00	0.0
26369.000	594.47	0.14	594.49	1508.44	3718.05	473.01	8.94	0.0	0.0	2077.00	2134.00	0.0
26370.000	594.33	0.0	594.36	1502.78	3030.94	1163.42	5.64	0.0	0.0	2077.00	2134.00	0.0
26370.000	594.46	0.14	594.49	1125.00	3125.29	1074.71	0.0	1125.00	1000.00	2077.00	2134.00	2125.00
26700.000	594.33	0.0	594.36	1502.73	3030.52	1163.87	5.61	0.0	0.0	2077.00	2134.00	0.0
26700.000	594.47	0.14	594.50	1125.00	3124.41	1075.59	0.0	1125.00	1000.00	2077.00	2134.00	2125.00
27550.000	594.52	0.0	594.53	1258.73	2979.90	568.39	651.71	0.0	0.0	2090.00	2133.00	0.0
27550.000	594.65	0.13	594.66	1200.00	2982.58	556.77	660.65	1200.00	1250.00	2090.00	2133.00	2450.00
28650.000	594.63	0.0	594.64	1864.83	1011.08	903.10	2285.82	0.0	0.0	1401.00	1461.00	0.0
28650.000	594.74	0.12	594.76	1900.75	1006.37	879.94	2313.69	0.0	0.0	1401.00	1461.00	0.0

FLOODWAY DATA, BAD RIVER-NORTH BRANCH
PROFILE NO. 2

	STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
A	20950.000	343.	3035.	1.4	593.9	593.9	0.0
B	22150.000	400.	3634.	1.2	594.0	594.0	0.0
C	22850.000	550.	2895.	1.5	594.1	594.1	0.0
D	25180.000	1225.	5469.	0.8	594.4	594.3	0.1
	25279.000	1618.	6189.	0.7	594.4	594.3	0.1
	25280.000	1618.	6045.	0.7	594.4	594.3	0.1
	25281.000	1618.	6052.	0.7	594.4	594.3	0.1
	25380.000	1508.	6157.	0.7	594.4	594.3	0.1
E	25780.000	1325.	6172.	0.7	594.4	594.3	0.1
	25879.000	1325.	5942.	0.7	594.4	594.3	0.1
	25880.000	1628.	7011.	0.6	594.4	594.3	0.1
	25881.000	1629.	7017.	0.6	594.4	594.3	0.1
	25980.000	1325.	5943.	0.7	594.4	594.3	0.1
	26000.000	1325.	6179.	0.7	594.4	594.3	0.1
F	26260.000	1025.	3347.	1.3	594.4	594.3	0.1
	26360.000	1025.	3349.	1.3	594.4	594.3	0.1
	26361.000	1508.	3779.	1.1	594.4	594.3	0.1
	26369.000	1508.	3793.	1.1	594.4	594.3	0.1
	26370.000	1125.	3564.	1.2	594.4	594.3	0.1
	26700.000	1125.	3561.	1.2	594.4	594.3	0.1
G	27550.000	1200.	6109.	0.7	594.6	594.5	0.1
H	28650.000	1901.	5483.	0.8	594.7	594.6	0.1

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, NORTH BRANCH

4) DOCUMENT TYPE: 100YR NATURAL

00BREAK00

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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C
T1      BAD RIVER-NORTH BRNCH,ST. CHARLES, PROJECT NO. 8544, BADN
T2      BAD RIVER-NORTH BRANCH
T3      BAD RIVER-NORTH BRANCH

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.   0.0        0.0       0.0       0.     593.860    0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   150.000   200.000    0.0       0.0       0.0       0.0       0.0       0.0       0.0

NC     0.080     0.080     0.045     0.100     0.300     0.0       0.0       0.0       0.0       0.0
QT     4.000  2730.000  3960.000  4200.000  4600.000  4200.000     0.0       0.0       0.0       0.0

          SECTION A 750 FEET UPSTREAM FROM M-47

X1  20950.000    18.000   650.000   780.000     0.0       0.0       0.0       0.0       0.0       0.0
X3      0.0       0.0       0.0     600.000     0.0     975.000     0.0       0.0       0.0       0.0
GR    596.000     0.0     595.000   290.000   600.000   470.000   600.000   600.000   592.000   625.000
GR    588.000   635.000   584.400   650.000   582.300   679.000   580.600   691.000   581.000   709.000
GR    581.100   721.000   580.500   739.000   582.300   752.000   583.100   780.000   588.000   920.000
GR    592.000   960.000   596.000   975.000   596.000  1160.000     0.0       0.0       0.0       0.0
NC      0.100     0.100     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     100.000   500.000

          SECTION B

X1  22150.000    16.000   125.000   190.000   950.000   300.000  1300.000     0.0       0.0       0.0
GR    600.000     0.0     596.000    45.000   592.000    65.000   588.000    90.000   584.100   125.000
GR    582.500   137.000   581.200   139.000   579.200   151.000   579.800   161.000   581.200   173.000
GR    583.400   190.000   584.000   210.000   588.000   535.000   592.000   570.000   596.000   600.000
GR    600.000   660.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.060     0.060     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     300.000   850.000

          SECTION C

X1  22850.000    21.000   601.000   646.000   450.000   450.000   450.000     0.0       0.0       0.0
GR    600.000     0.0     595.000    85.000   593.100   186.000   593.000   286.000   593.700   386.000
GR    593.200   466.000   592.200   527.000   589.900   556.000   585.700   586.000   584.600   601.000
GR    582.200   602.000   580.200   611.000   579.000   620.000   580.800   630.000   582.200   639.000
GR    585.200   646.000   585.800   652.000   589.700   660.000   585.500   671.000   585.700   943.000
GR    585.400  1017.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     625.000  1850.000
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SECTION D DOWNSTREAM GOLF COURSE BRIDGE

TRD. 594.7 L.C. 592.6 8°X48°

X1	25180.000	26.000	1700.000	1751.000	1700.000	2100.000	2400.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
GR	610.000	0.0	608.000	100.000	606.000	135.000	604.000	160.000	596.000	215.000
GR	594.000	250.000	592.000	455.000	592.000	705.000	590.000	1070.000	588.000	1400.000
GR	590.000	1665.000	585.170	1700.000	584.760	1703.000	583.380	1713.000	582.000	1723.000
GR	581.460	1729.000	581.100	1733.000	584.300	1743.000	588.600	1751.000	591.680	1755.000
GR	594.500	1758.000	594.000	1858.000	596.000	1874.000	598.000	1906.000	600.000	1933.000
GR	600.800	1970.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	25279.000	0.0	1700.000	1751.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0

X1	25280.000	0.0	1700.000	1751.000	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
BT	26.000	0.0	610.000	610.000	100.000	608.000	608.000	135.000	606.000	606.000
BT	160.000	604.000	604.000	215.000	596.000	596.000	250.000	594.000	594.000	455.000
BT	592.000	592.000	705.000	592.000	592.000	1070.000	590.000	590.000	1400.000	588.000
BT	588.000	1665.000	590.000	590.000	1700.000	594.500	592.500	1703.000	594.500	592.500
BT	1713.000	594.600	592.600	1723.000	594.700	592.700	1729.000	594.700	592.700	1733.000
BT	594.600	592.600	1743.000	594.500	592.500	1751.000	594.500	592.700	1755.000	594.500
BT	591.680	1758.000	594.500	590.500	1853.000	594.000	594.000	1874.000	596.000	596.000
BT	1906.000	598.000	598.000	1938.000	600.000	600.000	1970.000	600.300	600.300	0.0

X1	25281.000	0.0	0.0	0.0	8.000	8.000	8.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0

X1	25380.000	0.0	0.0	0.0	25.000	25.000	25.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	400.000	0.0	0.0	0.0	594.500	0.0
NC	0.040	0.040	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000

SECTION E MIDDLE GOLF COURSE BRIDGE

TRD. 594.7 L.C. 592.6 8°X48°

X1	25780.000	25.000	1415.000	1470.000	200.000	525.000	510.000	0.0	0.0	0.0
GR	599.000	0.0	589.400	35.000	590.000	130.000	589.300	523.000	594.000	791.000
GR	590.400	874.000	585.100	924.000	585.100	1060.000	589.500	1075.000	589.500	1332.000
GR	593.600	1400.000	594.700	1415.000	587.000	1418.000	585.500	1427.000	584.400	1429.000
GR	581.000	1437.000	579.600	1443.000	581.300	1451.000	584.400	1459.000	588.910	1467.000
GR	594.000	1470.000	589.800	1558.000	598.300	1718.000	595.300	1771.000	599.000	2180.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000

X1	25879.000	26.000	1418.000	1467.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	599.000	0.0	589.400	35.000	590.000	130.000	589.300	523.000	594.000	791.000
GR	590.400	874.000	588.100	924.000	585.100	1060.000	589.500	1075.000	589.500	1332.000
GR	593.600	1400.000	588.800	1415.000	588.800	1418.000	588.800	1427.000	588.800	1429.000
GR	585.500	1429.000	584.400	1437.000	581.000	1443.000	581.300	1451.000	584.400	1459.000
GR	585.800	1459.000	589.400	1467.000	592.500	1470.000	589.800	1558.000	598.300	1718.000
GR	595.300	1771.000	599.000	2180.000	0.0	0.0	0.0	0.0	0.0	0.0

X1	25880.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	26.000	0.0	599.000	599.000	35.000	589.400	589.400	130.000	590.700	590.000
BT	523.000	589.300	589.300	791.000	594.000	594.300	874.000	592.400	592.400	924.000

BT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BT	[illegible]	1400.000	593.600	593.600	1415.000	594.700	588.800	1418.000	594.300	592.800
BT	[illegible]	594.800	592.800	1429.000	594.800	592.800	1437.000	594.900	592.900	1444.000
BT	[illegible]	594.900	1451.000	594.900	592.900	1459.000	594.700	592.700	1466.000	594.500
BT	592.500	1467.000	594.500	592.500	1470.000	594.400	592.500	1553.000	589.800	589.800
BT	1718.000	598.300	598.300	1771.000	595.300	595.300	2180.000	599.000	599.000	0.0
X1	25881.000	0.0	0.0	0.0	8.000	8.000	8.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000
X1	25980.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000
X1	26000.000	25.000	1418.000	1467.000	25.000	25.000	25.000	0.0	0.0	0.0
GR	599.000	0.0	589.400	35.000	590.000	130.000	589.300	523.000	594.000	791.000
GR	590.400	874.000	585.100	924.000	585.100	1060.000	589.500	1075.000	589.500	1332.000
GR	593.600	1400.000	594.700	1415.000	587.000	1418.000	585.500	1427.000	584.400	1429.000
GR	581.000	1437.000	579.600	1443.000	581.300	1451.000	584.400	1459.000	588.900	1467.000
GR	594.000	1470.000	589.800	1558.000	598.300	1718.000	595.300	1771.000	599.000	2180.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1100.000	2125.000

SECTION F UPSTREAM GOLF COURSE BRIDGE

TRD. 594.9 L.C. 592.3 8°X46°

X1	26260.000	30.000	2077.000	2134.000	390.000	250.000	390.000	0.0	0.0	0.0
GR	604.000	0.0	602.000	340.000	600.000	395.000	598.000	595.000	594.000	720.000
GR	592.000	1180.000	593.000	1380.000	592.000	1620.000	590.000	1645.000	590.000	1990.000
GR	592.000	2030.000	594.000	2054.000	594.000	2072.000	594.300	2077.000	585.200	2082.000
GR	585.300	2083.000	584.400	2090.000	582.400	2098.000	581.100	2105.000	582.100	2114.000
GR	584.400	2121.000	585.400	2128.000	594.300	2134.000	594.000	2136.000	596.000	2209.000
GR	598.000	2229.000	600.000	2274.000	602.000	2334.000	602.000	2379.000	604.000	2469.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1100.000	2125.000
X1	26360.000	31.000	2077.000	2134.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	604.000	0.0	602.600	340.000	600.000	395.000	598.000	595.000	594.000	720.000
GR	592.000	1130.000	593.000	1380.000	592.000	1620.000	590.000	1645.000	590.000	1990.000
GR	592.000	2030.000	594.000	2054.000	594.000	2072.000	592.300	2077.000	585.200	2082.000
GR	585.200	2090.000	583.600	2091.000	582.400	2098.000	581.100	2106.000	582.100	2114.000
GR	584.400	2120.000	587.000	2121.000	587.000	2128.000	594.300	2134.000	594.000	2136.000
GR	594.000	2209.000	596.000	2229.000	598.000	2274.000	602.000	2334.000	602.000	2379.000
GR	604.000	2469.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	26361.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	29.000	0.0	604.000	604.000	340.000	602.000	602.000	395.000	600.000	600.000
BT	598.000	598.000	598.000	720.000	594.000	594.000	1180.000	592.000	592.000	1380.000
BT	593.000	593.000	1620.000	592.000	592.000	1645.000	590.000	590.000	1990.000	590.000
BT	590.000	2030.000	592.000	592.000	2054.000	594.000	594.000	2072.000	594.000	594.000
BT	2077.000	594.300	592.300	2082.000	594.400	585.200	2090.000	594.400	592.400	2098.000
BT	594.500	592.500	2106.000	594.600	592.600	2114.000	594.500	592.500	2121.000	594.500
BT	592.500	2128.000	594.400	592.400	2134.000	594.300	594.300	2136.000	594.000	594.000
BT	2209.000	596.000	596.000	2229.000	598.000	598.000	2274.000	600.000	600.000	2334.000
BT	602.000	602.000	2379.000	602.000	602.000	2469.000	604.000	604.000	0.0	0.0
X1	26369.000	0.0	0.0	0.0	8.000	8.000	8.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1000.000	2125.000

X1	26370.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1000.000	2125.000
X1	26700.000	0.0	0.0	0.0	25.000	25.000	25.000	0.0	0.0	0.0
NC	0.060	0.060	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1250.000	2450.000

SECTION G

X1	27550.000	19.000	2090.000	2133.000	1675.000	650.000	1030.000	0.0	0.0	0.0
GR	602.000	0.0	600.000	50.000	600.000	760.000	595.000	1190.000	590.000	1340.000
GR	588.300	2020.000	588.300	2090.000	585.400	2098.000	584.400	2109.000	583.400	2116.000
GR	583.300	2123.000	584.400	2131.000	586.900	2133.000	591.500	2147.000	589.500	2369.000
GR	594.100	2447.000	596.600	2547.000	600.000	2762.000	602.300	3762.000	0.0	0.0

SECTION H

X1	28650.000	19.000	1401.000	1461.000	650.000	1100.000	1300.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	800.000	0.0	0.0	0.0	0.0	0.0
GR	602.000	0.0	600.000	200.000	595.000	570.000	594.800	1100.000	589.700	1180.000
GR	590.800	1401.000	587.300	1409.000	586.000	1414.000	584.900	1422.000	584.400	1430.000
GR	584.400	1438.000	586.000	1444.000	587.600	1454.000	590.500	1461.000	590.100	1561.000
GR	595.000	3081.000	600.000	3181.000	600.000	3681.000	605.000	3731.000	0.0	0.0
EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

*PROF 1

CCHV 0.100 CEHV 0.300
*SECNO 20950.000

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

3470 ENCROACHMENT STATIONS 600.0 975.0 TYPE 1 TARGET 375.000

SECTION A 750 FEET UPSTREAM FROM M-47

20950.00	13.36	593.86	0.0	593.86	593.90	0.04	0.0	0.0	584.40
4200.	112.	3010.	1079.	159.	1552.	1324.	0.	0.	583.10
0.0	0.70	1.94	0.81	0.080	0.045	0.080	0.0	530.50	619.19
0.000127	0.	0.	0.	0	0	0	-0.01	347.79	966.97

*SECNO 22150.000

SECTION B

22150.00	14.82	594.02	0.0	0.0	594.06	0.04	0.15	0.00	584.10
4200.	250.	1803.	2148.	390.	825.	2969.	81.	9.	583.40
0.23	0.64	2.18	0.72	0.100	0.045	0.100	0.053	579.20	54.90
0.000150	950.	1300.	800.	2	0	0	-0.01	530.24	585.14

*SECNO 22850.000
3280 CROSS SECTION 22850.00 EXTENDED 8.68 FEET in ROB, negligable effect, high ground

SECTION C

22850.00	15.09	594.09	0.0	0.0	594.11	0.02	0.05	0.00	584.60
4200.	390.	939.	2871.	747.	585.	3112.	125.	17.	585.20
0.35	0.52	1.61	0.92	0.060	0.045	0.060	0.051	579.00	133.80
0.000084	450.	450.	450.	0	0	0	-0.07	863.20	1017.00

*SECNO 25180.000

3265 DIVIDED FLOW

SECTION D DOWNSTREAM GOLF COURSE BRIDGE

TRD. 594.7 L.C. 592.6 8'X48'

25180.00	13.17	594.27	0.0	0.0	594.28	0.01	0.17	0.00	585.17
4200.	3361.	829.	10.	5390.	551.	28.	352.	67.	588.60
1.04	0.62	1.50	0.36	0.060	0.045	0.060	0.053	581.10	245.29
0.000091	1700.	2400.	2100.	2	0	0	-0.01	1568.44	1860.15

*SECNO 25279.000

3265 DIVIDED FLOW

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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       ARCB      VOL       TWA       LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       MTN       ELMIN        SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID       ENDST

 25279.00    13.18     594.28     0.0       0.0     594.29     0.01      0.01      0.00     585.17
   4200.     3363.      827.      13.      5403.      552.      28.       366.      71.      588.60
    1.07     0.62      1.50      0.35     0.060     0.045     0.060     0.053    581.10    245.14
 0.000090     100.      100.      100.       0         0         0      -0.01    1570.36   1860.22

*SECNO 25280.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   589.00 MAX ELLC   610.00

 25280.00    13.18     594.28     0.0       0.0     594.29     0.01      0.00      0.00     585.17
   4200.     3738.      459.       3.      5369.      466.      16.       366.      71.      588.60
    1.07     0.70      0.99      0.16     0.060     0.045     0.060     0.053    581.10    245.13
 0.000120      1.        1.        1.        0         0         0    -132.35   1570.53   1860.23

*SECNO 25281.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   588.00 MAX ELLC   610.00

 25281.00    13.18     594.28     0.0       0.0     594.29     0.01      0.00      0.00     585.17
   4200.     3739.      458.       3.      5375.      466.      16.       367.      71.      588.60
    1.08     0.70      0.98      0.16     0.060     0.045     0.060     0.053    581.10    245.06
 0.000120      8.        8.        8.        0         0         0    -132.61   1571.47   1860.26

*SECNO 25380.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       585.17 ELREA       594.50

 25380.00    13.18     594.28     0.0       0.0     594.29     0.01      0.00      0.00     585.17
   4200.     3372.      828.       0.      5414.      552.       0.       370.      72.      588.60
    1.09     0.62      1.50      0.0      0.060     0.045     0.060     0.053    581.10    245.01
 0.000090      25.       25.       25.       0         0         0      -0.00    1505.99   1751.00

*SECNO 25780.000

3265 DIVIDED FLOW

          SECTION E MIDDLE GOLF COURSE BRIDGE

          TRD. 594.7   L.C. 592.6    8'X48'

 25780.00    14.70     594.30     0.0       0.0     594.31     0.01      0.01      0.00     594.70
   4200.     3577.      490.      133.     6300.      550.      402.      406.      80.      594.00
    1.20     0.57      0.89      0.33     0.040     0.035     0.040     0.054    579.60     17.14
 0.000026     200.      510.      525.       2         0.        0      -0.10    1619.96   1642.71

*SECNO 25879.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
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   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN       SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID      ENDST

 25879.00    13.30   594.30     0.0      0.0   594.31     0.01     0.00     0.00    588.80
    4200.    3570.     435.     195.   6089.     455.     479.     423.      84.    539.40
     1.25     0.59     0.95     0.41   0.040    0.035    0.040    0.053   581.00     17.11
 0.000031     100.     100.     100.       0        0        0    -0.10  1625.70   1642.82

*SECNO 25880.000

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   585.10 MAX ELLC   599.00

 25880.00    13.30   594.30     0.0      0.0   594.31     0.01     0.00     0.00    588.80
    4200.    3808.     245.     143.   6031.     394.     389.     423.      84.    589.40
     1.25     0.63     0.62     0.38   0.040    0.035    0.040    0.053   581.00     17.13
 0.000036       1.       1.       1.       0        0        0  -204.53  1625.63   1642.76

*SECNO 25881.000

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   585.10 MAX ELLC   599.00

 25881.00    13.30   594.30     0.0      0.0   594.31     0.01     0.00     0.00    588.80
    4200.    3803.     245.     143.   6032.     394.     389.     424.      84.    589.40
     1.25     0.63     0.62     0.38   0.040    0.035    0.040    0.053   581.00     17.12
 0.000036       8.       8.       8.       0        0        0  -204.56  1625.64   1642.77

*SECNO 25980.000
 25980.00    13.30   594.30     0.0      0.0   594.31     0.01     0.00     0.00    588.80
    4200.    3570.     435.     195.   6086.     455.     478.     424.      84.    589.40
     1.25     0.59     0.96     0.41   0.040    0.035    0.040    0.053   581.00     17.12
 0.000031       1.       1.       1.       0        0        0    -0.11  1625.64   1642.77

*SECNO 26000.000

3265 DIVIDED FLOW

 26000.00    14.70   594.30     0.0      0.0   594.31     0.01     0.00     0.00    587.00
    4200.    3534.     533.     134.   6316.     532.     411.     429.      85.    588.90
     1.26     0.56     1.00     0.33   0.040    0.035    0.040    0.053   579.60     17.12
 0.000025      25.      25.      25.       0        0        0    -0.10  1620.09   1642.77

*SECNO 26260.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN       SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICONT    CORAR    TOPWID      ENDST

          SECTION F UPSTREAM GOLF COURSE BRIDGE

          TRD.  594.9    L.C. 592.3      8'X46'

 26260.00    13.21   594.31     0.0      0.0   594.34     0.03     0.02     0.01    594.30
    4200.    2985.    1215.      0.   3145.     558.       2.     477.      99.    594.30
     1.35     0.95     2.18     0.14   0.040    0.035    0.040    0.051   581.10    710.21
 0.000159     390.     390.     250.       0        0        0    -0.01  1437.22   2147.43
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*SECNO 26360.000
 26360.00    13.22    594.32      0.0       0.0    594.35      0.03      0.02      0.00    592.30
    4200.    3024.    1170.       5.      3152.     540.       24.      485.      102.    594.30
     1.37     0.96     2.17      0.22     0.040    0.035     0.040     0.051    581.10    710.16
 0.000163     100.     100.     100.         0        0         0     -0.00   1501.99   2212.15


*SECNO 26361.000

3370 NORMAL BRIDGE,NRO  29 MIN ELTRD   590.00 MAX ELLC   604.00

 26361.00    13.23    594.33      0.0       0.0    594.35      0.02      0.00      0.00    592.30
    4200.    3622.     573.       5.      3158.     394.       24.      485.      102.    594.30
     1.37     1.15     1.46      0.22     0.040    0.035     0.040     0.051    581.10    709.92
 0.000231       1.       1.       1.         0        0         0   -152.06   1502.30   2212.23


*SECNO 26369.000

3370 NORMAL BRIDGE,NRO  29 MIN ELTRD   590.00 MAX ELLC   604.00

 26369.00    13.23    594.33      0.0       0.0    594.36      0.02      0.00      0.00    592.30
    4200.    3623.     566.       6.      3173.     394.       25.      486.      102.    594.30
     1.37     1.14     1.44      0.22     0.040    0.035     0.040     0.051    581.10    709.58
 0.000229       3.       8.       3.         0        0         0   -152.65   1502.76   2212.33


*SECNO 26370.000
 26370.00    13.23    594.33      0.0       0.0    594.36      0.03      0.00      0.00    592.30
    4200.    3031.    1163.       6.      3178.     541.       25.      486.      102.    594.30
     1.37     0.95     2.15      0.22     0.040    0.035     0.040     0.051    581.10    709.56
 0.000160       1.       1.       1.         0        0         0     -0.00   1502.78   2212.34


*SECNO 26700.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VCL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 26700.00    13.23    594.33      0.0       0.0    594.36      0.03      0.00      0.00    592.30
    4200.    3031.    1164.       6.      3177.     541.       25.      488.      103.    594.30
     1.38     0.95     2.15      0.22     0.040    0.035     0.040     0.051    581.10    709.60
 0.000160       25.      25.      25.         0        0         0     -0.00   1502.73   2212.33


*SECNO 27550.000

          SECTION G

 27550.00    11.22    594.52      0.0       0.0    594.53      0.01      0.16      0.00    588.30
    4200.    2980.     568.     652.      4385.     422.     1179.      654.      151.    586.90
     1.92     0.68     1.35      0.55     0.060    0.045     0.060     0.046    583.30   1204.69
 0.000084     1675.    1030.     650.         0        0         0     -0.10   1258.73   2463.42


*SECNO 28650.000

          SECTION H

 28650.00    10.23    594.63      0.0       0.0    594.64      0.02      0.11      0.00    590.80
    4200.    1011.     903.    2286.      1160.     494.     3622.      770.      184.    590.50
     2.19     0.87     1.83      0.53     0.060    0.045     0.060     0.049    584.40   1102.61
 0.000192     650.    1300.    1100.         0        0         0     -0.01   1864.83   2967.44
```

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, NORTH BRANCH

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 110

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	20950.000	589.87	0.0	589.93	308.38	39.95	2201.66	483.39	375.00	600.00	650.00	780.00	975.00
	20950.000	592.73	0.0	592.78	340.02	92.72	2920.37	946.90	375.00	600.00	650.00	780.00	975.00
A	20950.000	593.86	0.0	593.90	347.79	111.63	3009.81	1078.56	375.00	600.00	650.00	780.00	975.00
	20950.000	596.57	0.0	596.60	364.28	154.09	3117.15	1323.76	375.00	600.00	650.00	780.00	975.00
	22150.000	590.21	0.0	590.27	478.16	107.94	1506.42	1115.64	0.0	0.0	125.00	190.00	0.0
	22150.000	592.94	0.0	592.98	516.75	215.12	1798.78	1946.10	0.0	0.0	125.00	190.00	0.0
B	22150.000	594.02	0.0	594.06	530.24	249.65	1802.57	2147.78	0.0	0.0	125.00	190.00	0.0
	22150.000	596.66	0.0	596.68	572.02	322.73	1771.54	2505.73	0.0	0.0	125.00	190.00	0.0
	22850.000	590.36	0.0	590.40	466.75	136.55	853.54	1739.91	0.0	0.0	601.00	646.00	0.0
	22850.000	593.03	0.0	593.05	565.24	278.05	964.03	2717.92	0.0	0.0	601.00	646.00	0.0
C	22850.000	594.09	0.0	594.11	883.20	390.07	939.00	2870.93	0.0	0.0	601.00	646.00	0.0
	22850.000	596.69	0.0	596.70	960.73	861.77	826.57	2911.66	0.0	0.0	601.00	646.00	0.0
	25180.000	591.06	0.0	591.14	877.40	1483.97	1243.57	2.46	0.0	0.0	1700.00	1751.00	0.0
	25180.000	593.31	0.0	593.33	1436.26	2992.39	959.80	7.81	0.0	0.0	1700.00	1751.00	0.0
D	25180.000	594.27	0.0	594.28	1568.44	3361.49	828.64	9.88	0.0	0.0	1700.00	1751.00	0.0
	25180.000	596.76	0.0	596.76	1676.32	3910.61	614.16	75.23	0.0	0.0	1700.00	1751.00	0.0
	25279.000	591.13	0.0	591.20	890.33	1511.93	1215.52	2.55	0.0	0.0	1700.00	1751.00	0.0
	25279.000	593.33	0.0	593.35	1437.73	2995.60	956.57	7.83	0.0	0.0	1700.00	1751.00	0.0
	25279.000	594.28	0.0	594.29	1570.36	3362.82	827.25	9.92	0.0	0.0	1700.00	1751.00	0.0
	25279.000	596.76	0.0	596.76	1676.38	3910.72	613.98	75.30	0.0	0.0	1700.00	1751.00	0.0
	25280.000	591.13	0.0	591.21	890.44	1485.32	1242.07	2.61	0.0	0.0	1700.00	1751.00	0.0
	25280.000	593.34	0.0	593.35	1437.99	3334.80	622.40	2.80	0.0	0.0	1700.00	1751.00	0.0
	25280.000	594.28	0.0	594.29	1570.53	3738.24	459.11	2.65	0.0	0.0	1700.00	1751.00	0.0
	25280.000	596.76	0.0	596.76	1676.37	4268.32	256.82	74.86	0.0	0.0	1700.00	1751.00	0.0
	25281.000	591.13	0.0	591.21	890.85	1486.16	1241.23	2.61	0.0	0.0	1700.00	1751.00	0.0
	25281.000	593.34	0.0	593.35	1438.90	3337.04	620.17	2.79	0.0	0.0	1700.00	1751.00	0.0
	25281.000	594.28	0.0	594.29	1571.47	3738.91	458.42	2.67	0.0	0.0	1700.00	1751.00	0.0
	25281.000	596.76	0.0	596.76	1676.39	4268.32	256.79	74.89	0.0	0.0	1700.00	1751.00	0.0
	25380.000	591.15	0.0	591.23	890.55	1520.81	1209.19	0.0	0.0	0.0	1700.00	1751.00	0.0
	25380.000	593.34	0.0	593.36	1433.71	3005.32	954.68	0.0	0.0	0.0	1700.00	1751.00	0.0
	25380.000	594.28	0.0	594.29	1505.99	3372.05	827.95	0.0	0.0	0.0	1700.00	1751.00	0.0
	25380.000	596.76	0.0	596.76	1676.41	3910.79	613.87	75.34	0.0	0.0	1700.00	1751.00	0.0

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
25780.000	591.28	0.0	591.30	1226.87	2100.52	615.30	14.18	0.0	0.0	1415.00	1470.00	0.0
25780.000	593.37	0.0	593.38	1521.37	3325.15	544.37	90.47	0.0	0.0	1415.00	1470.00	0.0
25780.000	594.30	0.0	594.31	1619.96	3577.00	489.61	133.39	0.0	0.0	1415.00	1470.00	0.0
25780.000	596.77	0.0	596.77	1869.79	3946.51	396.46	255.03	0.0	0.0	1415.00	1470.00	0.0
25879.000	591.29	0.0	591.32	1255.40	2129.68	574.88	25.45	0.0	0.0	1418.00	1467.00	0.0
25879.000	593.37	0.0	593.38	1550.99	3333.13	483.74	143.12	0.0	0.0	1418.00	1467.00	0.0
25879.000	594.30	0.0	594.31	1625.70	3570.21	434.95	194.83	0.0	0.0	1418.00	1467.00	0.0
25879.000	596.77	0.0	596.77	1706.90	3949.84	350.08	300.07	0.0	0.0	1418.00	1467.00	0.0
25880.000	591.29	0.0	591.32	1255.44	2132.49	578.44	19.08	0.0	0.0	1418.00	1467.00	0.0
25880.000	593.37	0.0	593.38	1550.24	3524.25	330.53	105.22	0.0	0.0	1418.00	1467.00	0.0
25880.000	594.30	0.0	594.31	1625.63	3807.63	244.76	147.60	0.0	0.0	1418.00	1467.00	0.0
25880.000	596.77	0.0	596.77	1706.86	4187.90	145.29	266.80	0.0	0.0	1418.00	1467.00	0.0
25881.000	591.30	0.0	591.32	1255.63	2132.70	578.19	19.10	0.0	0.0	1418.00	1467.00	0.0
25881.000	593.38	0.0	593.38	1550.30	3524.29	330.47	105.24	0.0	0.0	1418.00	1467.00	0.0
25881.000	594.30	0.0	594.31	1625.64	3807.66	244.72	147.62	0.0	0.0	1418.00	1467.00	0.0
25881.000	596.77	0.0	596.77	1706.86	4187.90	145.29	266.80	0.0	0.0	1418.00	1467.00	0.0
25980.000	591.30	0.0	591.32	1255.63	2129.93	574.59	25.48	0.0	0.0	1418.00	1467.00	0.0
25980.000	593.37	0.0	593.38	1550.33	3332.90	484.25	142.85	0.0	0.0	1418.00	1467.00	0.0
25980.000	594.30	0.0	594.31	1625.64	3570.13	435.15	194.72	0.0	0.0	1418.00	1467.00	0.0
25980.000	596.77	0.0	596.77	1706.86	3949.84	350.12	300.04	0.0	0.0	1418.00	1467.00	0.0
26000.000	591.30	0.0	591.32	1229.43	2071.75	643.49	14.76	0.0	0.0	1418.00	1467.00	0.0
26000.000	593.38	0.0	593.39	1522.16	3281.29	587.76	90.94	0.0	0.0	1418.00	1467.00	0.0
26000.000	594.30	0.0	594.31	1620.09	3533.52	532.60	133.88	0.0	0.0	1418.00	1467.00	0.0
26000.000	596.77	0.0	596.77	1868.91	3919.41	424.68	255.91	0.0	0.0	1418.00	1467.00	0.0
26260.000	591.17	0.0	591.53	436.30	644.63	2085.37	0.0	0.0	0.0	2077.00	2134.00	0.0
26260.000	593.37	0.0	593.44	1236.34	2387.45	1572.55	0.0	0.0	0.0	2077.00	2134.00	0.0
26260.000	594.31	0.0	594.34	1437.22	2985.18	1214.53	0.29	0.0	0.0	2077.00	2134.00	0.0
26260.000	596.77	0.0	596.78	1583.20	3812.28	747.94	39.77	0.0	0.0	2077.00	2134.00	0.0
26360.000	591.38	0.0	591.67	443.77	821.72	1908.28	0.0	0.0	0.0	2077.00	2134.00	0.0
26360.000	593.41	0.0	593.48	1249.98	2469.73	1490.27	0.0	0.0	0.0	2077.00	2134.00	0.0
26360.000	594.32	0.0	594.35	1501.99	3024.46	1170.38	5.16	0.0	0.0	2077.00	2134.00	0.0
26360.000	596.77	0.0	596.78	1612.86	3792.54	715.92	91.53	0.0	0.0	2077.00	2134.00	0.0
26361.000	591.37	0.0	591.67	443.72	926.83	1803.18	0.0	0.0	0.0	2077.00	2134.00	0.0
26361.000	593.43	0.0	593.48	1256.22	3060.37	899.63	0.0	0.0	0.0	2077.00	2134.00	0.0
26361.000	594.33	0.0	594.35	1502.30	3621.60	573.06	5.34	0.0	0.0	2077.00	2134.00	0.0
26361.000	596.77	0.0	596.78	1612.93	4264.63	281.97	53.40	0.0	0.0	2077.00	2134.00	0.0
26369.000	591.38	0.0	591.69	443.84	929.04	1800.96	0.0	0.0	0.0	2077.00	2134.00	0.0
26369.000	593.44	0.0	593.48	1257.09	3062.20	897.80	0.0	0.0	0.0	2077.00	2134.00	0.0
26369.000	594.33	0.0	594.36	1502.76	3627.96	566.45	5.59	0.0	0.0	2077.00	2134.00	0.0
26369.000	596.77	0.0	596.78	1612.98	4264.65	281.93	53.42	0.0	0.0	2077.00	2134.00	0.0
26370.000	591.40	0.0	591.69	444.22	829.44	1900.56	0.0	0.0	0.0	2077.00	2134.00	0.0
26370.000	593.42	0.0	593.49	1255.59	2481.27	1473.72	0.0	0.0	0.0	2077.00	2134.00	0.0
26370.000	594.33	0.0	594.36	1502.78	3030.94	1163.42	5.64	0.0	0.0	2077.00	2134.00	0.0
26370.000	596.77	0.0	596.78	1612.98	3792.74	715.65	91.60	0.0	0.0	2077.00	2134.00	0.0

	SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
	26700.000	591.45	0.0	591.72	445.97	859.21	1870.79	0.0	0.0	0.0	2077.00	2134.00	0.0
	26700.000	593.43	0.0	593.50	1256.37	2482.87	1477.13	0.0	0.0	0.0	2077.00	2134.00	0.0
	26700.000	594.33	0.0	594.36	1502.73	3030.52	1163.87	5.61	0.0	0.0	2077.00	2134.00	0.0
	26700.000	596.77	0.0	596.78	1612.98	3792.74	715.65	91.60	0.0	0.0	2077.00	2134.00	0.0
	27550.000	592.28	0.0	592.29	1144.45	1887.18	577.86	264.97	0.0	0.0	2090.00	2133.00	0.0
G	27550.000	593.77	0.0	593.78	1214.43	2801.80	603.48	554.72	0.0	0.0	2090.00	2133.00	0.0
	27550.000	594.52	0.0	594.53	1258.73	2979.90	568.39	651.71	0.0	0.0	2090.00	2133.00	0.0
	27550.000	596.82	0.0	596.82	1518.65	3261.83	473.28	864.39	0.0	0.0	2090.00	2133.00	0.0
	28650.000	592.58	0.0	592.64	1194.81	655.56	1082.22	992.22	0.0	0.0	1401.00	1461.00	0.0
	28650.000	593.93	0.0	593.96	1636.00	976.18	1018.73	1965.09	0.0	0.0	1401.00	1461.00	0.0
H	28650.000	594.63	0.0	594.64	1864.83	1011.08	903.10	2285.82	0.0	0.0	1401.00	1461.00	0.0
	28650.000	596.85	0.0	596.85	2684.45	1154.32	573.55	2872.13	0.0	0.0	1401.00	1461.00	0.0

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
20950.000	0.0	0.0	0.0	580.50	2730.00	589.87	0.0	589.93	2.63	2.13	1715.08	1682.43
20950.000	0.0	0.0	0.0	580.50	3960.00	592.73	0.0	592.78	1.66	2.08	2646.61	3070.66
20950.000	0.0	0.0	0.0	580.50	4200.00	593.86	0.0	593.90	1.27	1.94	3035.27	3729.63
20950.000	0.0	0.0	0.0	580.50	4600.00	596.57	0.0	596.60	0.59	1.64	4002.39	5546.56
22150.000	1300.00	0.0	0.0	579.20	2730.00	590.21	0.0	590.27	3.45	2.61	2258.71	1470.71
22150.000	1300.00	0.0	0.0	579.20	3960.00	592.94	0.0	592.98	2.01	2.38	3618.52	2791.41
22150.000	1300.00	0.0	0.0	579.20	4200.00	594.02	0.0	594.06	1.50	2.18	4183.69	3425.89
22150.000	1300.00	0.0	0.0	579.20	4600.00	596.66	0.0	596.68	0.78	1.78	5623.85	5224.23
22850.000	450.00	0.0	0.0	579.00	2730.00	590.36	0.0	590.40	2.14	2.05	2302.48	1867.19
22850.000	450.00	0.0	0.0	579.00	3960.00	593.03	0.0	593.05	1.17	1.80	3603.22	3654.81
22850.000	450.00	0.0	0.0	579.00	4200.00	594.09	0.0	594.11	0.84	1.61	4443.67	4586.15
22850.000	450.00	0.0	0.0	579.00	4600.00	596.69	0.0	596.70	0.35	1.18	6875.89	7739.87
25180.000	2400.00	0.0	0.0	581.10	2730.00	591.06	0.0	591.14	6.63	3.21	1340.10	1059.94
25180.000	2400.00	0.0	0.0	581.10	3960.00	593.31	0.0	593.33	1.66	1.91	4543.18	3071.64
25180.000	2400.00	0.0	0.0	581.10	4200.00	594.27	0.0	594.28	0.91	1.50	5969.12	4403.93
25180.000	2400.00	0.0	0.0	581.10	4600.00	596.76	0.0	596.76	0.25	0.91	10060.02	9192.24
25279.000	100.00	0.0	0.0	581.10	2730.00	591.13	0.0	591.20	6.15	3.11	1902.25	1101.18
25279.000	100.00	0.0	0.0	581.10	3960.00	593.33	0.0	593.35	1.64	1.90	4563.67	3039.45
25279.000	100.00	0.0	0.0	581.10	4200.00	594.28	0.0	594.29	0.90	1.50	5982.41	4417.05
25279.000	100.00	0.0	0.0	581.10	4600.00	596.76	0.0	596.76	0.25	0.91	10064.15	9197.85
25280.000	1.00	588.00	610.00	581.10	2730.00	591.13	0.0	591.21	6.42	3.18	1898.84	1077.79
25280.000	1.00	588.00	610.00	581.10	3960.00	593.34	0.0	593.35	2.21	1.34	4494.32	2663.89
25280.000	1.00	588.00	610.00	581.10	4200.00	594.28	0.0	594.29	1.20	0.99	5851.21	3830.23
25280.000	1.00	588.00	610.00	581.10	4600.00	596.76	0.0	596.76	0.31	0.45	9913.65	8201.24
25281.000	8.00	588.00	610.00	581.10	2730.00	591.13	0.0	591.21	6.40	3.17	1900.78	1079.04
25281.000	8.00	588.00	610.00	581.10	3960.00	593.34	0.0	593.35	2.19	1.33	4506.39	2673.47
25281.000	8.00	588.00	610.00	581.10	4200.00	594.28	0.0	594.29	1.20	0.98	5857.48	3835.96
25281.000	8.00	588.00	610.00	581.10	4600.00	596.76	0.0	596.76	0.31	0.45	9915.29	8203.34
25380.000	25.00	0.0	0.0	581.10	2730.00	591.15	0.0	591.23	6.03	3.08	1915.15	1111.57
25380.000	25.00	0.0	0.0	581.10	3960.00	593.34	0.0	593.36	1.63	1.89	4573.62	3104.40
25380.000	25.00	0.0	0.0	581.10	4200.00	594.28	0.0	594.29	0.90	1.50	5966.02	4418.66
25380.000	25.00	0.0	0.0	581.10	4600.00	596.76	0.0	596.76	0.25	0.91	10066.60	9201.18
25780.000	510.00	0.0	0.0	579.60	2730.00	591.28	0.0	591.30	1.14	1.58	2913.78	2559.56
25780.000	510.00	0.0	0.0	579.60	3960.00	593.37	0.0	593.38	0.43	1.09	5782.55	6061.34
25780.000	510.00	0.0	0.0	579.60	4200.00	594.30	0.0	594.31	0.26	0.89	7252.61	8249.57
25780.000	510.00	0.0	0.0	579.60	4600.00	596.77	0.0	596.77	0.08	0.58	11476.36	16048.69
25879.000	100.00	0.0	0.0	581.00	2730.00	591.29	0.0	591.32	1.99	1.97	2599.12	1934.38
25879.000	100.00	0.0	0.0	581.00	3960.00	593.37	0.0	593.38	0.54	1.18	5544.92	5376.86
25879.000	100.00	0.0	0.0	581.00	4200.00	594.30	0.0	594.31	0.31	0.95	7023.72	7553.24
25879.000	100.00	0.0	0.0	581.00	4600.00	596.77	0.0	596.77	0.09	0.61	11111.09	15200.84
25880.000	1.00	585.10	599.00	581.00	2730.00	591.29	0.0	591.32	2.02	1.88	2572.33	1922.61
25880.000	1.00	585.10	599.00	581.00	3960.00	593.37	0.0	593.38	0.62	0.85	5396.65	5036.04
25880.000	1.00	585.10	599.00	581.00	4200.00	594.30	0.0	594.31	0.36	0.62	6814.13	7016.67
25880.000	1.00	585.10	599.00	581.00	4600.00	596.77	0.0	596.77	0.10	0.30	10877.88	14226.51

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
25881.000	8.00	585.10	599.00	581.00	2730.00	591.30	0.0	591.32	2.01	1.88	2573.83	1924.04
25881.000	8.00	585.10	599.00	581.00	3960.00	593.38	0.0	593.38	0.62	0.85	5397.37	5036.97
25881.000	8.00	585.10	599.00	581.00	4200.00	594.30	0.0	594.31	0.36	0.62	6814.90	7017.83
25881.000	8.00	585.10	599.00	581.00	4600.00	596.77	0.0	596.77	0.10	0.30	10877.88	14226.51
25980.000	1.00	0.0	0.0	581.00	2730.00	591.30	0.0	591.32	1.99	1.87	2600.94	1936.11
25980.000	1.00	0.0	0.0	581.00	3960.00	593.37	0.0	593.38	0.54	1.18	5536.59	5365.51
25980.000	1.00	0.0	0.0	581.00	4200.00	594.30	0.0	594.31	0.31	0.96	7019.35	7546.24
25980.000	1.00	0.0	0.0	581.00	4600.00	596.77	0.0	596.77	0.09	0.61	11109.42	15197.33
26000.000	25.00	0.0	0.0	579.60	2730.00	591.30	0.0	591.32	1.08	1.67	2936.11	2623.17
26000.000	25.00	0.0	0.0	579.60	3960.00	593.38	0.0	593.39	0.41	1.21	5791.15	6159.00
26000.000	25.00	0.0	0.0	579.60	4200.00	594.30	0.0	594.31	0.25	1.00	7258.59	8366.67
26000.000	25.00	0.0	0.0	579.60	4600.00	596.77	0.0	596.77	0.08	0.65	11465.95	16159.20
26260.000	390.00	0.0	0.0	581.10	2730.00	591.17	0.0	591.53	13.87	5.42	312.01	732.95
26260.000	390.00	0.0	0.0	581.10	3960.00	593.37	0.0	593.44	3.57	3.12	2425.90	2095.94
26260.000	390.00	0.0	0.0	581.10	4200.00	594.31	0.0	594.34	1.59	2.18	3704.86	3331.02
26260.000	390.00	0.0	0.0	581.10	4600.00	596.77	0.0	596.78	0.29	1.07	7430.09	8602.82
26360.000	100.00	0.0	0.0	581.10	2730.00	591.38	0.0	591.67	13.00	5.06	883.44	757.28
26360.000	100.00	0.0	0.0	581.10	3960.00	593.41	0.0	593.48	3.59	3.05	2461.00	2088.61
26360.000	100.00	0.0	0.0	581.10	4200.00	594.32	0.0	594.35	1.63	2.17	3716.29	3294.23
26360.000	100.00	0.0	0.0	581.10	4600.00	596.77	0.0	596.78	0.28	1.05	7531.02	8657.82
26361.000	1.00	590.00	604.00	581.10	2730.00	591.37	0.0	591.67	16.59	5.27	848.19	670.26
26361.000	1.00	590.00	604.00	581.10	3960.00	593.43	0.0	593.48	5.32	2.29	2393.38	1716.14
26361.000	1.00	590.00	604.00	581.10	4200.00	594.33	0.0	594.35	2.31	1.46	3575.60	2761.05
26361.000	1.00	590.00	604.00	581.10	4600.00	596.77	0.0	596.78	0.36	0.54	7373.19	7697.05
26369.000	8.00	590.00	604.00	581.10	2730.00	591.38	0.0	591.69	16.53	5.26	849.67	671.49
26369.000	8.00	590.00	604.00	581.10	3960.00	593.44	0.0	593.48	5.30	2.29	2397.64	1719.52
26369.000	8.00	590.00	604.00	581.10	4200.00	594.33	0.0	594.36	2.29	1.44	3591.52	2774.45
26369.000	8.00	590.00	604.00	581.10	4600.00	596.77	0.0	596.78	0.36	0.54	7374.76	7699.55
26370.000	1.00	0.0	0.0	581.10	2730.00	591.40	0.0	591.69	12.82	5.03	389.28	762.47
26370.000	1.00	0.0	0.0	581.10	3960.00	593.42	0.0	593.49	3.51	3.02	2489.59	2113.52
26370.000	1.00	0.0	0.0	581.10	4200.00	594.33	0.0	594.36	1.60	2.15	3744.90	3325.05
26370.000	1.00	0.0	0.0	581.10	4600.00	596.77	0.0	596.78	0.28	1.05	7534.56	8663.80
26700.000	25.00	0.0	0.0	581.10	2730.00	591.45	0.0	591.72	12.16	4.92	912.15	783.04
26700.000	25.00	0.0	0.0	581.10	3960.00	593.43	0.0	593.50	3.50	3.01	2493.57	2117.00
26700.000	25.00	0.0	0.0	581.10	4200.00	594.33	0.0	594.36	1.60	2.15	3743.07	3323.07
26700.000	25.00	0.0	0.0	581.10	4600.00	596.77	0.0	596.78	0.28	1.05	7534.56	8663.80
27550.000	1030.00	0.0	0.0	583.30	2730.00	592.28	0.0	592.29	2.04	1.77	3313.19	1911.05
27550.000	1030.00	0.0	0.0	583.30	3960.00	593.77	0.0	593.78	1.22	1.55	5070.93	3578.62
27550.000	1030.00	0.0	0.0	583.30	4200.00	594.52	0.0	594.53	0.84	1.35	5986.88	4593.38
27550.000	1030.00	0.0	0.0	583.30	4600.00	596.82	0.0	596.82	0.29	0.91	9151.63	8578.30
28650.000	1300.00	0.0	0.0	584.40	2730.00	592.58	0.0	592.64	7.20	2.92	2130.07	1017.36
28650.000	1300.00	0.0	0.0	584.40	3960.00	593.93	0.0	593.96	3.30	2.26	4046.24	2181.50
28650.000	1300.00	0.0	0.0	584.40	4200.00	594.63	0.0	594.64	1.92	1.83	5275.34	3028.15
28650.000	1300.00	0.0	0.0	584.40	4600.00	596.85	0.0	596.85	0.35	0.92	10825.82	7764.30

BAD RIVER-NORTH BRANCH

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
20950.000	2730.00	589.87	0.0	0.0	0.0	308.38	0.0
20950.000	3960.00	592.73	2.86	0.0	0.0	340.02	0.0
20950.000	4200.00	593.86	1.13	0.0	0.0	347.79	0.0
20950.000	4600.00	596.57	2.71	0.0	0.0	364.28	0.0
22150.000	2730.00	590.21	0.0	0.34	0.0	478.16	1300.00
22150.000	3960.00	592.94	2.73	0.21	0.0	516.75	1300.00
22150.000	4200.00	594.02	1.08	0.16	0.0	530.24	1300.00
22150.000	4600.00	596.66	2.64	0.09	0.0	572.02	1300.00
22850.000	2730.00	590.36	0.0	0.15	0.0	466.75	450.00
22850.000	3960.00	593.03	2.67	0.09	0.0	565.24	450.00
22850.000	4200.00	594.09	1.06	0.07	0.0	863.20	450.00
22850.000	4600.00	596.69	2.61	0.04	0.0	960.73	450.00
25180.000	2730.00	591.06	0.0	0.69	0.0	377.40	2400.00
25180.000	3960.00	593.31	2.25	0.28	0.0	1436.26	2400.00
25180.000	4200.00	594.27	0.96	0.18	0.0	1568.44	2400.00
25180.000	4600.00	596.76	2.49	0.06	0.0	1676.32	2400.00
25279.000	2730.00	591.13	0.0	0.07	0.0	890.33	100.00
25279.000	3960.00	593.33	2.20	0.02	0.0	1437.73	100.00
25279.000	4200.00	594.28	0.95	0.01	0.0	1570.36	100.00
25279.000	4600.00	596.76	2.48	0.00	0.0	1676.38	100.00
25280.000	2730.00	591.13	0.0	-0.00	0.0	890.44	1.00
25280.000	3960.00	593.34	2.21	0.01	0.0	1437.99	1.00
25280.000	4200.00	594.28	0.95	0.00	0.0	1570.53	1.00
25280.000	4600.00	596.76	2.48	0.00	0.0	1676.37	1.00
25281.000	2730.00	591.13	0.0	0.01	0.0	890.85	8.00
25281.000	3960.00	593.34	2.21	0.00	0.0	1438.90	8.00
25231.000	4200.00	594.28	0.94	0.00	0.0	1571.47	8.00
25281.000	4600.00	596.76	2.48	0.00	0.0	1676.39	8.00
25380.000	2730.00	591.15	0.0	0.02	0.0	890.55	25.00
25380.000	3960.00	593.34	2.18	0.0	0.0	1433.71	25.00
25380.000	4200.00	594.28	0.94	0.00	0.0	1505.99	25.00
25380.000	4600.00	596.76	2.48	-0.00	0.0	1676.41	25.00
25780.000	2730.00	591.28	0.0	0.13	0.0	1226.87	510.00
25780.000	3960.00	593.37	2.09	0.03	0.0	1521.37	510.00
25780.000	4200.00	594.30	0.93	0.02	0.0	1619.96	510.00
25780.000	4600.00	596.77	2.46	0.00	0.0	1869.79	510.00
25879.000	2730.00	591.29	0.0	0.01	0.0	1255.40	100.00
25879.000	3960.00	593.37	2.08	0.00	0.0	1550.99	100.00
25879.000	4200.00	594.30	0.93	0.00	0.0	1625.70	100.00
25879.000	4600.00	596.77	2.46	0.00	0.0	1706.90	100.00
25830.000	2730.00	591.29	0.0	-0.00	0.0	1255.44	1.00
25880.000	3960.00	593.37	2.08	0.00	0.0	1550.24	1.00
25880.000	4200.00	594.30	0.93	0.00	0.0	1625.63	1.00
25830.000	4600.00	596.77	2.46	0.0	0.0	1706.86	1.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
25881.000	2730.00	591.30	0.0	0.00	0.0	1255.63	8.00
25881.000	3960.00	593.38	2.08	0.00	0.0	1550.30	8.00
25881.000	4200.00	594.30	0.93	0.00	0.0	1625.64	8.00
25881.000	4600.00	596.77	2.46	0.0	0.0	1706.86	8.00
25980.000	2730.00	591.30	0.0	0.00	0.0	1255.63	1.00
25980.000	3960.00	593.37	2.08	-0.00	0.0	1550.33	1.00
25980.000	4200.00	594.30	0.93	-0.00	0.0	1625.64	1.00
25980.000	4600.00	596.77	2.46	0.0	0.0	1706.86	1.00
26000.000	2730.00	591.30	0.0	0.01	0.0	1229.43	25.00
26000.000	3960.00	593.38	2.07	0.00	0.0	1522.16	25.00
26000.000	4200.00	594.30	0.93	0.00	0.0	1620.09	25.00
26000.000	4600.00	596.77	2.46	0.0	0.0	1868.91	25.00
26260.000	2730.00	591.17	0.0	-0.13	0.0	436.30	390.00
26260.000	3960.00	593.37	2.20	-0.01	0.0	1236.34	390.00
26260.000	4200.00	594.31	0.94	0.00	0.0	1437.22	390.00
26260.000	4600.00	596.77	2.46	0.00	0.0	1583.20	390.00
26360.000	2730.00	591.38	0.0	0.21	0.0	443.77	100.00
26360.000	3960.00	593.41	2.03	0.04	0.0	1249.98	100.00
26360.000	4200.00	594.32	0.92	0.02	0.0	1501.99	100.00
26360.000	4600.00	596.77	2.45	0.00	0.0	1612.86	100.00
26361.000	2730.00	591.37	0.0	-0.01	0.0	443.72	1.00
26361.000	3960.00	593.43	2.06	0.03	0.0	1256.22	1.00
26361.000	4200.00	594.33	0.90	0.01	0.0	1502.30	1.00
26361.000	4600.00	596.77	2.44	0.00	0.0	1612.93	1.00
26369.000	2730.00	591.38	0.0	0.01	0.0	443.84	8.00
26369.000	3960.00	593.44	2.05	0.00	0.0	1257.09	8.00
26369.000	4200.00	594.33	0.90	0.00	0.0	1502.76	8.00
26369.000	4600.00	596.77	2.44	0.00	0.0	1612.98	8.00
26370.000	2730.00	591.40	0.0	0.02	0.0	444.22	1.00
26370.000	3960.00	593.42	2.02	-0.01	0.0	1255.59	1.00
26370.000	4200.00	594.33	0.91	-0.01	0.0	1502.78	1.00
26370.000	4600.00	596.77	2.44	-0.00	0.0	1612.98	1.00
26700.000	2730.00	591.45	0.0	0.05	0.0	445.97	25.00
26700.000	3960.00	593.43	1.98	0.01	0.0	1256.37	25.00
26700.000	4200.00	594.33	0.90	0.00	0.0	1502.73	25.00
26700.000	4600.00	596.77	2.44	0.00	0.0	1612.98	25.00
27550.000	2730.00	592.28	0.0	0.83	0.0	1144.45	1030.00
27550.000	3960.00	593.77	1.49	0.34	0.0	1214.43	1030.00
27550.000	4200.00	594.52	0.75	0.19	0.0	1258.73	1030.00
27550.000	4600.00	596.82	2.30	0.04	0.0	1518.65	1030.00
28650.000	2730.00	592.58	0.0	0.30	0.0	1194.81	1300.00
28650.000	3960.00	593.93	1.35	0.16	0.0	1636.00	1300.00
28650.000	4200.00	594.63	0.69	0.11	0.0	1864.83	1300.00
28650.000	4600.00	596.85	2.22	0.03	0.0	2684.45	1300.00

SUMMARY OF ERRORS

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, S. BRANCH BAD RIVER, BEAVER CREEK

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

HYDRAULIC ANALYSIS OF BAD RIVER, SOUTH FORK

BAD RIVER, AND BEAVER CREEK THROUGH THE

VILLAGE OF ST. CHARLES, MICHIGAN

SAGINAW Co.

INCLOSED:
Hydraulic Report
Map
2 short HEC-2 runs

Note:
HEC 2 analysis downstream of the RR crossing included in file 87-11-699 - Saginaw Co.
Analyzes Bad River without effects of Shiawassee.
MAS
2/23/88

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001
(616) 385-0011

October 20, 1980

Mr. Daniel H. Morgan, P.E.
Flood Insurance Unit
Flood Plain Management Section
Water Management Division
Michigan Department of Natural Resources
P. O. Box 30028

Re: Village of St. Charles Flood Insurance Study

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the Bad River, South Fork Bad River, and the Beaver Creek through the Village of St. Charles, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood
2. Summary tables for 10-, 50-, 100- and 500-year floods
3. Topographic map
4. Hydraulic Aanlysis Report

In this report, the starting elevations are the backwater elevations of Shiawassee Flats. Because the 100-yera backwater covers almost the whole study area, the HEC-2 runs only cover two or three cross sections and IPLOT and Floodway Delineation are not included.

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES INC.

William J. McDonough

William J. McDonough, P.E.
Associate

WJM/tk

Enclosure: as listed above

RECEIVED
OCT 27 1980
WATER MANAGEMENT

March 1970
St Charles Gage No 9
HW = 584.7

HYDRAULIC ANALYSIS

gage No 9 = 600.1
gage No 10 - 590.6
No 11 - 584.0

I. INTRODUCTION

The streams being studied in this report are Bad River, South Fork Bad River, and Beaver Creek in the Village of St. Charles, Michigan. The 10-, 50-, 100-, and 500-year flows which have been approved by the Michigan Department of Natural Resources are shown below:

	Peak Flows (cfs)			
River	10-year	50-year	100-year	500-year
Bad River:				
D/S of Beaver Creek	6300	9000	9200	9900
U/S of Beaver Creek	4400	6400	6700	7200
U/S of South Fork - Bad River	2730	3960	4200	4600
South Fork - Bad River	2400	3600	3800	4300
Beaver Creek	1910	2770	2950	3350

C of E 100 yr = 5700 cfs at Rail Road Track

II. SHIAWASSEE FLATS

The Saginaw River and its four main tributaries, the Cass River, Shiawassee River, Tittabawassee River and the Flint River converge in the area of the Shiawassee Flats. The U.S. Army Corps of Engineers 1954 report on the Saginaw River and its tributaries states that for practically all level flows on the Saginaw River of 25,000 cfs or more, at least two of the principle tributaries will also be flooding. For flows of 40,000 cfs or more, all the principle tributaries will be flooding (Ref. 1). Although the Bad Rivers system is not one of the principle tributaries, it is appropriate to consider that the Bad River will be flooding at the same time.

why not the new study

Flood peak on the Bad appears 2 days before the flats

III. STARTING POINT

The water surface elevations for the 10-, 50-, 100-, and 500-year floods at the confluence of the Saginaw River and the Tittabawassee River have been determined by Johnson & Anderson as 589.87, 592.93, 593.86, and 596.57, respectively (Ref. 2). These elevations were extended to the Bad River system as discussed in the previous section.

100 yr

why

After the 100-year backwater of the Shiwassee Flats has been delineated in the topographic map, it is found that the part of Beaver Creek which is within the study limits is under the backwater and hydraulic analysis is not necessary.

The starting points for Bad River and South Fork are picked at the points 730 feet and 380 feet upstream from the upstream face of M-52 Bridge, respectively.

[illegible] rate should [illegible] [illegible] d/s [illegible] [illegible] [illegible] for a stage result [illegible] at 1 to 1½ dys

IV. ANALYSIS

Only two stations for Bad River and four stations for South Fork are included in the HEC-2 hydraulic analysis (Ref. 3). The cross sections used in this study were obtained by combininig the results from ground survey and aerial photographic survey. The n factors used were determined from field investigation and aerial photographs.

Reference

1. Survey Report on the Saginaw River, Michigan and Its Tributaries with a View to Improvement for the Control of Floods and Other Purposes, U.S. Army Corps of Engineers, 1954.

2. Cass River Hydraulic Report, Spaulding Township, Johnson & Anderson, Inc., September 1977.

New [illegible] studies show Q_{100} = 5700 cfs [illegible] [illegible] [illegible] at 598.2 prop 514 existing

No. Br. Bad River
St. Charles

The FIS 100-yr flood profile was reproduced using cross sections B, C, and D.

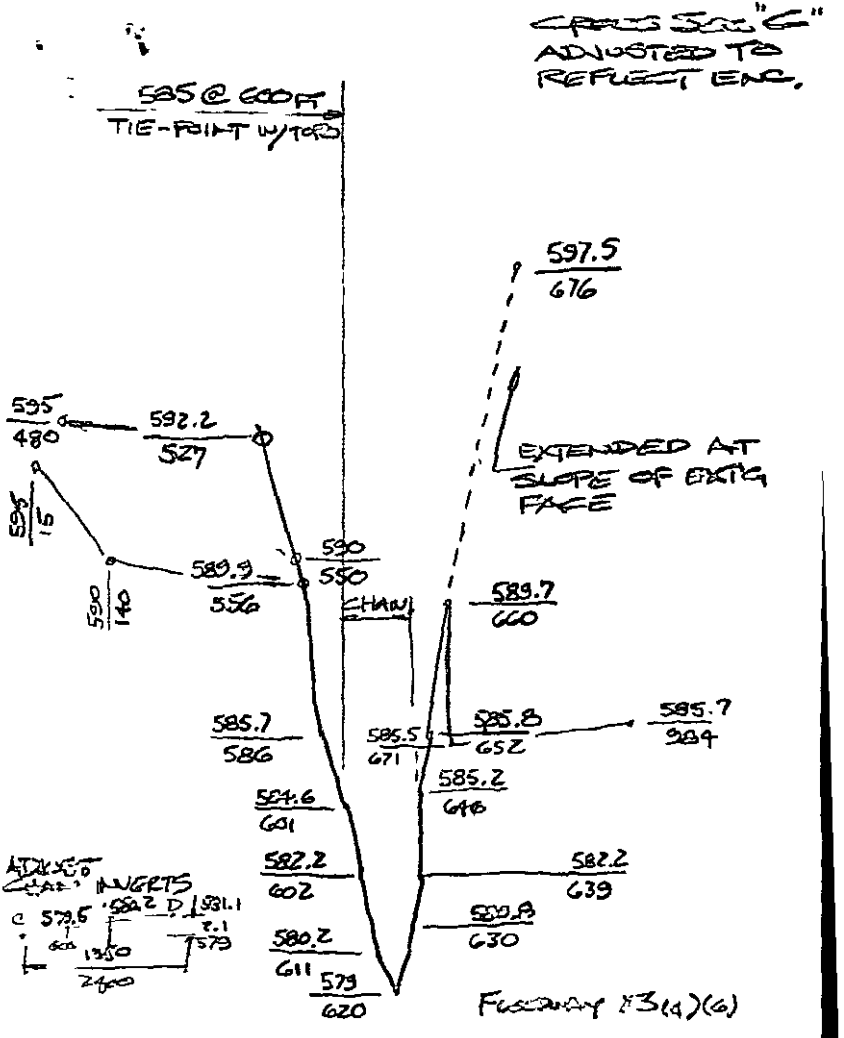
Two sections were added between C and D based upon section C which shows an existing dike. The overbank areas and reach lengths were adjusted based upon topo from the FIS

The 100-year profile was re-run using the above adjusted data to establish a representative base for comparison. This produced in EGL/WS of 594.28 / 594.26 compared to original of 594.41 / 594.[illegible] at Sec D (#25100) for Q_{100} of 4200 cfs

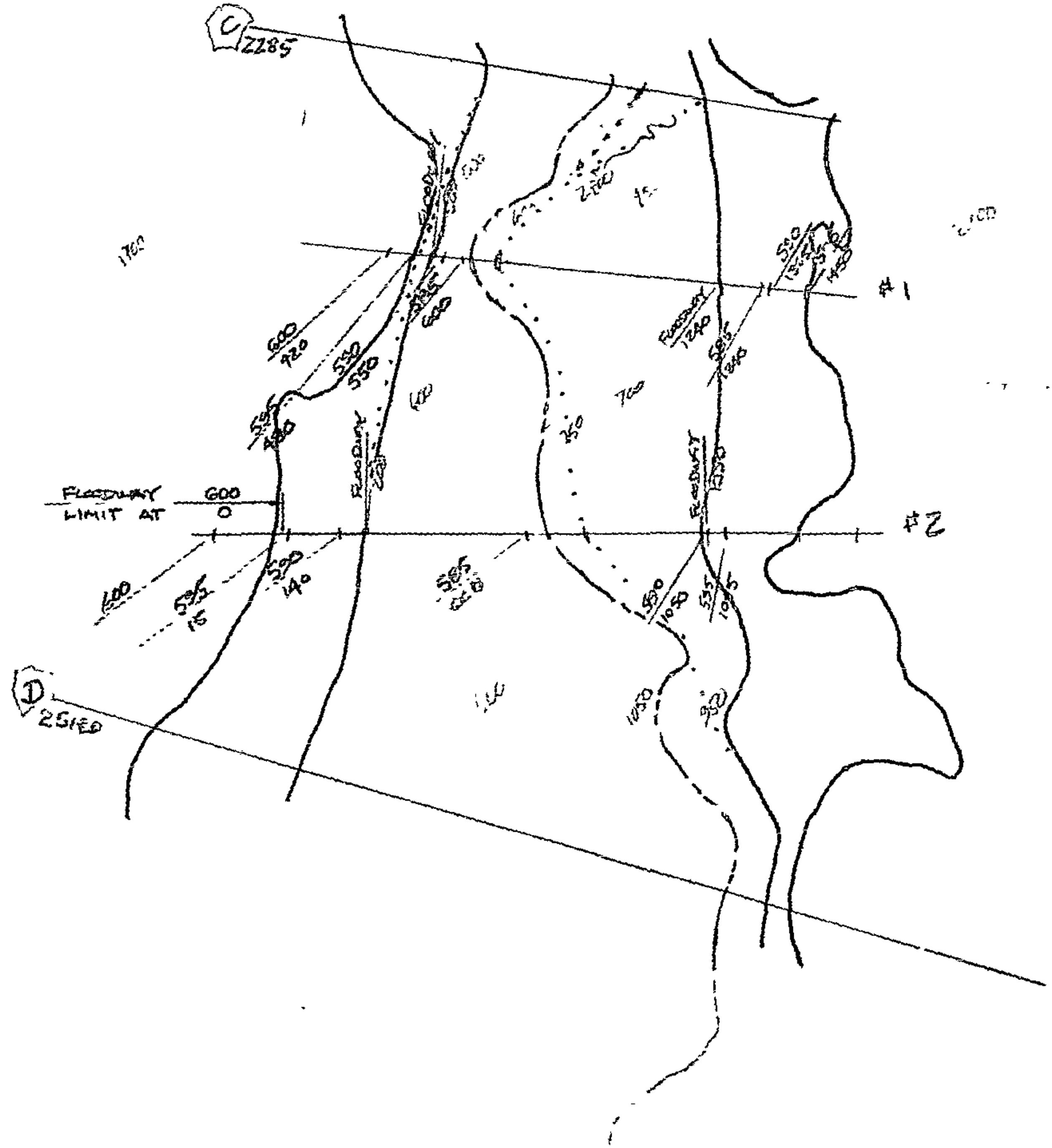
Using above data, profiles for most recent Q estimates of Q_{100} and 100-yr floods were run starting with slope at Sec B (#22150) from original profile.

The above data was re-run with the dikes raised above flood levels by extending the slope of the outer face.

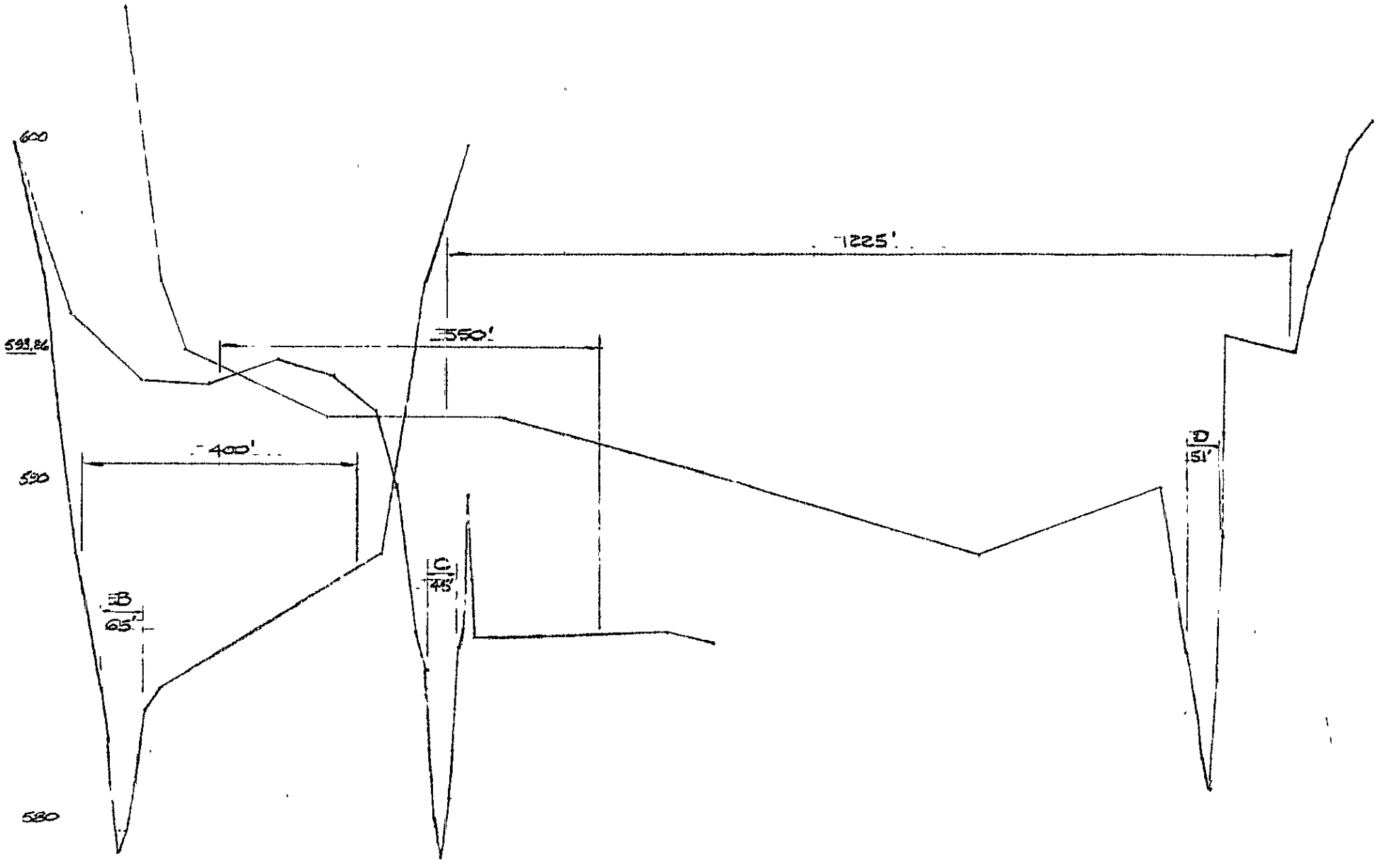
M. Anderson
3-11-87



CROSS SEC "G"
ADJUSTED TO
REFLECT ENC.
585 @ 600 FT
TIE-POINT W/TOPO
597.5
676
595
480
592.2
527
EXTENDED AT
SLOPE OF EXTG
FACE
595
15
590
550
589.9
556
590
140
CHAIN
589.7
660
585.7
586
585.5
671
585.8
652
585.7
984
585.2
646
584.6
601
582.2
602
582.2
639
580.8
630
580.2
611
579
620
ADJUST
CHAIN INVERTS
C 579.5
582.2 D 581.1
2.1
579
600
1350
2400
FLOODWAY #3(4)(6)



C
2285
D
#1
#2
FLOODWAY LIMIT AT
600
0
FLOODWAY
600
920
550
550


600
593.86
590
580
1225'
550'
400'
B
65'
C
45'
D
51'

```
*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

C
T1      BAD RIVER-NORTH BRNCH,ST. CHARLES, PROJECT NO. 8544, BADM
T2      BAD RIVER-NORTH BRANCH
T3      BAD RIVER-NORTH BRANCH

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        4.        0.        0.  0.0         0.0       0.0       0.   593.860     0.0

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE

     1.000     0.0      -1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    110.000   150.000   200.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

NC      0.080     0.080     0.045     0.100     0.300     0.0       0.0       0.0       0.0       0.0
QT      4.000  2730.000  3960.000  4200.000  4600.000  4200.000     0.0       0.0       0.0       0.0

          SECTION A 750 FEET UPSTREAM FROM M-47

X1  20950.000    18.000   650.000   780.000     0.0       0.0       0.0       0.0       0.0       0.0
X3      0.0       0.0       0.0     600.000     0.0     975.000     0.0       0.0       0.0       0.0
GR    596.000     0.0     595.000   290.000   600.000   470.000   600.000   600.000   592.000   625.000
GR    588.000   635.000   584.400   650.000   582.300   679.000   580.600   691.000   581.000   709.000
GR    581.100   721.000   580.500   739.000   582.300   752.000   583.100   780.000   588.000   920.000
GR    592.000   960.000   596.000   975.000   596.000  1160.000     0.0       0.0       0.0       0.0
NC      0.100     0.100     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     100.000   500.000

          SECTION B

X1  22150.000    16.000   125.000   190.000   950.000   800.000  1300.000     0.0       0.0       0.0
GR    600.000     0.0     596.000    45.000   592.000    65.000   588.000    90.000   584.100   125.000
GR    582.500   137.000   581.200   139.000   579.200   151.000   579.800   161.000   581.200   173.000
GR    583.400   190.000   584.000   210.000   588.000   535.000   592.000   570.000   596.000   600.000
GR    600.000   660.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.060     0.060     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     300.000   850.000

          SECTION C

X1  22850.000    21.000   601.000   646.000   450.000   450.000   450.000     0.0       0.0       0.0
GR    600.000     0.0     595.000    85.000   593.100   186.000   593.000   286.000   593.700   305.000
GR    593.200   466.000   592.200   527.000   569.900   556.000   585.700   566.000   584.600   601.000
GR    582.200   602.000   580.200   611.000   579.000   620.000   580.800   630.000   582.200   639.000
GR    585.200   646.000   585.800   652.000   589.700   660.000   585.500   671.000   585.700   943.000
GR    585.400  1017.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
ET      0.0       0.0       0.0       0.0       0.0       9.100     0.0       0.0     625.000  1850.000
```

TRD. 594.7 L.C. 592.6 8'X48'

X1	25180.000	26.000	1700.000	1751.000	1700.000	2[illegible].000	2400.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
GR	610.000	0.0	608.000	100.000	606.000	135.000	604.000	160.000	596.000	215.000
GR	594.000	250.000	592.000	455.000	592.000	705.000	590.000	1070.000	588.000	1400.000
GR	590.000	1665.000	585.170	1700.000	584.760	1703.000	583.380	1713.000	582.000	1723.000
GR	581.460	1729.000	581.100	1733.000	584.300	1743.000	588.600	1751.000	591.680	1755.000
GR	594.500	1758.000	594.000	1858.000	596.000	1874.000	598.000	1906.000	600.000	1938.000
GR	600.800	1970.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	25279.000	0.0	1700.000	1751.000	100.000	100.000	100.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
X1	25280.000	0.0	1700.000	1751.000	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
BT	26.000	0.0	610.000	610.000	100.000	608.000	608.000	135.000	606.000	606.000
BT	160.000	604.000	604.000	215.000	596.000	596.000	250.000	594.000	594.000	455.000
BT	592.000	592.000	705.000	592.000	592.000	1070.000	590.000	590.000	1400.000	588.000
BT	588.000	1665.000	590.000	590.000	1700.000	594.500	592.500	1703.000	594.500	592.500
BT	1713.000	594.600	592.600	1723.000	594.700	592.700	1729.000	594.700	592.700	1733.000
BT	594.600	592.600	1743.000	594.500	592.500	1751.000	594.500	592.700	1755.000	594.500
BT	591.680	1758.000	594.500	590.500	1858.000	594.000	594.000	1874.000	596.000	596.000
BT	1906.000	598.000	598.000	1938.000	600.000	600.000	1970.000	600.800	600.800	0.0
X1	25281.000	0.0	0.0	0.0	8.000	8.000	8.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	0.0	400.000	0.0	0.0	0.0	0.0	0.0
X1	25380.000	0.0	0.0	0.0	25.000	25.000	25.000	0.0	0.0	0.0
X3	10.000	0.0	0.0	0.0	400.000	0.0	0.0	0.0	594.500	0.0
NC	0.040	0.040	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000

SECTION E MIDDLE GOLF COURSE BRIDGE

TRD. 594.7 L.C. 592.6 8'X48'

X1	25780.000	25.000	1415.000	1470.000	200.000	525.000	510.000	0.0	0.0	0.0
GR	599.000	0.0	589.400	35.000	590.000	130.000	589.300	523.000	594.000	791.000
GR	590.400	874.000	585.100	924.000	585.100	1060.000	589.500	1075.000	589.500	1332.000
GR	593.600	1400.000	594.700	1415.000	587.000	1418.000	585.500	1427.000	584.400	1429.000
GR	581.000	1437.000	579.600	1443.000	581.300	1451.000	584.400	1459.000	588.910	1467.000
GR	594.000	1470.000	589.800	1558.000	598.300	1718.000	595.300	1771.000	599.000	2180.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	300.000	1625.000
X1	25879.000	26.000	1418.000	1467.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	599.000	0.0	589.400	35.000	590.000	130.000	589.300	523.000	594.000	791.000
GR	590.400	874.000	589.100	924.000	585.100	1060.000	589.500	1075.000	589.500	1332.000
GR	593.600	1400.000	588.300	1415.000	588.800	1418.000	588.400	1427.000	588.800	1429.000
GR	585.500	1429.000	584.400	1437.000	581.000	1443.000	581.100	1451.000	584.400	1459.000
GR	585.800	1459.000	588.400	1467.000	592.500	1470.000	595.300	1558.000	598.300	1718.000
GR	595.300	1771.000	599.000	2180.000	0.0	0.0	0.0	0.0	0.0	0.0
X1	25880.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	[illegible]
BT	26.000	0.0	594.000	599.000	35.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BT	523.000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
BT	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

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*****************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	0.0	0.0	0.0	0.	593.860	0.0

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	15.000	0.0	-1.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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:PROF 2

CCHV     0.100 CLHV     0.300
*SECNO 20950.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VEL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS       600.0      975.0  TYPE       1  TARGET       375.000

          SECTION A 750 FEET UPSTREAM FROM M-47

 20950.00     13.36    593.86      0.0    593.86    593.90      0.04      0.0      0.0    584.40
    4200.      112.     3010.    1079.      159.     1552.     1324.       0.       0.    583.10
      0.0      0.70      1.94     0.81     0.080     0.045     0.080      0.0    580.50    619.19
 0.000127        0.        0.       0.         0         0         0     -0.01   347.79    966.97

*SECNO 22150.000

3470 ENCROACHMENT STATIONS       100.0      500.0  TYPE       1  TARGET       400.000

          SECTION B

 22150.00     14.82    594.02      0.0    594.02    594.07      0.05      0.16      0.00    584.10
    4200.      148.     1958.    2093.      213.      826.     2596.       76.       8.    583.40
     0.20      0.70      2.37     0.81     0.100     0.045     0.100     0.053    579.20    100.00
 0.000177      950.     1300.     800.         2         0         0     -0.04    400.00    500.00

*SECNO 22850.000
3280 CROSS SECTION  22850.00 EXTENDED       8.70 FEET


3470 ENCROACHMENT STATIONS       300.0      850.0  TYPE       1  TARGET       550.000

          SECTION C

 22850.00     15.10    594.10      0.0    594.09    594.15      0.05      0.08      0.00    584.60
    4200.      534.     1389.    2277.      609.      585.     1701.      109.      13.    585.20
     0.28      0.88      2.37     1.34     0.060     0.045     0.060     0.051    579.00    300.00
 0.000183      450.      450.     450.         1         0         0     -0.03    550.00    850.00

*SECNO 25180.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS       625.0     1850.0  TYPE       1  TARGET      1225.000

          SECTION D DOWNSTREAM GOLF COURSE BRIDGE


          TRD. 594.7   L.C. 592.6   8'X48'

 25180.00     13.29    594.39      0.0    594.27    594.41      0.01      0.25      0.00    585.17
    4200.     3330.      859.      11.     4878.      558.       33.      290.      49.    538.50
     0.92      [illegible]      1.54     0.33     0.060     0.045     [illegible]     0.053    [illegible]    [illegible]
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#SECNO 25279.000

3265 DIVIDED FLOW

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

 25279.00    13.31    594.41      0.0     594.28    594.42      0.01      0.01      0.00    585.17
    4200.    3383.      807.      11.      5592.      558.       38.      303.       52.     588.60
     0.96     0.60      1.44     0.28     0.060     0.045     0.060     0.052    581.10    242.86
 0.000083     100.      100.     100.         0         0         0    -0.00   1599.84   1861.26

#SECNO 25280.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   588.00 MAX ELLC   610.00

 25280.00    13.31    594.41      0.0     594.28    594.42      0.01      0.00      0.00    585.17
    4200.    3758.      439.       4.      5554.      466.       25.      303.       53.     588.60
     0.96     0.68      0.94     0.14     0.060     0.045     0.060     0.052    581.10    242.90
 0.000110       1.        1.       1.         0         0         0   -139.87   1599.34   1861.24

#SECNO 25281.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD  26 MIN ELTRD   588.00 MAX ELLC   610.00

 25281.00    13.31    594.41      0.0     594.28    594.42      0.01      0.00      0.00    585.17
    4200.    3758.      438.       4.      5560.      466.       26.      304.       53.     588.60
     0.96     0.68      0.94     0.14     0.060     0.045     0.060     0.052    581.10    242.83
 0.000109       8.        8.       8.         0         0         0   -140.11   1600.28   1861.28

#SECNO 25380.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA       585.17 FLREA       594.50

 25380.00    13.31    594.41      0.0     594.28    594.42      0.01      0.00      0.00    585.17
    4200.    3392.      808.       0.      5599.      558.       0.       308.       54.     588.60
     0.97     0.61      1.45      0.0     0.060     0.045     0.060     0.052    581.10    242.78
 0.000083      25.       25.      25.         0         0         0    -0.01   1500.22   1751.00

#SECNO 25730.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS      300.0    1625.0  TYPE      1  TARGET     1325.000

          SECTION E MIDDLE GOLF COURSE BRIDGE

          TRD. 594.7   L.C.  592.0     4'X48'
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THIS RUN EXECUTED 03/11/87 16:36:15

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
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NEW, Q5

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T1      ST CHARLES FIS          ORIGINAL DIKE
T2      SECTION B THRU D
T3      NO BR BAD RIVER

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       6.       0.       0.   .000177      .00       .0    5750.   594.020     .000

J2  NPROF    IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHWIM    ITRACE

      .000     .000   -1.000     .000     .000     .000     .000     .000     .000     .000


NC      .100     .100     .045     .100     .300     .000     .000     .000     .000     .000
ET      .000     .000     .000     .000     .000    9.100     .000     .000   100.000   500.000
X1  22150.000   16.000  125.000  190.000     .000     .000     .000     .000     .000     .000
GR   600.000     .000  596.000   45.000  592.000   65.000  588.000   90.000  584.100  125.000
GR   582.500  137.000  581.200  139.000  579.200  151.000  579.800  161.000  581.200  173.000
GR   583.400  190.000  584.000  210.000  588.000  535.000  592.000  570.000  596.000  600.000
GR   600.000  660.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .060     .060     .045     .000     .000     .000     .000     .000     .000     .000
ET      .000     .000     .000     .000     .000    9.100     .000     .000   300.000   850.000
X1  22850.000   21.000  601.000  646.000  450.000  450.000  450.000     .000     .000     .000
GR   600.000     .000  595.000   85.000  593.100  186.000  593.000  286.000  593.700  386.000
GR   593.200  466.000  592.200  527.000  589.900  556.000  585.700  586.000  584.600  601.000
GR   582.200  602.000  580.200  611.000  579.000  620.000  580.800  630.000  582.200  639.000
GR   585.200  646.000  585.800  652.000  589.700  660.000  585.500  671.000  585.700  948.000
GR   585.400 1017.000     .000     .000     .000     .000     .000     .000     .000     .000

X1     1.000   17.000  601.000  646.000  500.000  450.000  600.000     .000     .000     .000
X3      .000     .000     .000  570.000     .000 1240.000     .000     .000     .000     .000
GR   595.000  480.000  592.200  527.000  590.000  550.000  589.900  556.000  585.700  586.000
GR   584.600  601.000  582.200  602.000  580.200  611.000  579.500  620.000  580.800  630.000
GR   582.200  639.000  585.200  646.000  589.700  660.000  585.500  671.000  585.000 1340.000
GR   590.000 1365.000  595.000 1450.000     .000     .000     .000     .000     .000     .000

X1     2.000   16.000  601.000  646.000  600.000  700.000  750.000     .000     .000     .000
X3      .000     .000     .000  200.000     .000 1050.000     .000     .000     .000     .000
GR   595.000   15.000  590.000  140.000  589.900  556.000  585.700  586.000  584.600  601.000
GR   582.200  602.000  580.200  611.000  580.200  620.000  580.800  630.000  582.200  639.000
GR   585.200  646.000  589.700  660.000  585.500  671.000  585.700  984.000  590.000 1050.000
GR   595.000 1095.000     .000     .000     .000     .000     .000     .000     .000     .000
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ET	.000	.000	.000	.000	.000	9.100	.000	.000	625.000	1850.000
X1	25180.000	26.000	1700.000	1751.000	600.000	950.000	1050.000	.000	.000	.000
X3	.000	.000	.000	.000	400.000	.000	.000	.000	.000	.000
GR	610.000	.000	608.000	160.000	606.000	135.000	604.000	160.000	596.000	215.000
GR	594.000	250.000	592.000	455.000	592.000	705.000	590.000	1070.000	588.000	1400.000
GR	590.000	1665.000	585.170	1700.000	584.760	1703.000	583.360	1713.000	582.000	1723.000
GR	581.460	1729.000	581.100	1733.000	584.300	1743.000	588.600	1751.000	591.680	1755.000
GR	594.500	1758.000	594.000	1858.000	596.000	1874.000	598.000	1906.000	600.000	1938.000
GR	600.800	1970.000	.000	.000	.000	.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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  SECNO    DEP.H    CWSEL    CRIWS    WSELK    EG       HV       PL       BLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      JTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   ICC      ICJMT    CORAR    TOPWID     ENDST


$PROF 1

CCHV=    .100 CEHV=    .300
$SECNO 22150.000

3470 ENCROACHMENT STATIONS=     100.0     500.0  TYPE=     1  TARGET=     400.000
 22150.00    16.92   596.12      .00      .00   596.18      .05      .00      .00   584.10
    5750.     205.    2524.    3021.     266.     962.    3247.       0.       0.    585.40
      .00      .77     2.62      .93     .100     .045     .100     .000   579.20   100.00
  .000177       0.       0.       0.       0        0        3      .00   400.00   500.00


$SECNO 22850.000
3280 CROSS SECTION  22850.00 EXTENDED     10.80 FEET


3470 ENCROACHMENT STATIONS=     300.0     850.0  TYPE=     1  TARGET=     550.000
 22850.00    17.21   596.21      .00      .00   596.25      .04      .07      .00   584.60
    5750.    1128.    1626.    2996.    1243.     680.    2131.     44.       5.    585.20
      .08      .91     2.39     1.41     .060     .045     .060     .000   579.00   300.00
  .000152     450.     450.     450.       0        0        0      .00   550.00   850.00


$SECNO 1.000
3280 CROSS SECTION      1.00 EXTENDED      1.29 FEET


3470 ENCROACHMENT STATIONS=     520.0    1240.0  TYPE=     1  TARGET=     720.000
     1.00    16.78   596.28      .00      .00   596.29      .01      .03      .00   584.60
    5750.     355.     781.    4614.     606.     679.    6478.    108.      12.    585.20
      .26      .59     1.15      .71     .060     .045     .060     .000   579.50   520.00
  .000035     500.     600.     450.       1        0        0      .00   720.00  1240.00


$SECNO 2.000
3280 CROSS SECTION      2.00 EXTENDED      1.31 FEET


3470 ENCROACHMENT STATIONS=     200.0    1050.0  TYPE=     1  TARGET=     850.000
     2.00    16.11   596.31      .00      .00   596.32      .01      .03      .00   584.60
    5750.    1611.     884.    3255.    2688.     673.    4129.    228.      24.    585.20
      .49      .60     1.31      .79     .060     .045     .060     .000   580.20   200.00
  .000046     600.     750.     700.       2        0        0      .00   850.00  1050.00
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  SECNO    DEPTH    CWSEL    CRIWS    WSELV    EG       HV       HL       DLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IOC      ICCHT    EORAR    TOPWID     ENDST


#SECNO 25180.000

3470 ENCROACHMENT STATIONS=     625.0    1850.0  TYPE=     1  TARGET=    1225.000
 25180.00     15.25    596.35      .00      .00   596.36      .01      .04      .00   585.17
    5750.     4765.     909.      76.    6971.     657.     225.     358.      41.    588.60
      .76       .68     1.38      .34     .060     .045     .060     .000   581.10   625.00
  .000061      600.    1050.     950.        0        0        0      .00  1225.00  1850.00
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THIS RUN EXECUTED 03/11/87 16:37:32

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
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T1
T2
T3

J1	ICHECK	INQ	NINV	IDIR	STPT	METRIC	HVINS	Q	WSEL	FQ
	0.	6.	0.	0.	.000177	.00	.0	4150.	594.020	.000

J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FN	ALLDC	IBW	CHNIM	ITRACE
	2.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
  SECND    DEPTH    CWSEL    CRINS    WSELK    EG       HV       HL       QLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TLA   LEFT/RIGHT
  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
#SECND 22150.000

3470 ENCROACHMENT STATIONS=     100.0     500.0  TYPE=     1  TARGET=     400.000
 22150.00    14.75   593.95      .00   596.12   594.00      .05      .00      .00   584.10
    4150.     147.    1940.    2064.     211.     821.    2573.       0.       0.   583.40
      .00      .69     2.36      .83     .100     .045     .100     .000   579.20   100.00
  .000177       0.       0.       0.        0        0        3      .00   400.00   500.00


#SECND 22850.000
3280 CROSS SECTION  22850.00 EXTENDED      8.63 FEET


3470 ENCROACHMENT STATIONS=     300.0     850.0  TYPE=     1  TARGET=     550.000
 22850.00    15.03   594.03      .00   596.21   594.08      .05      .08      .00   584.60
    4150.     519.    1380.    2251.     588.     582.    1687.      33.       5.   585.20
      .08      .88     2.37     1.33     .060     .045     .060     .000   579.00   300.00
  .000184     450.     450.     450.        0        0        0      .00   550.00   850.00


#SECND 1.000

3470 ENCROACHMENT STATIONS=     520.0    1240.0  TYPE=     1  TARGET=     720.000
     1.00    14.61   594.11      .00   596.28   594.12      .01      .03      .00   584.60
    4150.     220.     624.    3307.     430.     581.    5188.      83.      12.   585.20
      .27      .51     1.07      .64     .060     .045     .060     .000   579.50   520.00
  .000038     500.     600.     450.        1        0        0      .00   720.00  1240.00


#SECND 2.000

3470 ENCROACHMENT STATIONS=     200.0    1050.0  TYPE=     1  TARGET=     850.000
     2.00    13.94   594.14      .00   596.31   594.15      .01      .03      .00   584.60
    4150.     950.     756.    2414.    1818.     576.    3252.     176.      24.   585.20
      .51      .52     1.31      .75     .060     .045     .060     .000   580.20   200.00
  .000057     600.     750.     700.        2        0        0      .00   850.00  1050.00


#SECND 23100.000
```

B

C

1

2

ORIGINAL

SECNO	DEPTH	CWSEL	CRIT S	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTH	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 625.0 1850.0 TYPE= 1 TARGET= 1225.000

25180.00	13.09	594.19	.00	596.35	594.21	.01	.06	.00	585.17
4150.	3262.	878.	10.	4655.	547.	22.	270.	40.	588.60
.76	.70	1.61	.45	.060	.045	.060	.000	581.10	625.00
.000105	600.	1050.	950.	1	0	0	.00	1161.88	1850.00

THIS RUN EXECUTED 03/11/87 16:38:12

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*****************************************
  MEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
*****************************************
```

T1
T2
T3

J1	ICHECK	INO	MIKT	IDIR	STRT	METRIC	HVINS	Q	HSEL	FQ
	0.	6.	0.	0.	.000177	.00	.0	2560.	594.020	.000
J2	NPROF	IPLOT	PRFVS	XSECV	XSECH	FM	ALLDC	IBW	CHNIM	ITRACE
	15.000	.000	-1.000	.000	.000	.000	.000	.000	.000	.000

```
  SECNO    DEPTH    CHSEL    CRIWS    WSELK    EG       HV       HL       GLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  TIME     VLOB     VCH      VROB     XML      XMCH     XMR      WTN      ELMIN      SSTA
  SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


#PROF 3

CCHV=    .100 CEHV=    .300
#SECNO 22150.000

3470 ENCROACHMENT STATIONS=     100.0     500.0  TYPE=     1  TARGET=     400.000
 22150.00    12.23   591.43      .00   596.12   591.47      .04      .00      .00   584.10
    2560.      86.    1338.    1137.     148.     657.    1792.       0.       0.   583.40
      .00      .58     2.04      .63     .100     .045     .100     .000   579.20   100.00
  .000177       0.       0.       0.        0        0        4      .00   400.00   500.00


#SECNO 22850.000
3280 CROSS SECTION  22850.00 EXTENDED      6.11 FEET


3470 ENCROACHMENT STATIONS=     300.0     650.0  TYPE=     1  TARGET=     550.000
 22850.00    12.51   591.51      .00   596.21   591.56      .04      .09      .00   584.60
    2560.     216.    1022.    1322.     223.     469.    1174.      23.       4.   585.20
      .08      .97     2.18     1.13     .060     .045     .060     .000   579.00   535.69
  .000207     450.     450.     450.        0        0        0      .00   314.31   850.00


#SECNO 1.000

3470 ENCROACHMENT STATIONS=     520.0    1240.0  TYPE=     1  TARGET=     720.000
     1.00    12.09   591.59      .00   596.28   591.60      .01      .04      .00   584.60
    2560.     102.     461.    1997.     233.     468.    3689.      57.       9.   585.20
      .31      .44      .98      .54     .060     .045     .060     .000   579.50   533.36
  .000042     500.     600.     450.        2        0        0      .00   706.64  1240.00


#SECNO 2.000

3470 ENCROACHMENT STATIONS=     200.0    1050.0  TYPE=     1  TARGET=     850.000
     2.00    11.43   591.63      .00   596.31   591.64      .01      .04      .00   584.60
    2560.     329.     633.    1597.     812.     463.    2239.     120.      21.   585.20
      .54      .41     1.37      .71     .060     .045     .060     .000   580.20   200.00
  .000083     600.     750.     700.        2        0        0      .00   850.00  1050.00


#SECNO 25180.000
```

SECND	DEPTH	CHSEL	CRIMB	WSELF	CB	HV	HL	DLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XWL	XNCH	XWR	WTN	ELMIN	SSTA
SLOPE	XLOBL	FLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 625.0 1850.0 TYPE= 1 TARGET= 1225.000

25180.00	10.63	591.73	.00	596.35	591.77	.04	.12	.01	585.17
2560.	1607.	950.	3.	2044.	422.	6.	175.	36.	588.60
.72	.79	2.25	.49	.060	.045	.060	.000	581.10	753.97
.000292	600.	1050.	950.	2	0	0	.00	1001.09	1755.06

THIS RUN EXECUTED 03/11/87 16:38:54

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

NO BR BAD RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.0
22150.000	.00	.00	.00	579.20	5750.00	596.12	.00	596.18	1.77	2.62	4475.28	4325
22150.000	.00	.00	.00	579.20	4150.00	593.95	.00	594.00	1.77	2.36	3605.14	3110
22150.000	.00	.00	.00	579.20	2560.00	591.43	.00	591.47	1.77	2.04	2597.87	1924
22850.000	450.00	.00	.00	579.00	5750.00	596.21	.00	596.25	1.52	2.39	4054.02	4667
22850.000	450.00	.00	.00	579.00	4150.00	594.03	.00	594.08	1.84	2.37	2657.72	3063
22850.000	450.00	.00	.00	579.00	2560.00	591.51	.00	591.56	2.07	2.18	1865.65	1778
1.000	600.00	.00	.00	579.50	5750.00	596.28	.00	596.29	.35	1.15	7763.34	9700
1.000	600.00	.00	.00	579.50	4150.00	594.11	.00	594.12	.38	1.07	6200.03	6773
1.000	600.00	.00	.00	579.50	2560.00	591.59	.00	591.60	.42	.98	4390.67	3936
2.000	750.00	.00	.00	580.20	5750.00	596.31	.00	596.32	.46	1.31	7489.40	8[illegible]
2.000	750.00	.00	.00	580.20	4150.00	594.14	.00	594.15	.57	1.31	5646.1[illegible]	5500
2.000	750.00	.00	.00	580.20	2560.00	591.63	.00	591.64	.83	1.37	3513.90	2817
25180.000	1050.00	.00	.00	581.10	5750.00	596.35	.00	596.36	.61	1.38	7832.39	7363
25180.000	1050.00	.00	.00	581.10	4150.00	594.19	.00	594.21	1.05	1.61	5223.06	3052
25180.000	1050.00	.00	.00	581.10	2560.00	591.73	.00	591.77	2.92	2.25	2 72.21	1498

TO BR BAD RIVER

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
22150.000	5750.00	596.12	.00	.00	.00	400.00	.00
22150.000	4150.00	593.95	-2.18	.00	-2.18	400.00	.00
22150.000	2560.00	591.43	-2.52	.00	-4.69	400.00	.00
22850.000	5750.00	596.21	.00	.09	.00	550.00	450.00
22850.000	4150.00	594.03	-2.18	.08	-2.18	550.00	450.00
22850.000	2560.00	591.51	-2.52	.08	-4.70	314.31	450.00
1.000	5750.00	596.28	.00	.07	.00	720.00	600.00
1.000	4150.00	594.11	2.17	.08	-2.17	720.00	600.00
1.000	2560.00	591.59	-2.52	.08	-4.69	706.64	600.00
2.000	5750.00	596.31	.00	.03	.00	850.00	750.00
2.000	4150.00	594.14	-2.17	.03	-2.17	850.00	750.00
2.000	2560.00	591.63	-2.51	.04	-4.68	850.00	750.00
25180.000	5750.00	596.35	.00	.04	.00	1225.00	1050.00
25180.000	4150.00	594.19	2.15	.06	-2.15	1161.88	1050.00
25180.000	2560.00	591.73	-2.46	.10	-4.61	1001.07	1050.00

```
  SECNO    DEPTH    CWSEL    CRIWS    WSELF    EG       HV       HL       QLOSS   BANK ELEV
  Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
  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 22150.000

3470 ENCROACHMENT STATIONS=     100.0     500.0  TYPE=     1  TARGET=     400.000
 22150.00    14.82   594.02      .00      .00   594.07      .05      .00      .00   584.10
    4200.     148.    1958.    2093.     213.     826.    2595.       0.       0.   583.40
      .00      .70     2.37      .81     .100     .045     .100     .000   579.20   100.00
 .000177       0.       0.       0.        0        0        0      .00   400.00   500.00


*SECNO 22850.000
3280 CROSS SECTION  22850.00 EXTENDED      8.70 FEET


3470 ENCROACHMENT STATIONS=     300.0     850.0  TYPE=     1  TARGET=     550.000
 22850.00    15.10   594.10      .00      .00   594.15      .05      .08      .00   584.60
    4200.     534.    1389.    2277.     609.     585.    1702.      34.       3.   585.20
      .08      .88     2.37     1.34     .060     .045     .060     .000   579.00   300.00
 .000183     450.     450.     450.        0        0        0      .00   550.00   850.00


*SECNO 25180.000

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=     625.0    1850.0  TYPE=     1  TARGET=    1225.000
 25180.00    13.29   594.39      .00      .00   594.41      .01      .25      .00   585.17
    4200.    3329.     860.      11.    4876.     557.      33.     214.      41.   588.60
      .72      .68     1.54      .33     .060     .045     .060     .000   581.10   625.00
 .000094    1700.    2400.    2100.        2        0        0      .00  1203.27  1850.00
```

THIS RUN EXECUTED 03/11/87 15:30:57

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*****************************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
  IBM-PC-XT VERSION 1.1
*****************************************************************
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```
T1      ST CHARLES FIS
T2      SECTION B THRU D
T3      NO BR BAD RIVER

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      0.       6.       0.       0.   .000000      .00       .0     1201.   594.020     .000


NC      .100     .100     .045     .100     .300     .000     .000     .000     .000     .000
ET      .000     .000     .000     .000     .000    9.100     .000     .000  100.000  500.000
X1  22150.000   16.000  125.000  190.000     .000     .000     .000     .000     .000     .000
GR    600.000     .000  596.000   45.000  572.000   65.000  588.000   90.000  584.100  125.000
GR    582.500  137.000  581.200  139.000  579.200  151.000  579.800  161.000  581.200  173.000
GR    583.400  190.000  584.000  210.000  588.000  535.000  592.000  570.000  596.000  600.000
GR    600.000  660.000     .000     .000     .000     .000     .000     .000     .000     .000

NC      .060     .060     .045     .000     .000     .000     .000     .000     .000     .000
ET      .000     .000     .000     .000     .000    9.100     .000     .000  300.000  650.000
X1  22850.000   21.000  601.000  646.000  450.000  450.000  450.000     .000     .000     .000
GR    600.000     .000  595.000   85.000  593.100  186.000  593.000  286.000  593.700  386.000
GR    593.200  466.000  592.200  527.000  589.900  556.000  585.700  586.000  584.600  601.000
GR    582.200  602.000  580.200  611.000  579.000  620.000  580.800  630.000  582.200  639.000
GR    585.200  646.000  585.800  652.000  589.700  660.000  585.500  671.000  585.700  946.000
GR    585.400 1017.000     .000     .000     .000     .000     .000     .000     .000     .000

ET      .000     .000     .000     .000     .000    9.100     .000     .000  625.000 1850.000
X1  25180.000   26.000 1700.000 1751.000 1700.000 2100.000 2400.000     .000     .000     .000
X3      .000     .000     .000     .000  400.000     .000     .000     .000     .000     .000
GR    610.000     .000  608.000  100.000  606.000  135.000  604.000  160.000  596.000  215.000
GR    594.000  250.000  592.000  455.000  592.000  705.000  590.000 1070.000  586.000 1400.000
GR    590.000 1665.000  585.170 1700.000  584.760 1703.000  583.380 1713.000  582.000 1723.000
GR    581.460 1729.000  581.100 1733.000  587.300 1743.000  588.600 1751.000  591.680 1755.000
GR    594.500 1758.000  594.000 1858.000  596.000 1874.000  596.000 1906.000  600.000 1938.000
GR    600.800 1970.000     .000     .000     .000     .000     .000     .000     .000     .000
EJ      .000     .000     .000     .000     .000     .000     .000     .000     .000     .000
```

00BREAK00

1) COUNTY: SAGINAW

2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, SOUTH FORK

4) DOCUMENT TYPE: SUMMARY

00BREAK00

South Fork - Bad River CP1280

Rec'd 10/27/80

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR    01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

T1       BAD RIVER-SOUTH BRANCH, ST. CHARLES, PROJECT NO. 8544, BAD
T2       BAD RIVER-SOUTH BRANCH
T3       BAD RIVER-SOUTH BRANCH

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        2.        0.        0.  0.0          0.0       0.0       0.   589.870     0.0

J2  NPROF     IPLOT     PREVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.0      1.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0

NC      0.100     0.060     0.045     0.100     0.300     0.0       0.0       0.0       0.0       0.0
QT      4.000  2400.000  3600.000  3800.000  4300.000     0.0       0.0       0.0       0.0       0.0

X1   1750.000    14.000   610.000   720.000     0.0       0.0       0.0       0.0       0.0       0.0
GR    596.000     0.0     592.000   325.000   588.000   375.000   587.900   610.000   582.000   617.000
GR    579.800   635.000   579.100   653.000   579.800   674.000   578.700   693.000   582.000   714.000
GR    587.900   720.000   588.000   770.000   592.000   810.000   596.000   975.000     0.0       0.0

X1   2450.000    16.000   820.000   875.000   350.000   350.000   350.000     0.0       0.0       0.0
GR    600.000     0.0     596.000   350.000   592.000   400.000   588.000   440.000   585.100   600.000
GR    582.600   820.000   580.900   825.000   579.700   837.000   578.800   849.000   578.900   860.000
GR    580.900   871.000   584.200   875.000   588.000   895.000   592.000   930.000   596.000  1030.000
GR    597.800  1240.000     0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
NC      0.050     0.080     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1   3900.000    17.000   623.000   716.000  1450.000  1450.000  1450.000     0.0       0.0       0.0
GR    600.000     0.0     596.000    40.000   592.000   245.000   588.000   615.000   588.300   623.000
GR    583.300   639.000   581.000   655.000   579.000   666.000   579.100   677.000   579.000   687.000
GR    581.000   697.000   582.400   716.000   585.800  1100.000   588.000  1340.000   592.000  1560.000
GR    596.000  1685.000   598.000  1940.000     0.0       0.0       0.0       0.0       0.0       0.0
NC      0.100     0.050     0.045     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1   5400.000    14.000   710.000   766.000  1500.000  1500.000  1500.000     0.0       0.0       0.0
GR    600.000     0.0     596.000    75.000   592.000   225.000   588.000   510.000   586.500   710.000
GR    581.300   719.000   579.400   729.000   579.800   739.000   581.300   749.000   584.000   766.000
GR    588.000  1100.000   592.000  1160.000   596.000  1180.000   600.000  1310.000     0.0       0.0
EJ      0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0
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BAD RIVER-SOUTH BRANCH

SUMMARY PRINTOUT TABLE 150

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TCPWIO	XLCH
	~~1750.000~~	~~2400.00~~	~~589.37~~	~~0.0~~	~~0.0~~	~~0.0~~	~~437.08~~	~~0.0~~
	1750.000	3600.00	592.73	2.86	0.0	0.0	574.42	0.0
A	1750.000	3800.00	593.86	1.13	0.0	0.0	712.86	0.0
	~~1750.000~~	~~4300.00~~	~~596.57~~	~~2.71~~	~~0.0~~	~~0.0~~	~~975.00~~	~~0.0~~
	2450.000	2400.00	589.97	0.0	0.10	0.0	491.98	350.00
	~~2450.000~~	~~3600.00~~	~~592.80~~	~~2.83~~	~~0.07~~	~~0.0~~	~~559.99~~	~~350.00~~
B	2450.000	3800.00	593.91	1.11	0.05	0.0	601.36	350.00
	2450.000	4300.00	596.59	2.68	0.02	0.0	799.83	350.00
	3900.000	2400.00	590.15	0.0	0.18	0.0	1042.50	1450.00
	3900.000	3600.00	592.91	2.76	0.11	0.0	1389.92	1450.00
C	~~3900.000~~	~~3800.00~~	~~593.99~~	~~1.08~~	~~0.08~~	~~0.0~~	~~1479.05~~	~~1450.00~~
	3900.000	4300.00	596.63	2.64	0.04	0.0	1732.11	1450.00
	~~5400.000~~	~~2400.00~~	~~590.23~~	~~0.0~~	~~0.13~~	~~0.0~~	~~786.94~~	~~1500.00~~
	5400.000	3600.00	592.97	2.69	0.06	0.0	976.23	1500.00
D	5400.000	3800.00	594.03	1.06	0.04	0.0	1021.28	1500.00
	~~5400.000~~	~~4300.00~~	~~596.65~~	~~2.62~~	~~0.02~~	~~0.0~~	~~1138.39~~	~~1500.00~~

SUMMARY OF ERRORS

00BREAK00

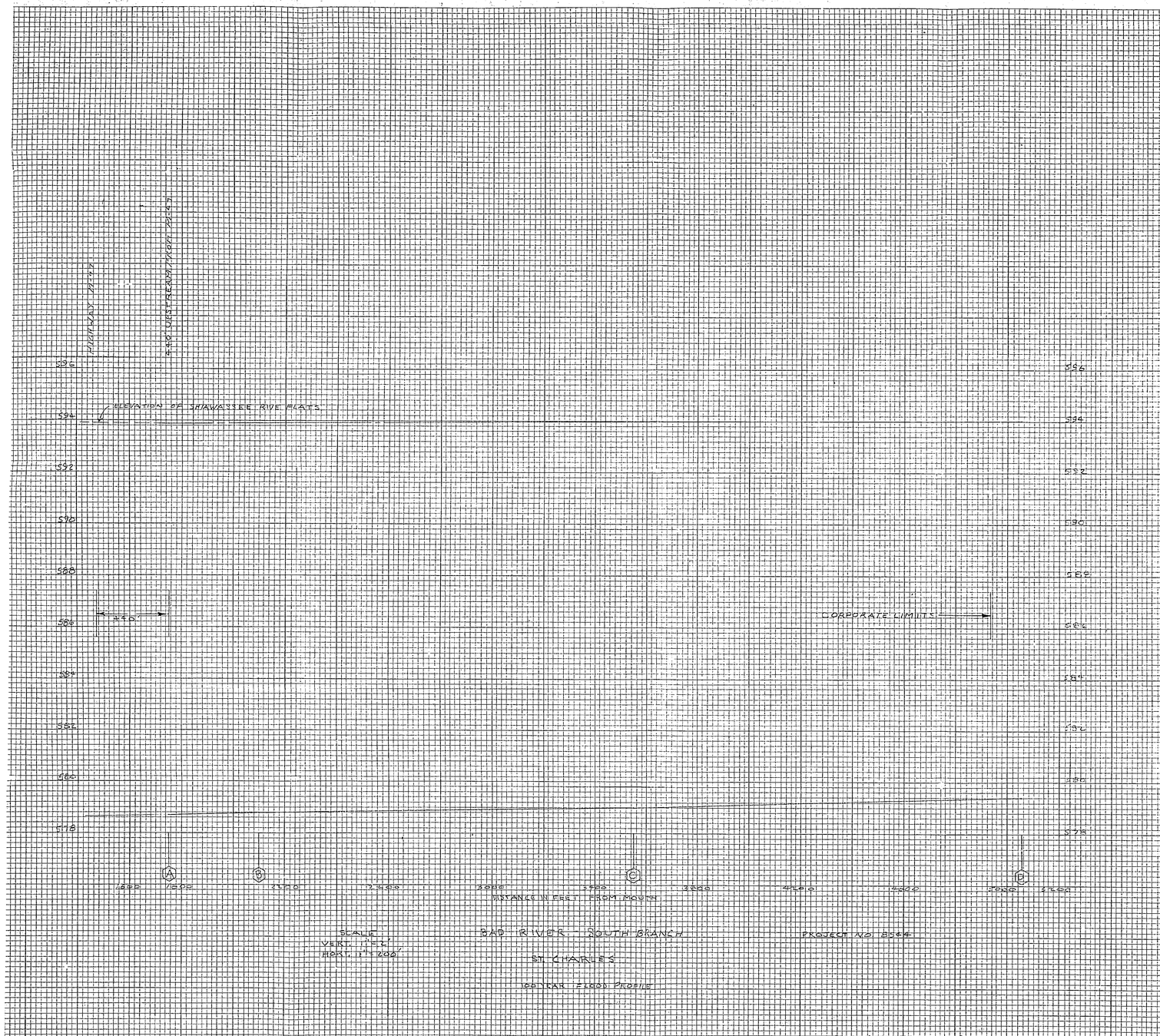
1) COUNTY: SAGINAW

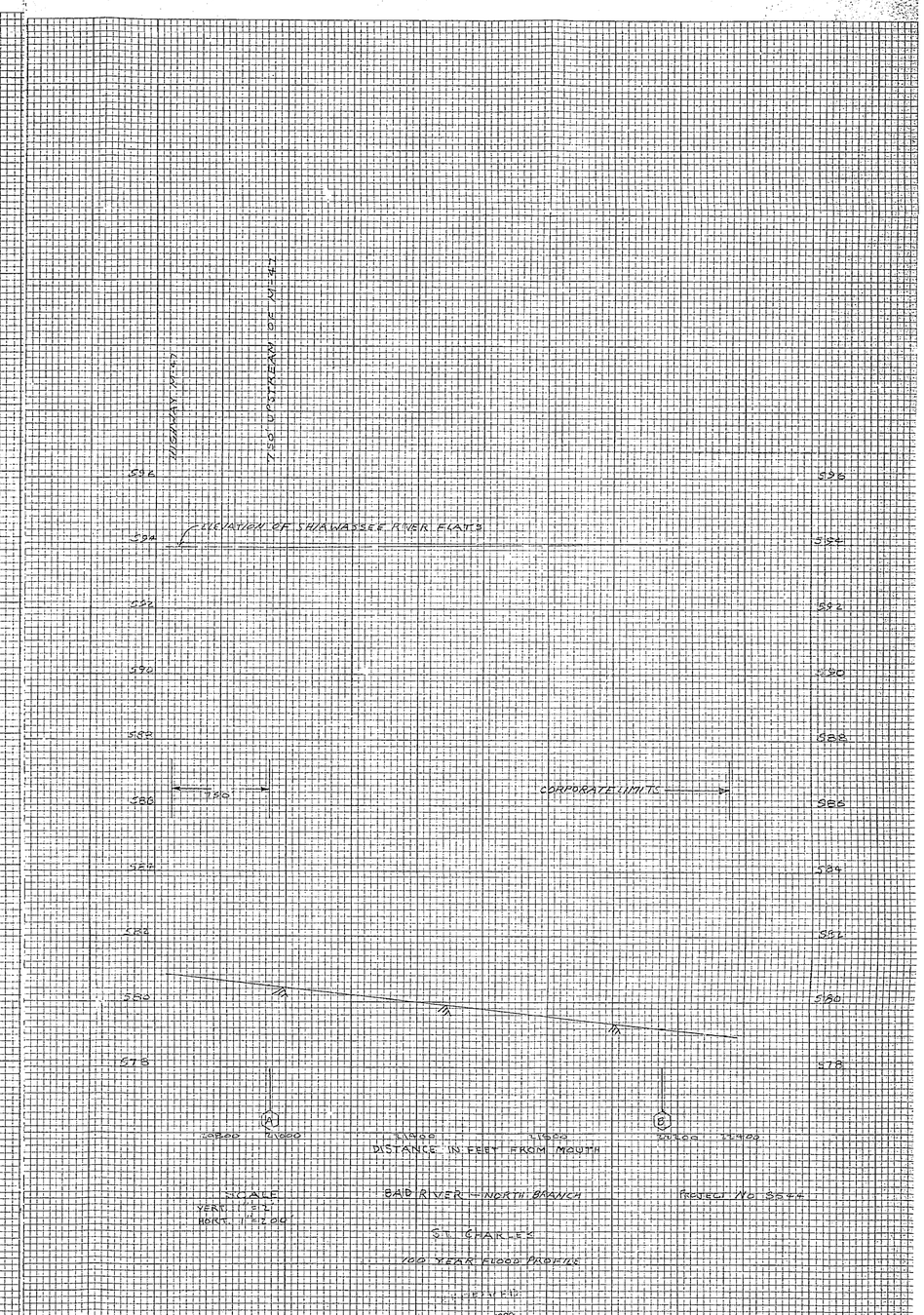
2) STUDY NAME: ST. CHARLES, VILLAGE

3) WATERCOURSE: BAD RIVER, SOUTH FORK

4) DOCUMENT TYPE: SUMMARY

00BREAK00





K+E 10 X 10 TO THE INCH
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731001

SOUTH BRANCH
BAD RIVER
ST. CHARLES

WATER MANAGEMENT

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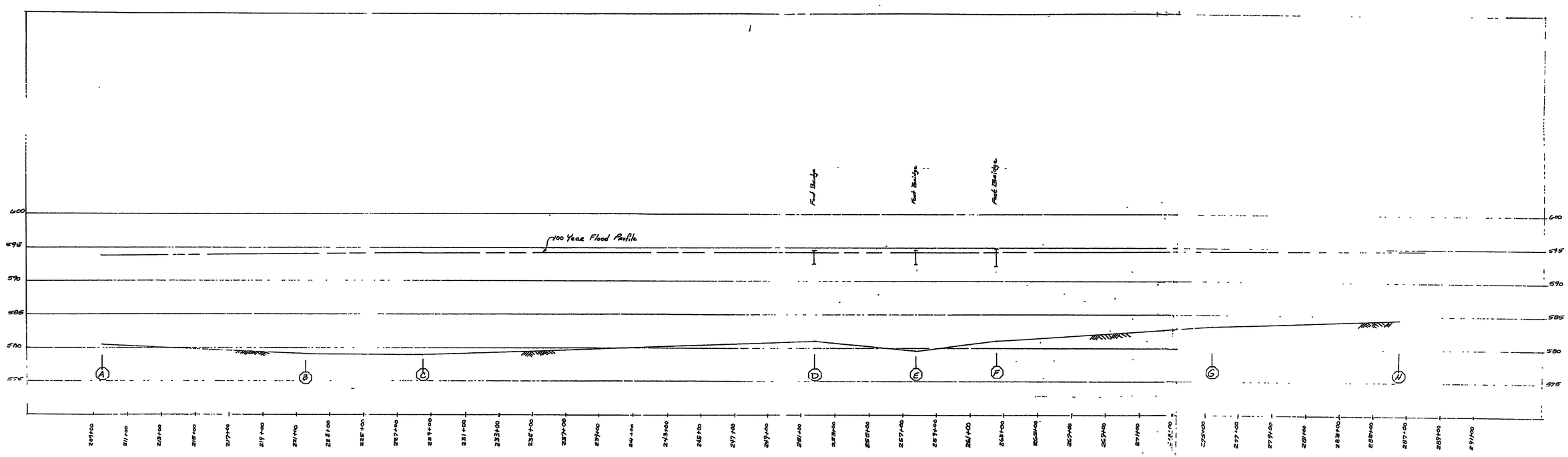
PRINTED IN U.S.A.
731001

NORTH BRANCH
BAD RIVER
ST. CHARLES

VILLAGE OF ST CHARLES
SAGINAW COUNTY, MICHIGAN 1/21/82
REVISED - NORTH BRANCH BIG RIVER

Gove Engineers for FEMA
Final study date 5/13/83



Village of St. Charles - Bad River - 100 Year Flood Profile

Cove Associates Inc., Lansing

00BREAK00

1) COUNTY:: SAGINAW

2) STUDY NAME: THOMAS TWP

3) WATERCOURSE: SWAN CRK & HATCH RUN

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY

HYDRAULIC ANALYSIS OF THE SWAN CREEK AND HATCH RUN

THROUGH

THOMAS TOWNSHIP, MICHIGAN

ATTACHED COMMENTS

The model assumes that Swan Creek + Shiawassee Flats are peaking at same time ∴ the downstream area may have high profile for the floodway only. The rosel of the 100 year in this downstream area is controlled by Shiawassee Flats.

Contractor is checking out assumption

2/27/81 SE

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

1601 PORTAGE STREET
KALAMAZOO, MICHIGAN 49001
(616) 385-0011

December 5, 1980

Mr. Daniel H. Morgan, P.E.
Flood Insurance Unit
Flood Plain Management Section
Water Management Division
Michigan Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909

Re: Thomas Township Flood Insurance Study

Dear Mr. Morgan:

Enclosed for your review is our Hydraulic Analysis of the Swan Creek and Hatch Run through Thomas Township, Michigan.

The following information is included:

1. HEC-2 run for 100-year flood
2. Summary tables for 10-, 50-, 100- and 500- year floods
3. IPLOT for 100-year flow
4. Topographic map
5. Hydraulic Analysis Report

If you have any questions on this information, please call me.

Very truly yours,

GOVE ASSOCIATES INC.

William J. McDonough, P.E.
Associate

WJM/tk

Enclosure: as listed above

RECEIVED
DEC 5 1980
WATER MANAGEMENT

HYDRAULIC ANALYSIS

1. INTRODUCTION

The streams being studied are Swan Creek and Hatch Run in Thomas Township, Michigan. Swan Creek is a tributary of Shiawassee Flats while Hatch Run is a tributary of Swan Creek. The flows used in this study have been approved by the Michigan Department of Natural Resources and shown below:

		Peak Flows (cfs)			
	DA(Mi^2)	10-year	50-year	100-year	500-year
Swan Creek at O'Hern Road	130	3700	5200	5500	5900
Swan Creek at U/S of confluence with McClellan Run	109	3150	4450	4900	5400
Swan Creek at U/S of confluence with Hatch Run	101	2600	3750	4050	4500
Hatch Run	2.4	175	225	250	320

2. METHOD OF ANALYSIS

Water surface profiles for 10-, 50-, 100-, and 500-year floods were computed through the HEC-2 computer program, developed by the U.S. Army, Corps of Engineers (Ref. 1).

2.1 Cross Sections

The cross sections used in this study were obtained by combining the results from field ground survey for channel portion and aerial photo survey for flood plain portion. The ground surveys were performed in September of 1979. The locations of cross sections

for Swan Creek and Hatch Run are shown in Table 1 and 2. The Special Bridge Routine was employed whenever the flow under the bridge was pressure flow or the bridge opening with piers could be approximated by a trapezoid. For a highly submerged bridge, the Normal Bridge Routine was used (Ref. 1).

2.2 Roughness Coefficients

The roughness coefficients were determined from field descriptions and the aerial photographs. The material shown on page 101 to page 123 in Chow's book (Ref. 2) served as a general reference. The range of "n" factors used in the model is shown below:

"n" Factors

River	Channel	Flood Plain
Swan Creek	0.03 - 0.05	0.03 - 0.15
Hatch Run	0.035 - 0.04	0.05 - 0.06

2.3 Starting Point and Starting Elevation

2.3.1 Swan Creek

The Saginaw River and its four main tributaries, the Cass River, Shiawassee River, Tittabawassee River, and the Flint River converge in the area of the Shiawassee Flats. The U. S. Army Corps of Engineers, 1954 report, on the Saginaw River and its tributaries states that for practically all level flows on the Saginaw River of 25,000 cfs or more, at least two of the principal tributaries will also be flooding. For flows of 40,000 cfs or more, all the principal tributaries will be flooding (Ref. 3). Although the Swan Creek is not one of the principal tributaries, it is appropriate to consider that the Swan Creek will be flooding at

the same time. The water surface elevations for the 10-, 50-, 100-, and 500-year floods at the Shiawassee Flats have been determined by Johnson & Anderson as 589.87, 592.93, 593.86, and 596.57, respectively (Ref. 4). These elevations are also the starting elevations for Swan Creek. From the USGS topo map, the mouth of Swan Creek was determined at the point about 8545 feet downstream from the Shoemaker Road Bridge. This point was used as the starting point for hydraulic analysis.

2.3.2 Hatch Run

The starting point for Hatch Run is the confluence point with Swan Creek. The starting elevations were determined by slope area method. It is believed that the convergence will occur within the backwater of Swan Creek.

Reference

1. HEC-2 Water Surface Profiles, Users Manual, Hydrological Engineering Center, U. S. Army Corps of Engineers, August 1979.

2. Open Channel Hydraulics, Ven Ten Chow, McGraw-Hill, 1959.

3. Survey Report on the Saginaw River, Michigan and Its Tributaries With a View to Improvement for the Control of Floods and Other Purposes, U. S. Army, Corps of Engineers, 1954.

4. Cass River Hydraulic Report, Spaulding Township, Johnson & Anderson, Inc., September 1977.

TABLE 1

LOCATIONS OF CROSS SECTIONS (SWAN CREEK)

SECTION	SECNO	LOCATION
A	14520	Downstream from this point, the flooding is in the area of Shiawassee Flats 8545' D/S from D/S face of Shoemaker Road
B	17540	3050' U/S from A
C	19335	1875' U/S from B
D	21420	2095' U/S from C
E	22680	1280' U/S from D A to E, Manufactured from USGS topo map
F	22870 22871	Shoemaker Road Bridge TR = 595.8, LC = 593.5 D/S Study Limit
G	23000 23001	C & P Railraod Trustle TR = 599.6, LC = 596.7
H	23285	280 U/S from U/S face of C & O Railroad Bridge
I	25000	1750' U/S from H
J	25800	1160' U/S from I
K	25900 25901 25902 25903	Foot Bridge, TR = 584.9, LC = 583.9 High Submerged, NBR
L	26000	80' U/S from K
M	26320	290' U/S from L
N	26720 26721 26722 26723	Foot Bridge, TR = 590.5, LC = 586.2 Truss, High Submerged No Bridge Routine Hign n factor for truss
O	26820	85' U/S from N
P	27920	1385' U/S from O

SECTION	SECNO	LOCATION
Q	29520	1545' U/S from P
R	29920	M-46 Bridge, TR = 601.9, LC = 598.5
S	30200	185' U/S from U/S face of M-46 Bridge
T	30920	500' U/S from S
U	31720	1100' U/S from T
V	33120	1405' U/S from U
W	34720	1385' U/S from V
X	35720	995' U/S from W
Y	36450	735' U/S from X
Z	36550	Foot Bridge, TR = 591.5, LC = 591.4
	36551	Truss, High Submerged
	36552	No Bridge Routine
	36553	High n Factor for Truss
AA	36800	180' U/S from Z
AB	37000	Foot Bridge, TR = 591.4, LC = 591.3
	37001	Truss, High Submerged
	37002	No Bridge Routine
	37003	High n Factor for Truss
AC	37220	110' U/S from AB
AD	37320	Geddes Road Bridge
	37321	TR = 597.4, LC = 596.0
	37322	
	37323	
AE	37820	450' U/S from U/S face of Geddes Road Bridge
AF	39020	960' U/S from AE
AG	44520	1705' U/S from AF
AH	45000	1205' U/S from AG
AI	45520	1130' U/S from AH
AJ	46870	1415' U/S from AI

SECTION	SECNO	LOCATION
AK	47620	755' U/S from AJ
AL	48570	1010' U/S from Ak
AM	48600	945' U/S from AL
AN	48820 48821	Frost Road Bridge, TR = 599.2, LC = 595.2
AO	48920	100' U/S from AN
AP	49220	250' U/S from AO
AQ	49870	965' U/S from AP
AR	51270	1965' U/S from AQ
AS	51370 51371	Lone Road Bridge, TR = 598.5, LC = 597.5
AT	51470	90' U/S from U/S face of Lone Road Bridge
AU	52470	925' U/S from AT
AV	53120	650' U/S from AU
AW	53270	U/S of Confluence with Hatch Run
AX	54770	1270' U/S from AW
AY	55590	925' U/S from AX
AZ	56170	840' U/S from AY
BA	56270 56271 56272 56273	Dice Road Bridge TR = 603.1, LC = 602.9

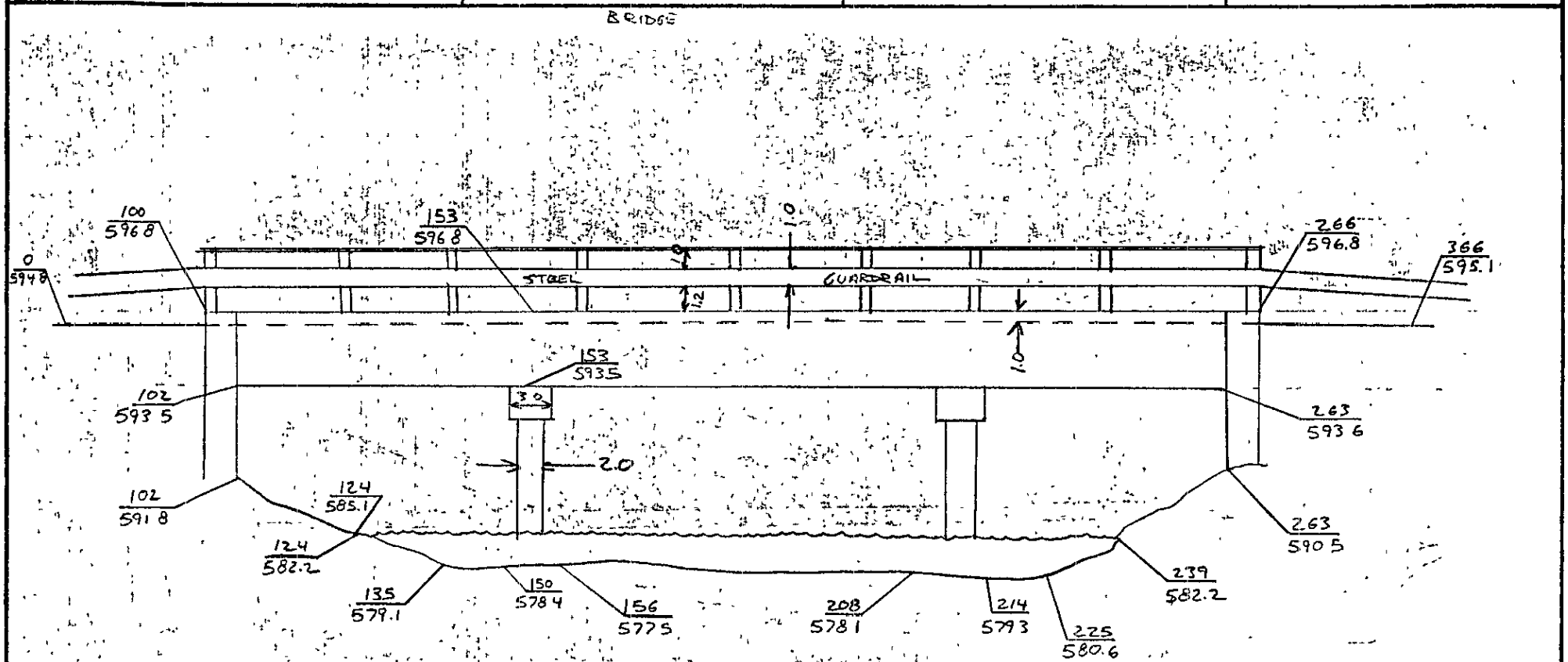
TABLE 2

LOCATIONS OF CROSS SECTIONS (HATCH RUN)

SECTION	SECNO	LOCATION
A	500	Mouth of Hatch Run
B	1500	915' U/S from A
C	2700	1035' U/S from B
D	3300	540' U/S from C
E	3400 3401 3402 3403	Dice Road Culvert TR = 605.5, LC = 602.0
F	3500	95' U/S from U/S face of Dice Road Culvert
G	4700	1035' U/S from I
H	5570	885' U/S from G
I	6500	805' U/S from H

BRIDGE DATA

Community: THOMAS TWP	Structure: SHOEMAKER RD BRIDGE	Type: PRE-FORMED - CONC	Station: 228+70



PROFILE SKETCH
(Looking Downstream)

Length: 166.0	Width: 31.0	Skew: —	Water Elevation: 582.2
No. of Piers: 2	Width of Piers: 2.0	Shape of Piers: —	

Notes:

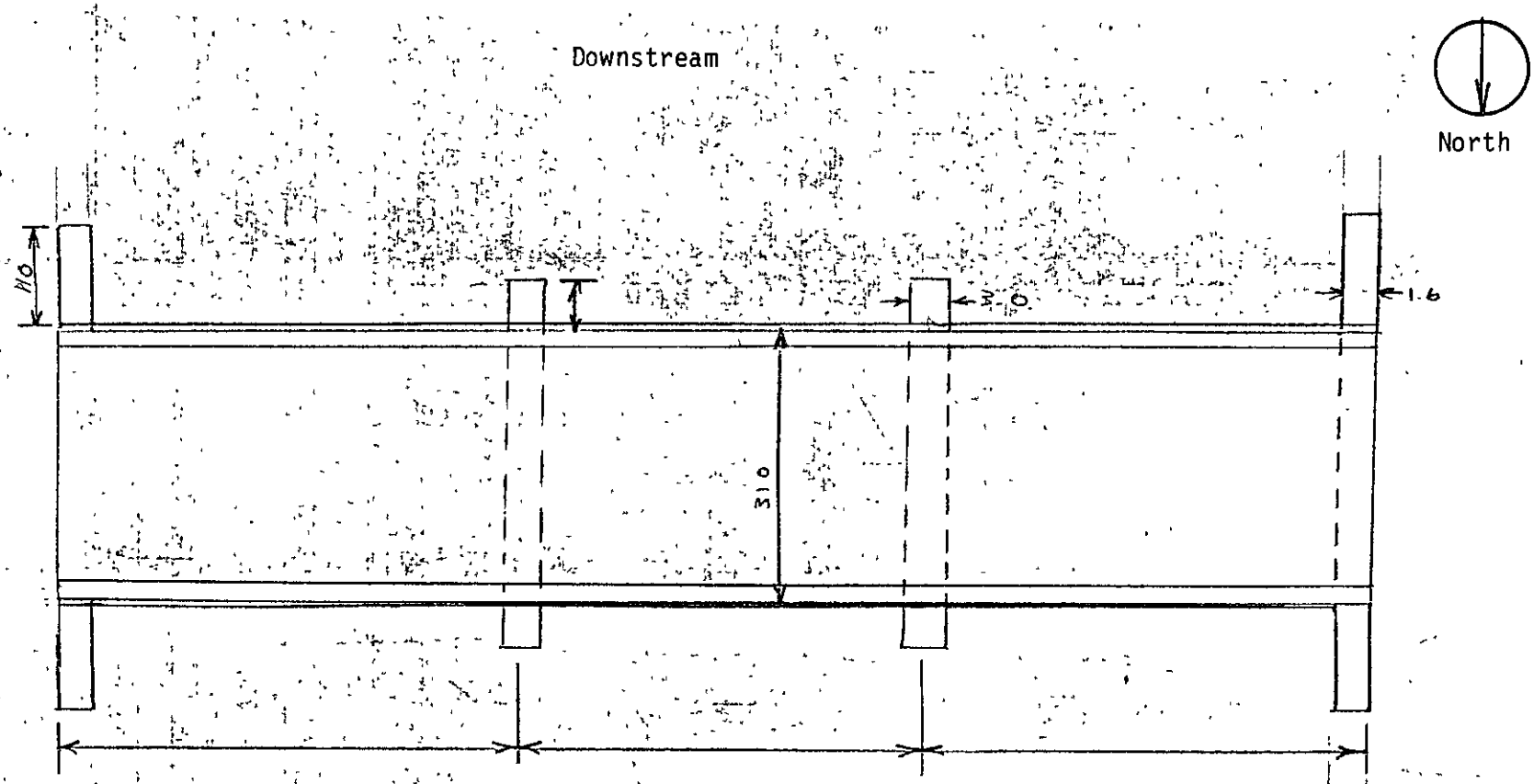
Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: S.C.

Date: 10/9/80

Sheet 1 of 2

Community: THOMAS TWP	Structure: SHOEMAKER ROAD BRIDGE	Type: PRE-FORMED CONC.	Station: 228+70



PLAN VIEW SKETCH

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LANSING, MICHIGAN 48933
(517) 485-0555

By: J.S.C.

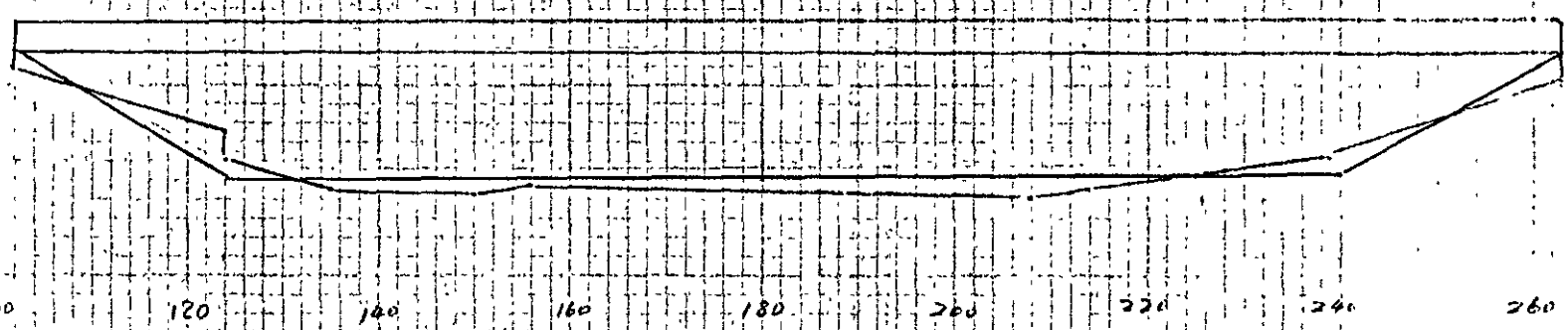
Date: 10/9/80

Sheet 2 of 2

102880

Shoemaker Rd Bridge 228+70

Scale 1" = 20'



BWC	ELEV	BWP	SS
11.5	580	4	23/14 = 1.57

WP 330
330

A 1856
1847

$A_{net} = 1850 - 4 \times 15.1 = 1790$

$W.P. = 330 + 4 \times 15.1 = 390.4$

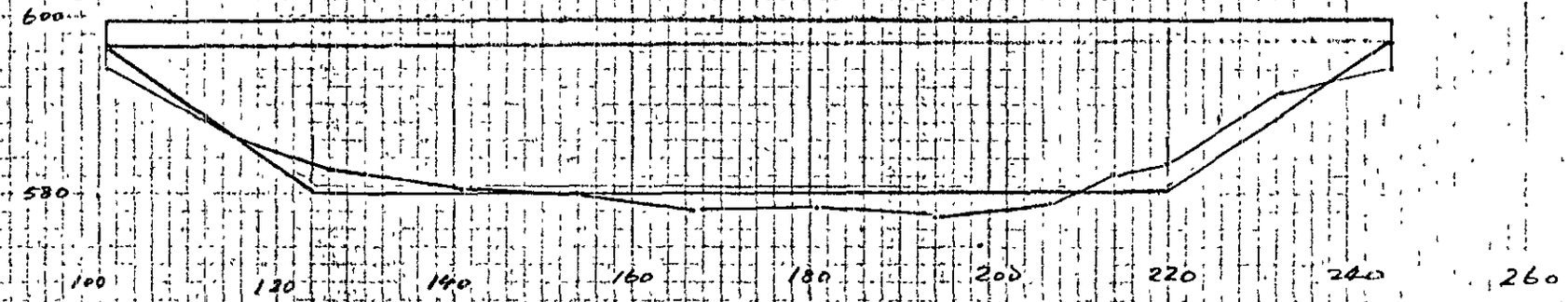
$R^{1.33} = 7.58$

$\frac{29.1 \times .0103^2 \times 31}{7.58} = 0.11$

$\times K \circ R = 1.61$

C&O R.R. Trustle Sta. 230+00 Scale 1" = 20' 102880

596.70 Apias = 2567
581.61



143
95

$\frac{24}{16.5} = 1.45$ $A_{Net} = 1730$

W.P. = 487 $\bar{X} = 540$

10 x 2.7

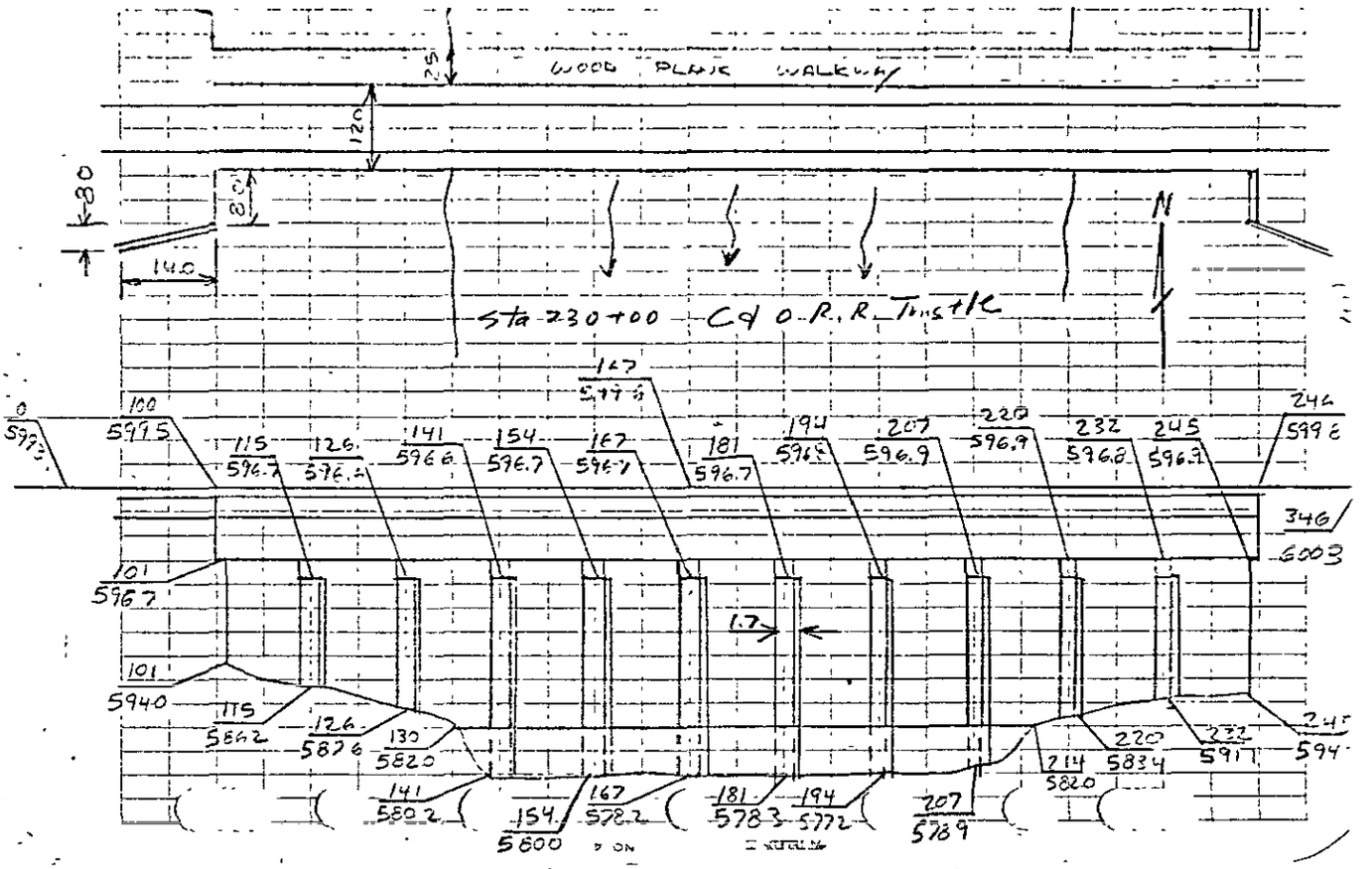
$\frac{29.1 \times 0.03^2 \times 14.5}{5.4} = 0.07$

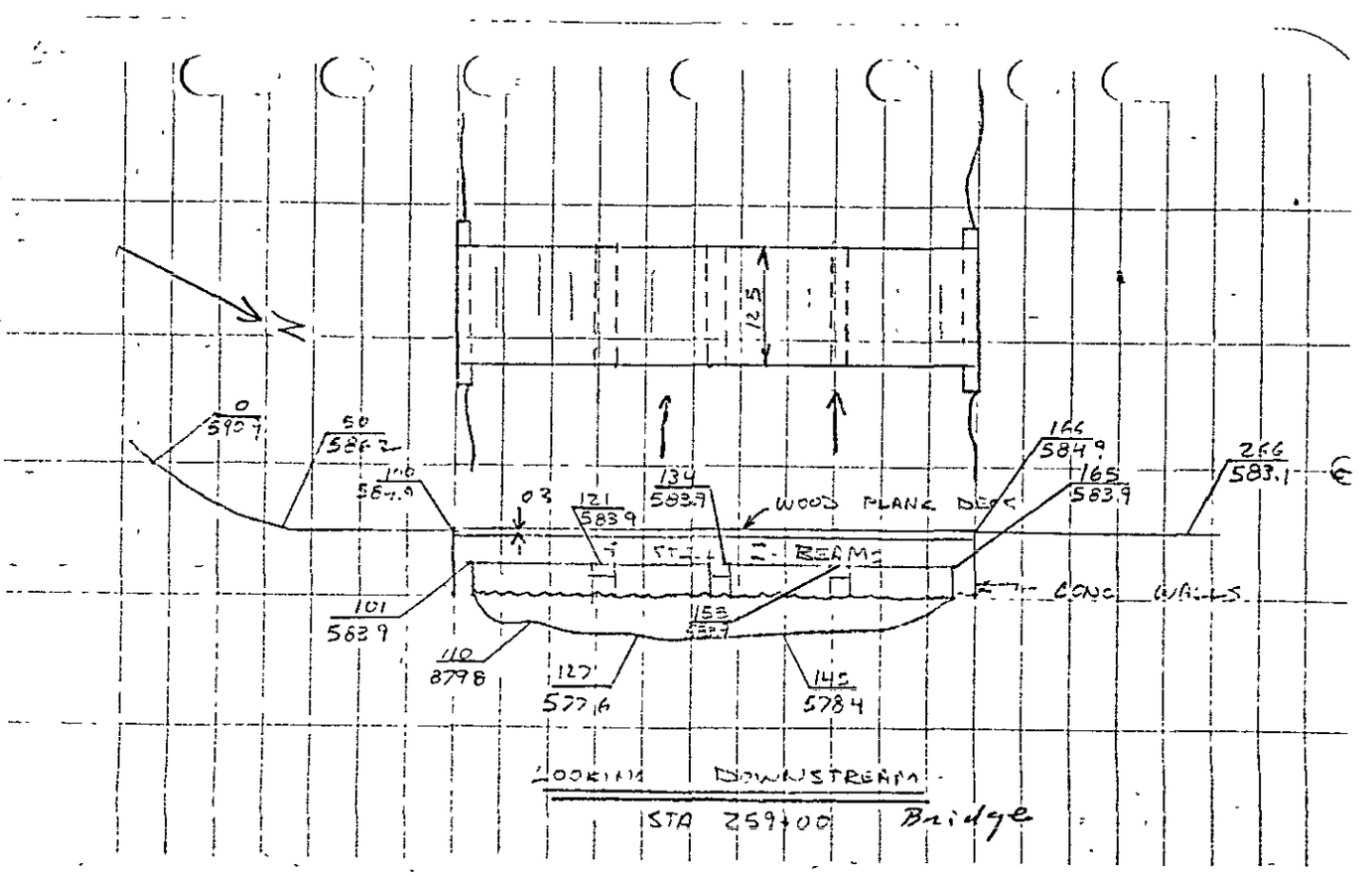
XKOR = 1.57

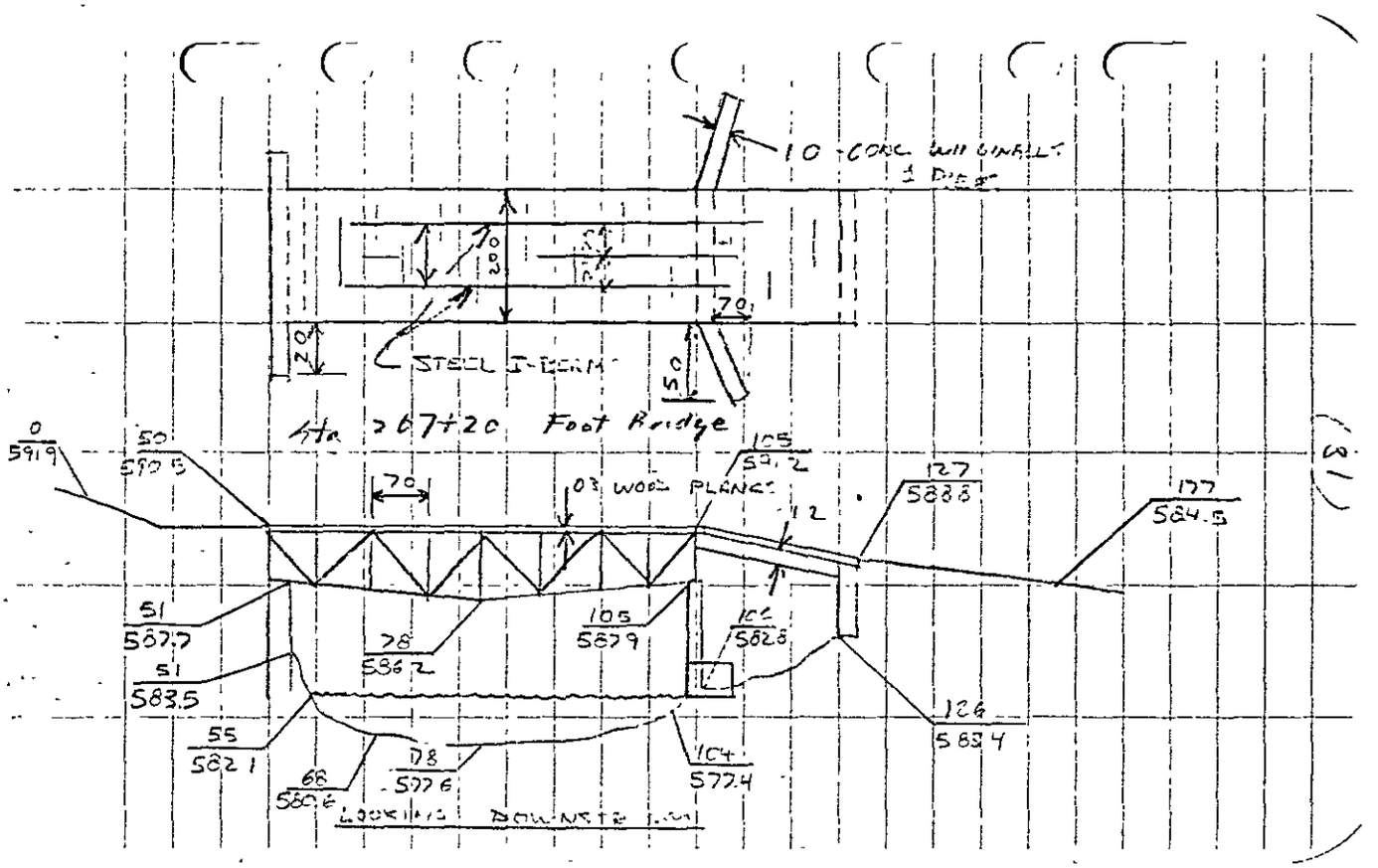
W.P. 297
297

A 1987
1997

TRAP = A 1974


WOOD PLANK WALKWAY
Sta 230+00 C&O R.R. Trestle
N
346
6003
1.7


N
WOOD PLANK DECK
STEEL I-BEAMS
CONC WALLS
LOOKING DOWNSTREAM
STA 259+00 Bridge


STEEL I-BEAM
Sta 267+20 Foot Bridge
WOOD PLANKS
LOOKING DOWNSTREAM

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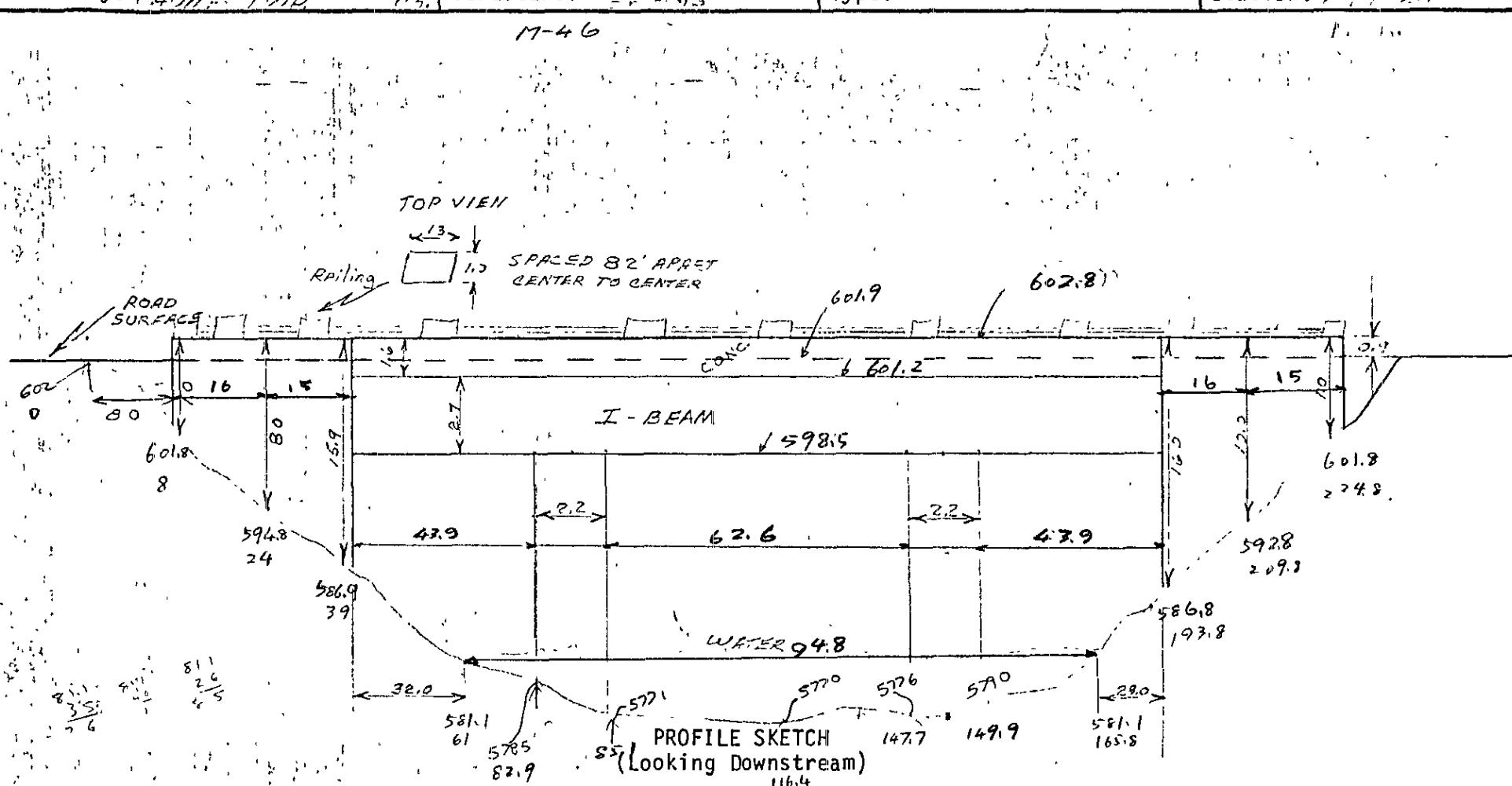


Length: 154.8'	Width: 105.4'	Skew:	Water Elevation: 581.0'
No. of Piers: 2	Width of Piers: 8.2'	Shape of Piers: Rectangular	

Notes:

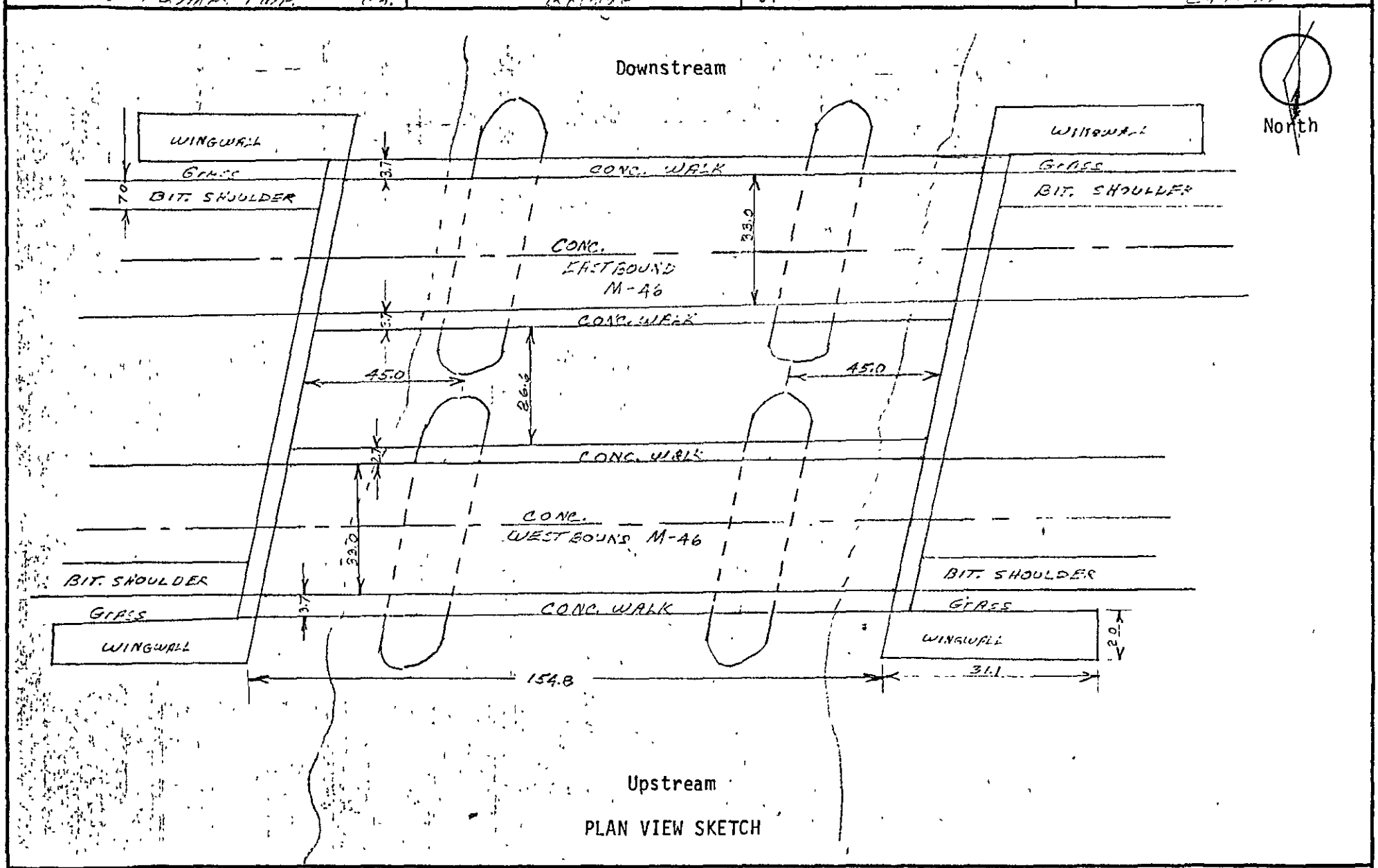
Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. Fisher

Date: 5-27-79

Sheet 1 of 2

Community: Tuscarora Twp. Saginaw Co.	Structure: Bridge	Type:	Station: 299+20



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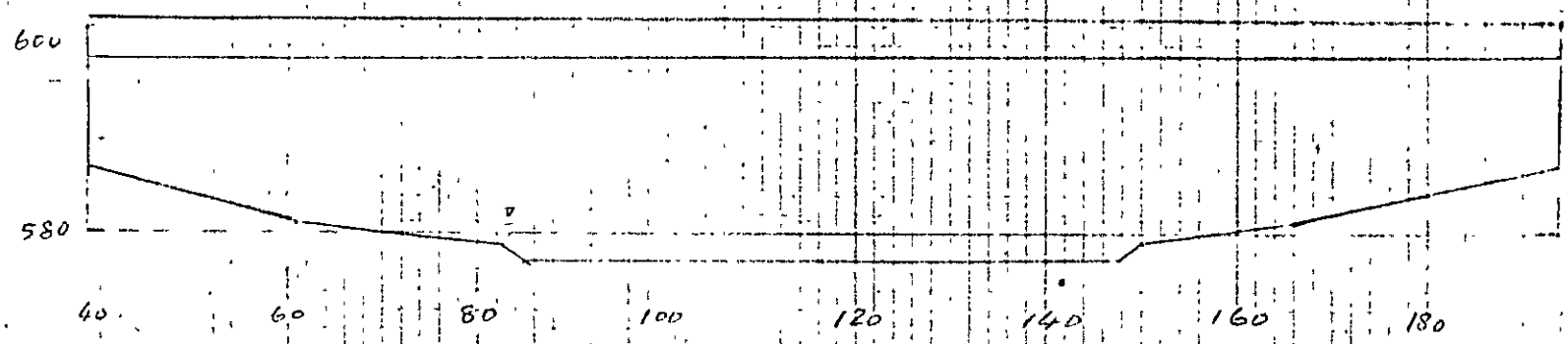
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. EISELE

Date: 8-27-79

Sheet 2 of 2

M-46 Bridge Sta 299+20 Thomas Twp 103080



W.P. = 335.9 Area = 2877

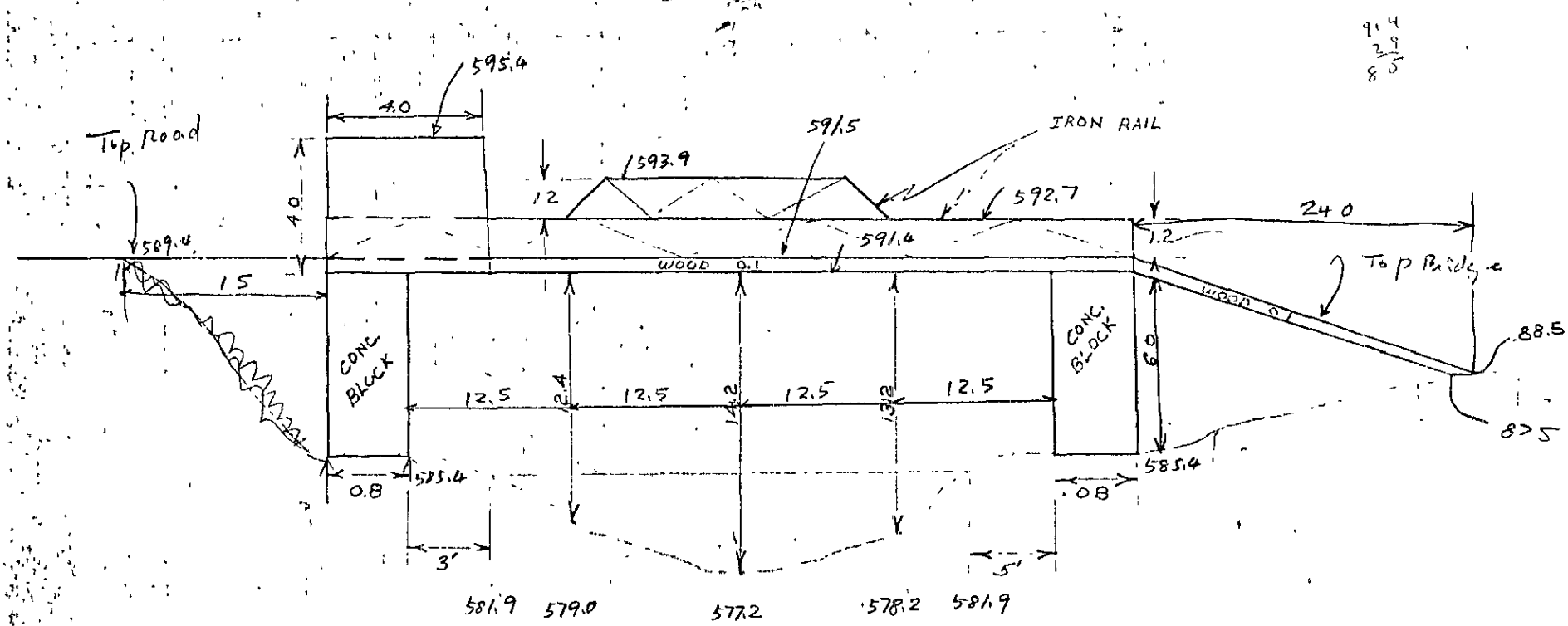
A_{net} = 2877 - .44 x 20 = 2789

W.P. = 335.9 - 80 = 255.9 R = 10.90

$$\frac{29.1 \times 0.025^2 \times 105.4}{10.9^{1.33}} = 0.08$$

XKOR = 1.58

Community: THOMAS TWP. SAGINAW CO.	Structure: FOOT BRIDGE (to Golf Course)	Type:	Station: 365+60



PROFILE SKETCH
(Looking Downstream)

Length: 73.0'	Width: 77'	Skew: 90° TO CREEK	Water Elevation: 591.1'
No. of Piers: 2	Width of Piers: 0.8'	Shape of Piers: RECTANGULAR	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

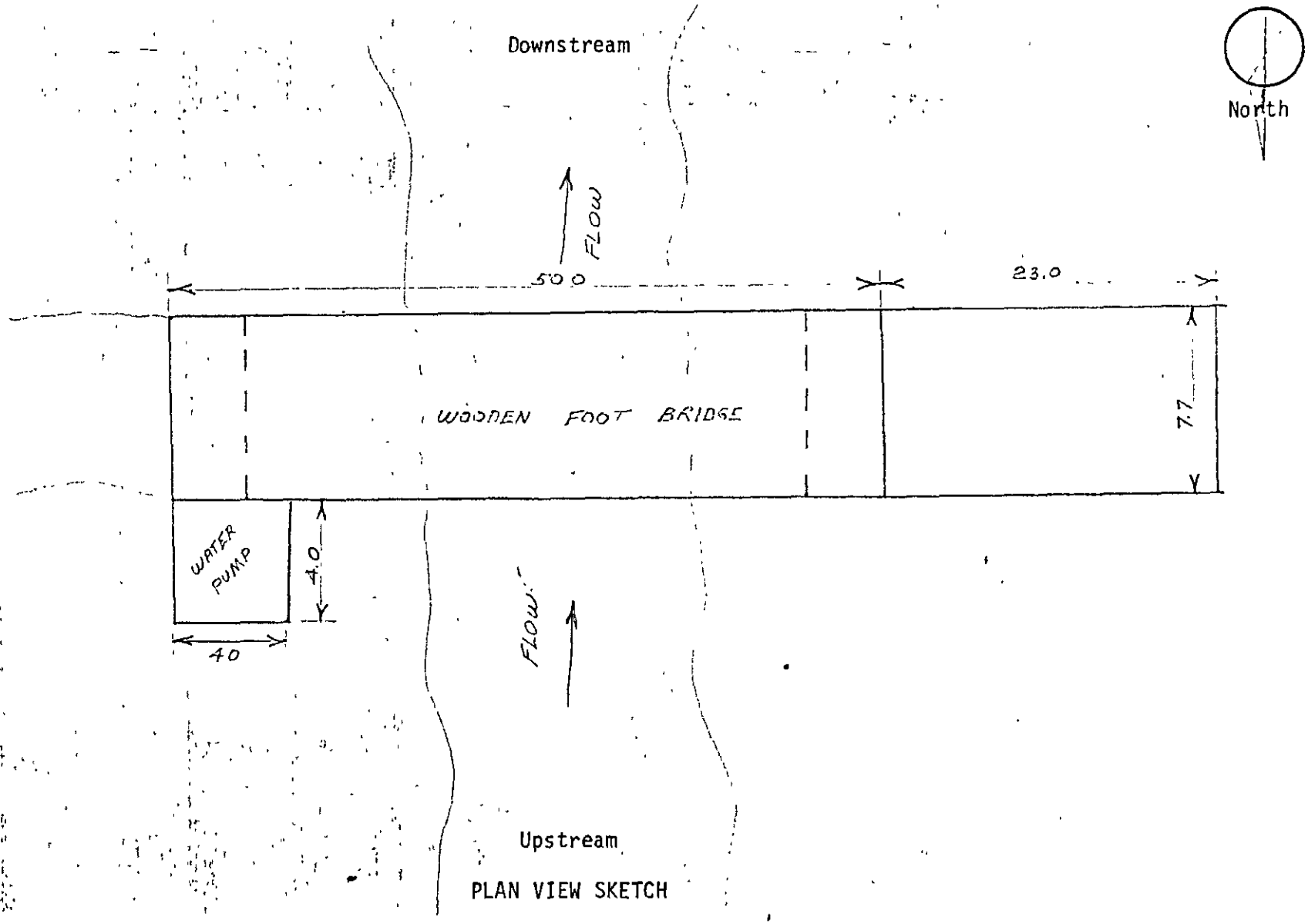
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. EISELE

Date: 9-20-79

Sheet 1 of 2

Community: THOMAS TWP SAGINAW, MI	Structure: FOOT BRIDGE	Type:	Station: 345+50



PLAN VIEW SKETCH

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ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

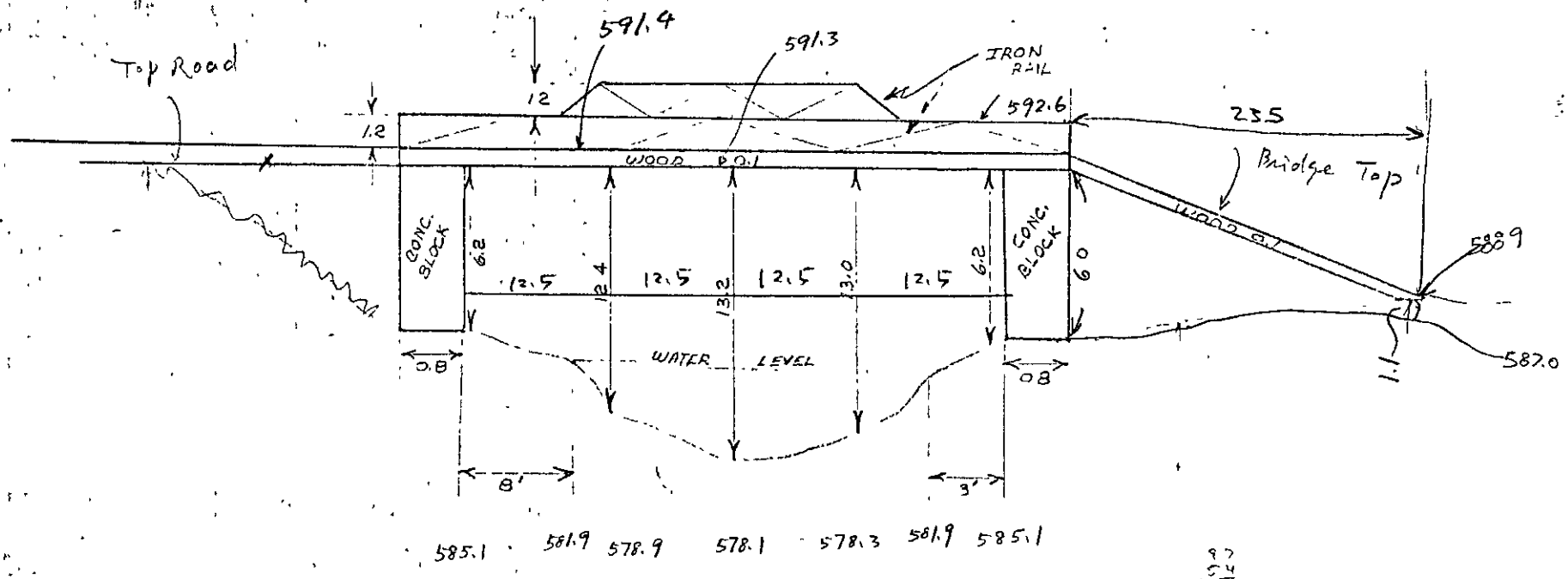
By: R. Eisele

Date: 9-20-79

Sheet 2 of 2

Community: THOMAS TWP. CRAWFORD CO.	Structure: FOOT BRIDGE	Type:	Station: [illegible]

(to Golf Course)



PROFILE SKETCH
(Looking Downstream)

Length: 73'	Width: 7.7'	Skew: 90° TO CREEK	Water Elevation: [illegible]
No. of Piers: 2	Width of Piers: 0.8'	Shape of Piers: RECTANGULAR	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

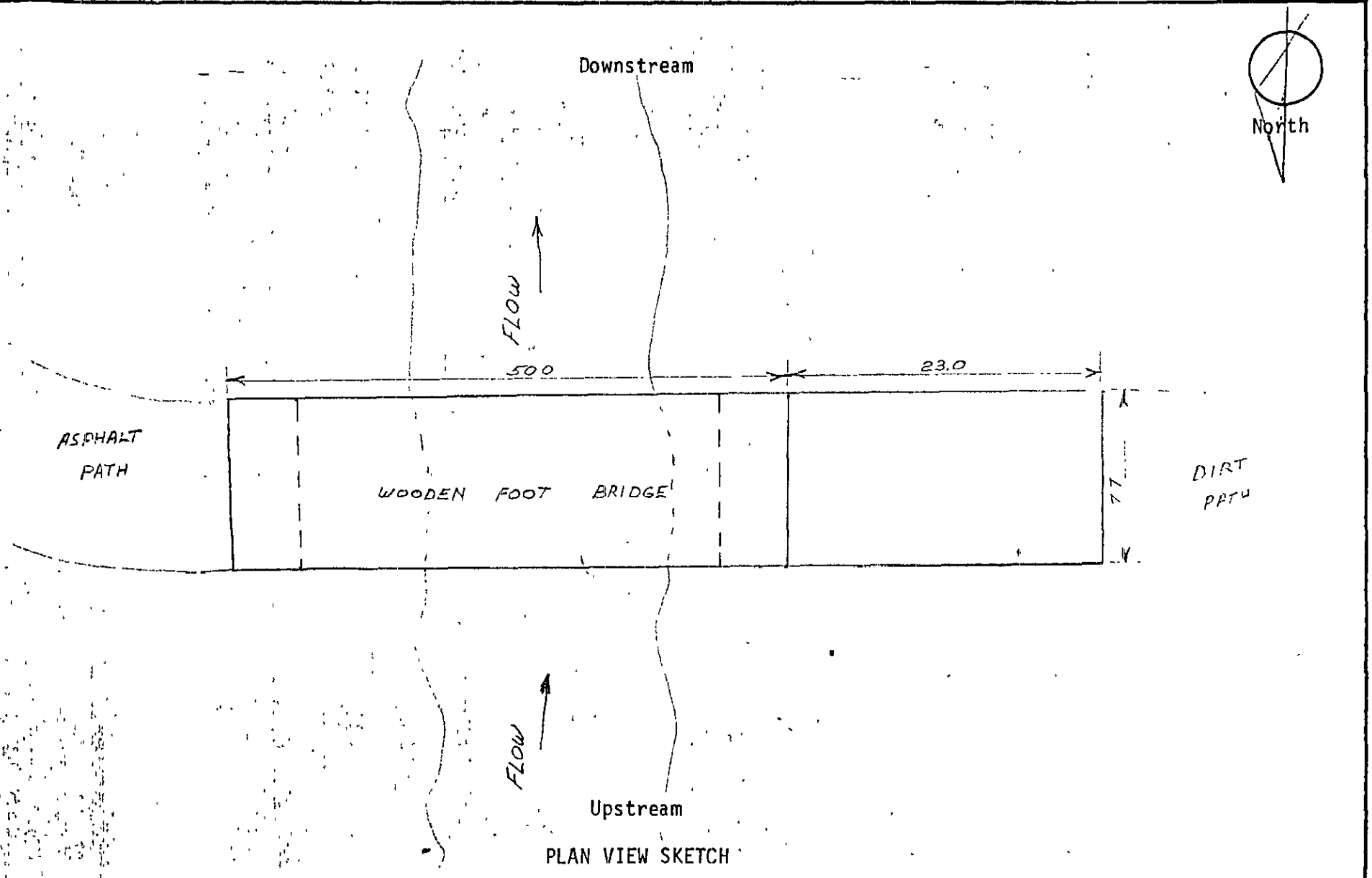
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. Eisele

Date: 9-20-79

Sheet 1 of 2

Community: THOMAS TWP CRAWFORD CO.	Structure: FOOT BRIDGE	Type:	Station: [illegible]



PLAN VIEW SKETCH

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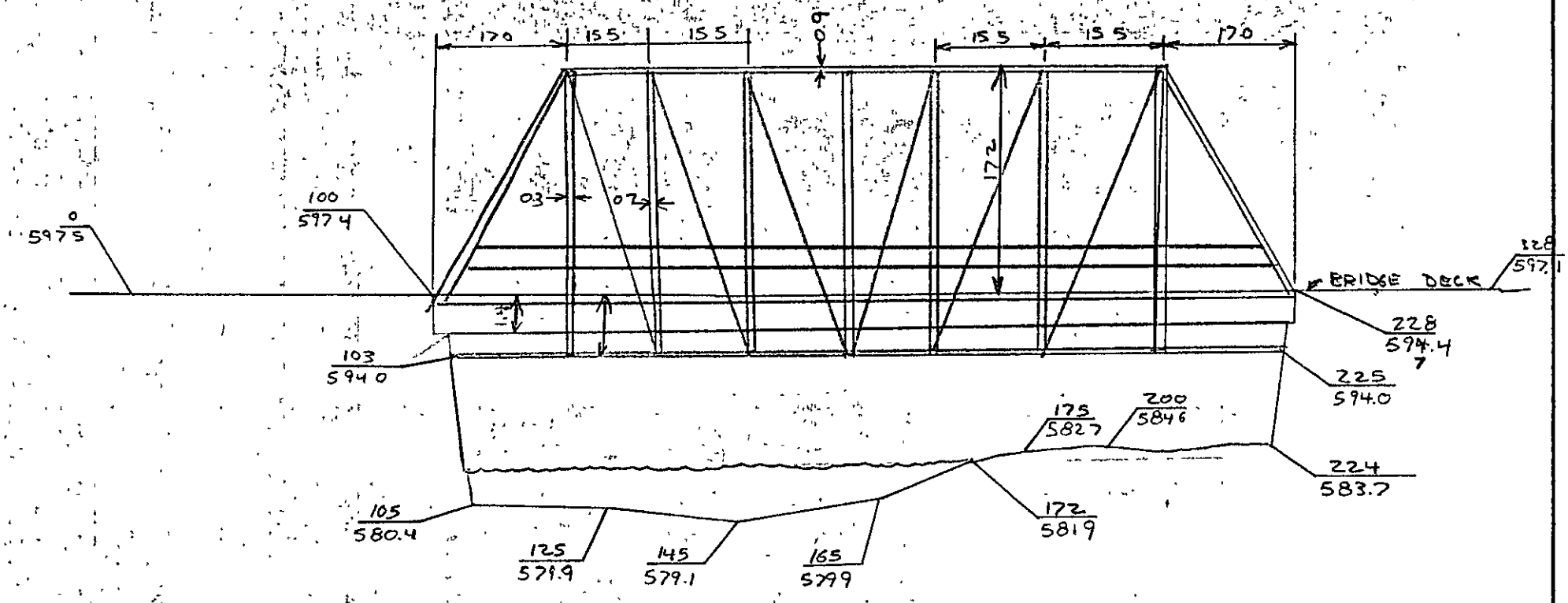
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. Eisele

Date: 9-20-79

Sheet 2 of 2

Community: THOMAS TWP.	Structure: GEDDES RD BRIDGE	Type: STEEL CANTILEVER	Station: 373+20



PROFILE SKETCH
(Looking Downstream)

Length: 128	Width: 19.0	Skew: —	Water Elevation: 581.9
No. of Piers: —	Width of Piers: —	Shape of Piers: —	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: JSC.

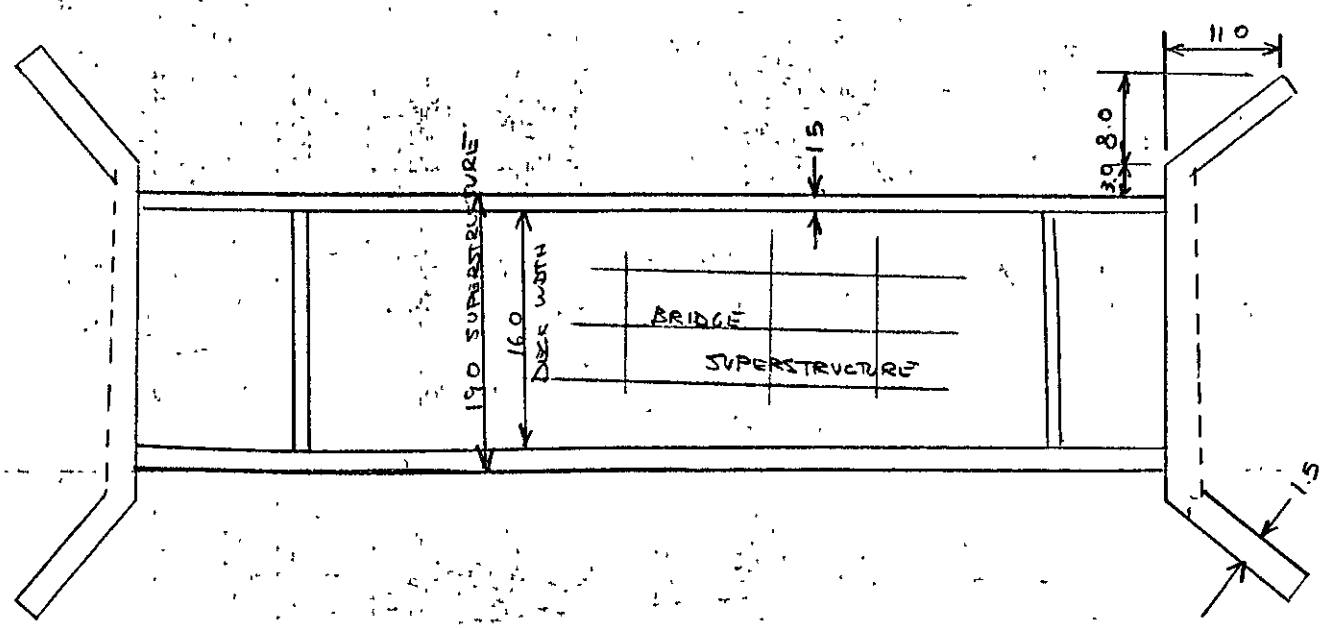
Date: 10/9/80

Sheet 1 of 2

Community: THOMAS TWP	Structure: GEDDES RD. BRIDGE	Type: STEEL CANTILEVER	Station: 373+20

Downstream

North



Upstream

PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

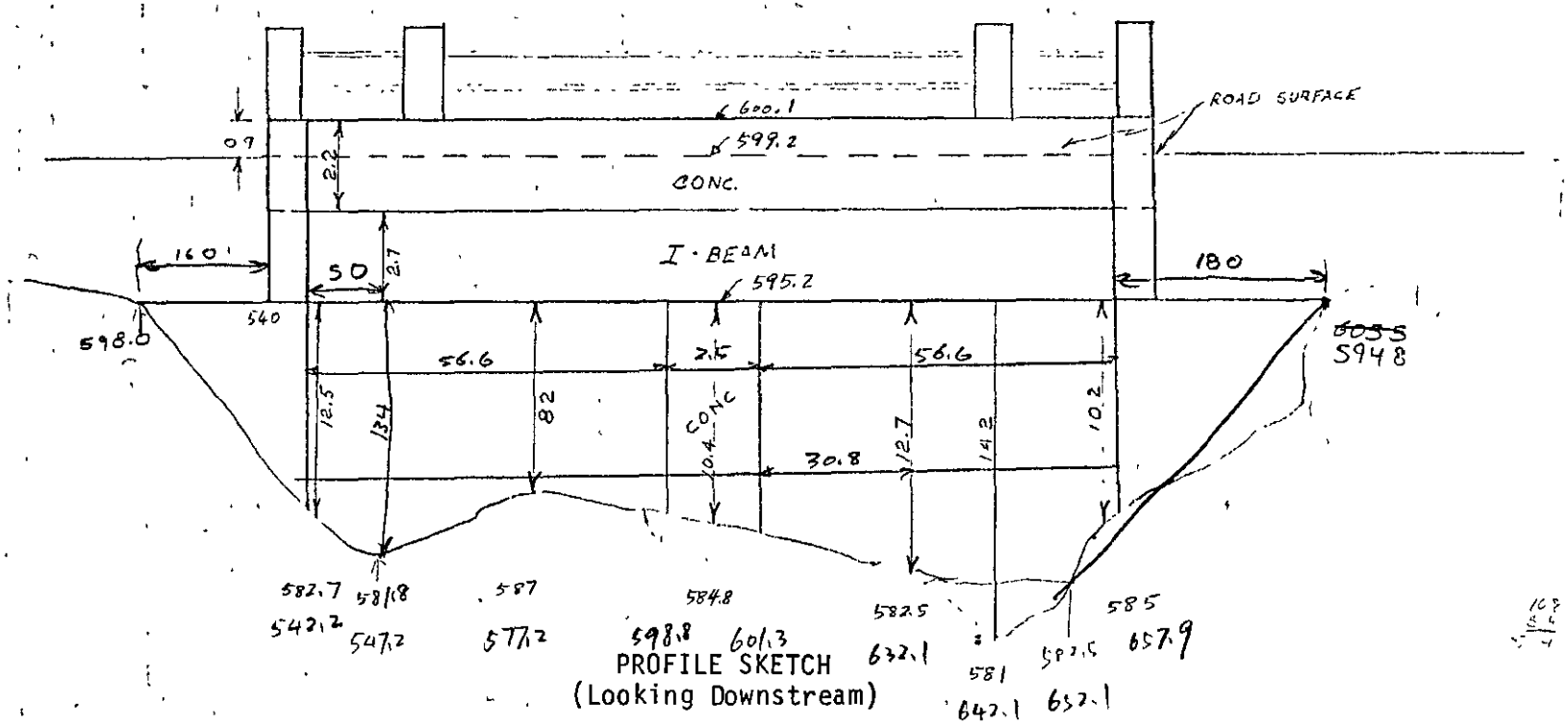
By: J.S.C.

Date: 10/9/80

Sheet 2 of 2

Community: THOMAS TWP. [illegible]	Structure: Bridge	Type:	Station: [illegible]

Frost Rd. Bridge



PROFILE SKETCH
(Looking Downstream)

Length: 120.0'	Width: 29.4'	Skew: 90° TO CREEK	Water Elevation: 583.0'
No. of Piers: 1	Width of Piers: 2.5	Shape of Piers: RECTANGULAR	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

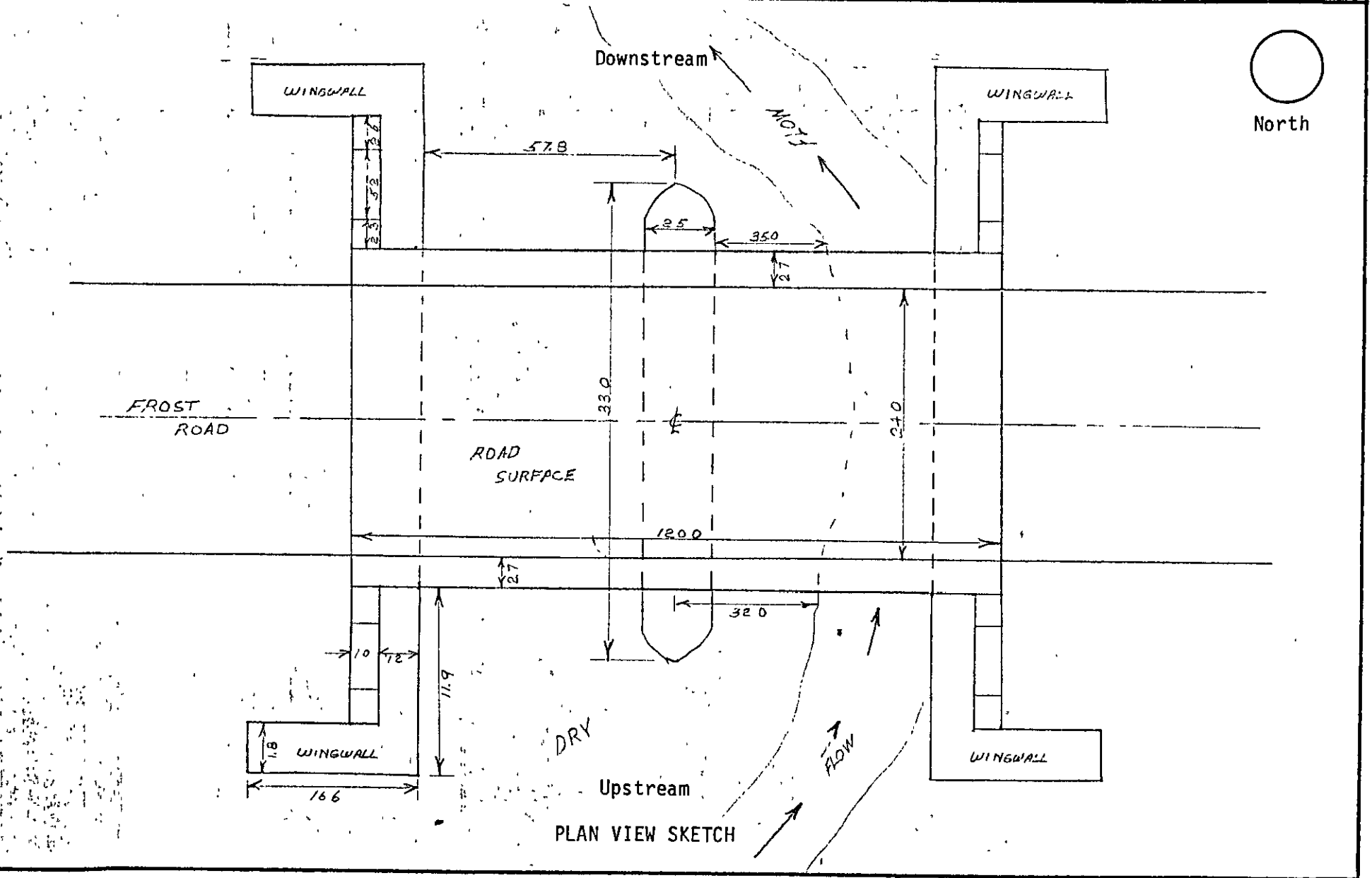
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. Eisele

Date: 9-17-79

Sheet 1 of 2

Community: THOMAS TWP. CLINTON CO.	Structure: Bridge	Type:	Station: 139+00



Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

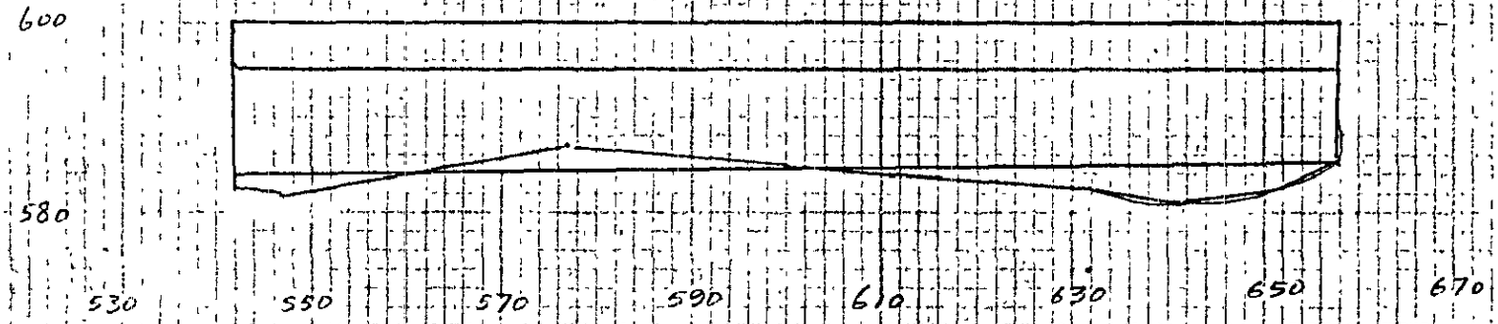
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. Ficala

Date: 9-19-79

Sheet 2 of 2

Frost Rd. Bridge 488+20 110380



$A_{net} = 1307 - 8.5 \times 10.4 = 1281$

$W.P = 254 + 20.8 = 274.8$

$R^{1.33} = 7.75$

$\frac{29.1 \times 0.075^2 \times 29.4}{7.75} = 0.07$

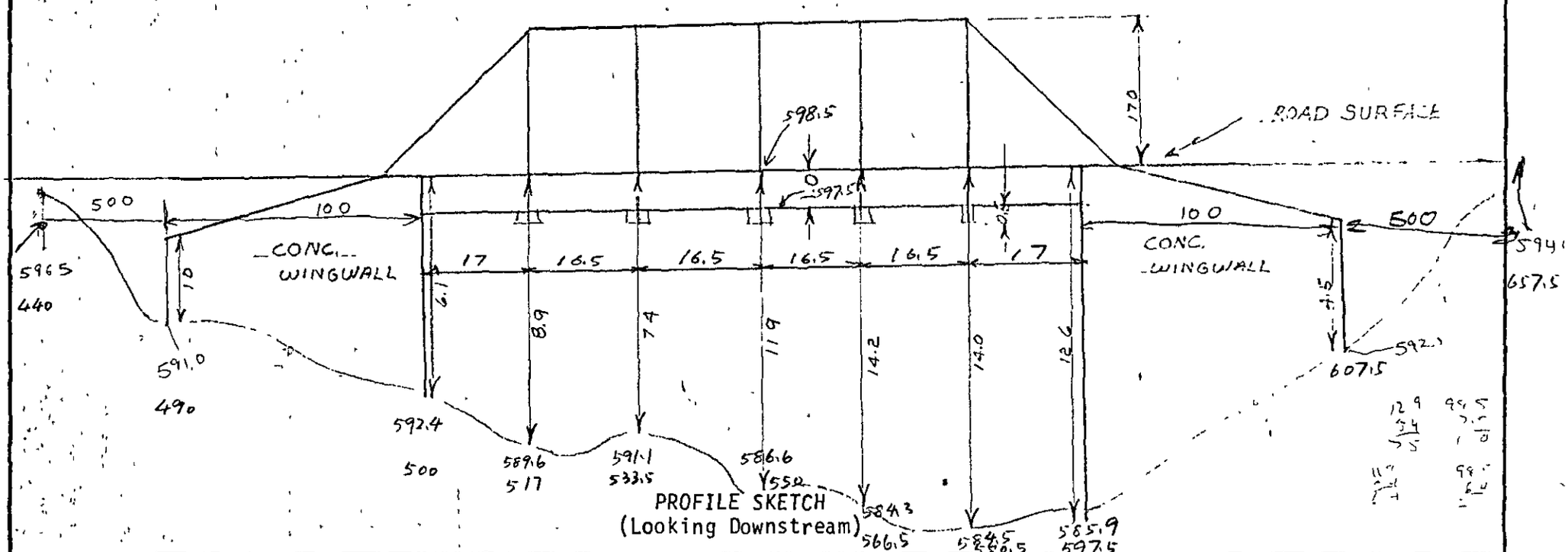
$XKOR = 1.57$

WP 254
254

A 1307
1307

Community: [illegible]	Structure: Bridge	Type:	Station: [illegible]

Lone Rd. Bridge



Length: 95'	Width: 18'	Skew: 90° TO [illegible]	Water Elevation: [illegible]
No. of Piers: None	Width of Piers: —	Shape of Piers: —	

Notes:

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

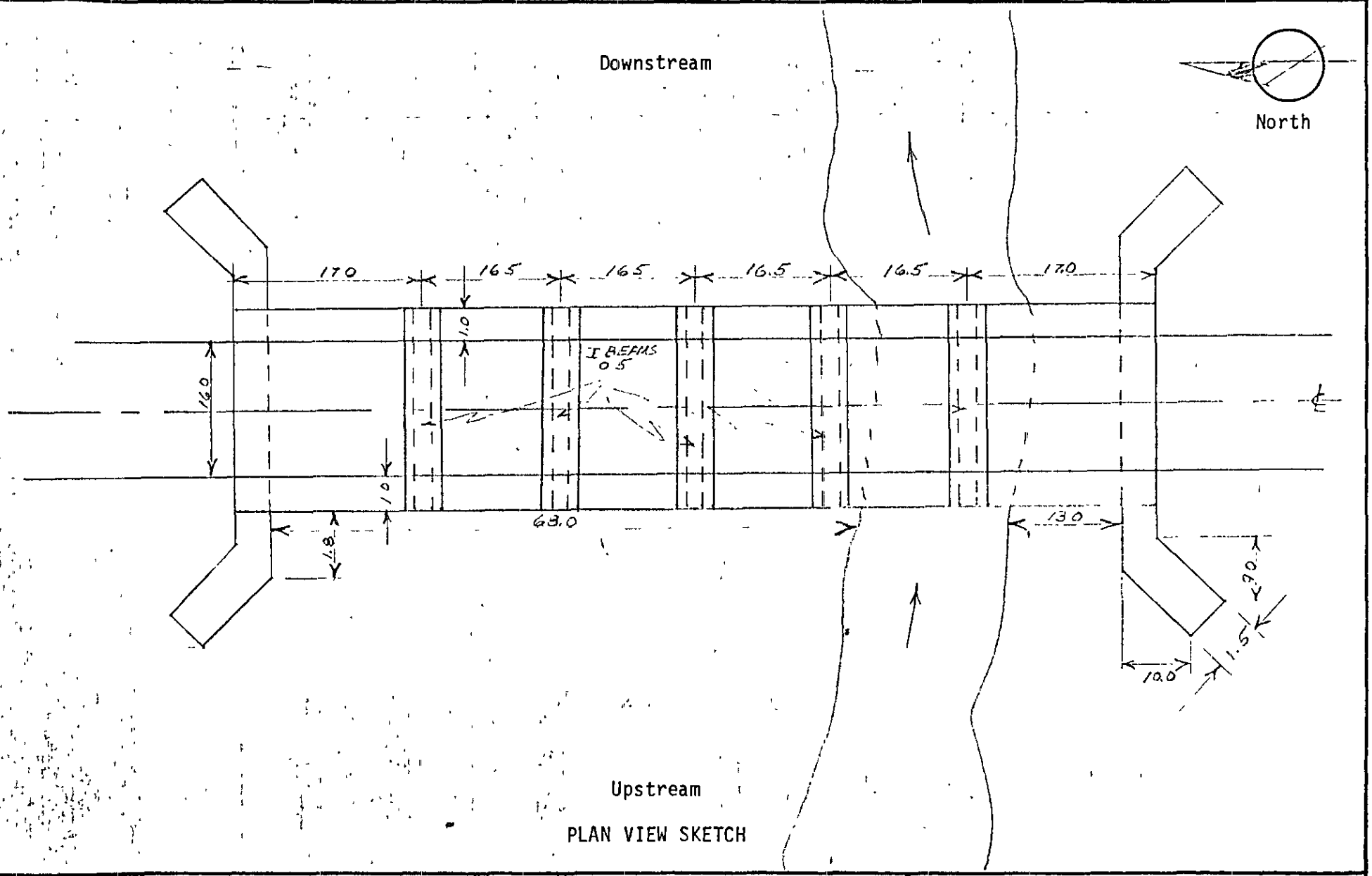
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. EISELE

Date: 10-15-79

Sheet 1 of 2

Community: THOMAS TWP SAGINAW Co.	Structure: BRIDGE	Type:	Station: 513+70



PLAN VIEW SKETCH

Gove Associates Inc.
ARCHITECTS/ENGINEERS/PLANNERS/SURVEYORS

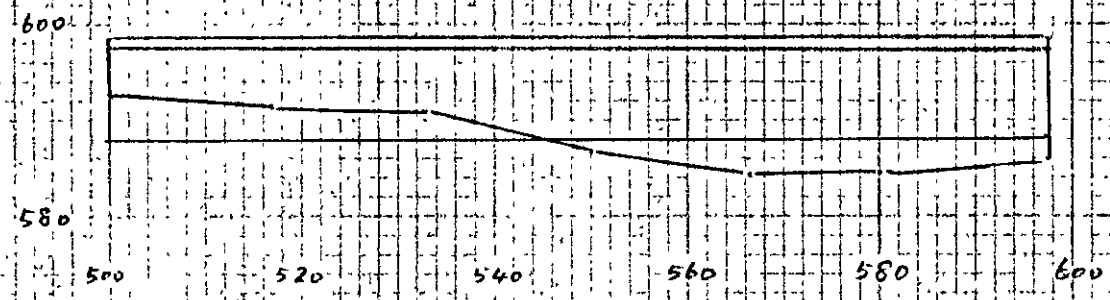
210 MILL STREET
LANSING, MICHIGAN 48933
(517) 485-0555

By: R. EISELE

Date: 10-15-79

Sheet 2 of 2

Lone St Bridge Station 513+70 110380



$R = \frac{920}{210} = 4.38$

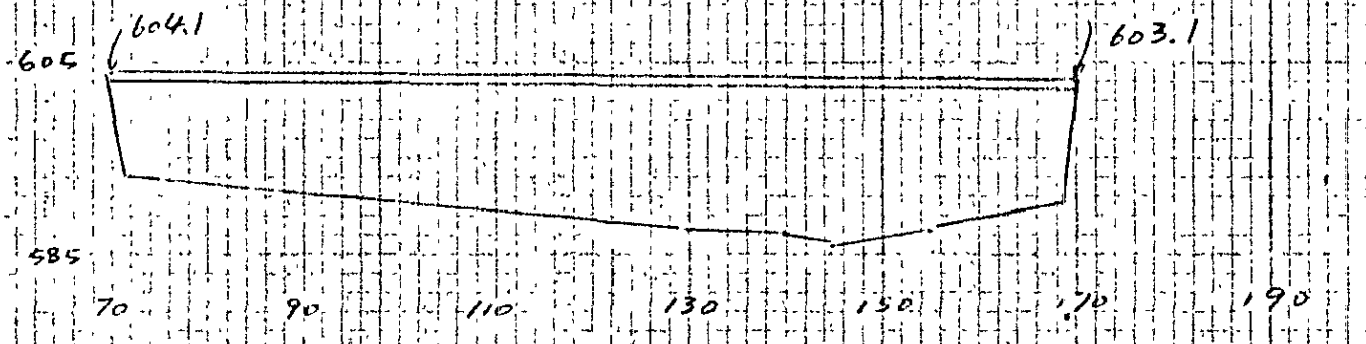
$\frac{29.1 \times 0.025^2 \times 18}{4.38^{1.33}} = 0.05$

XKOR = 1.55

WQ 210
210

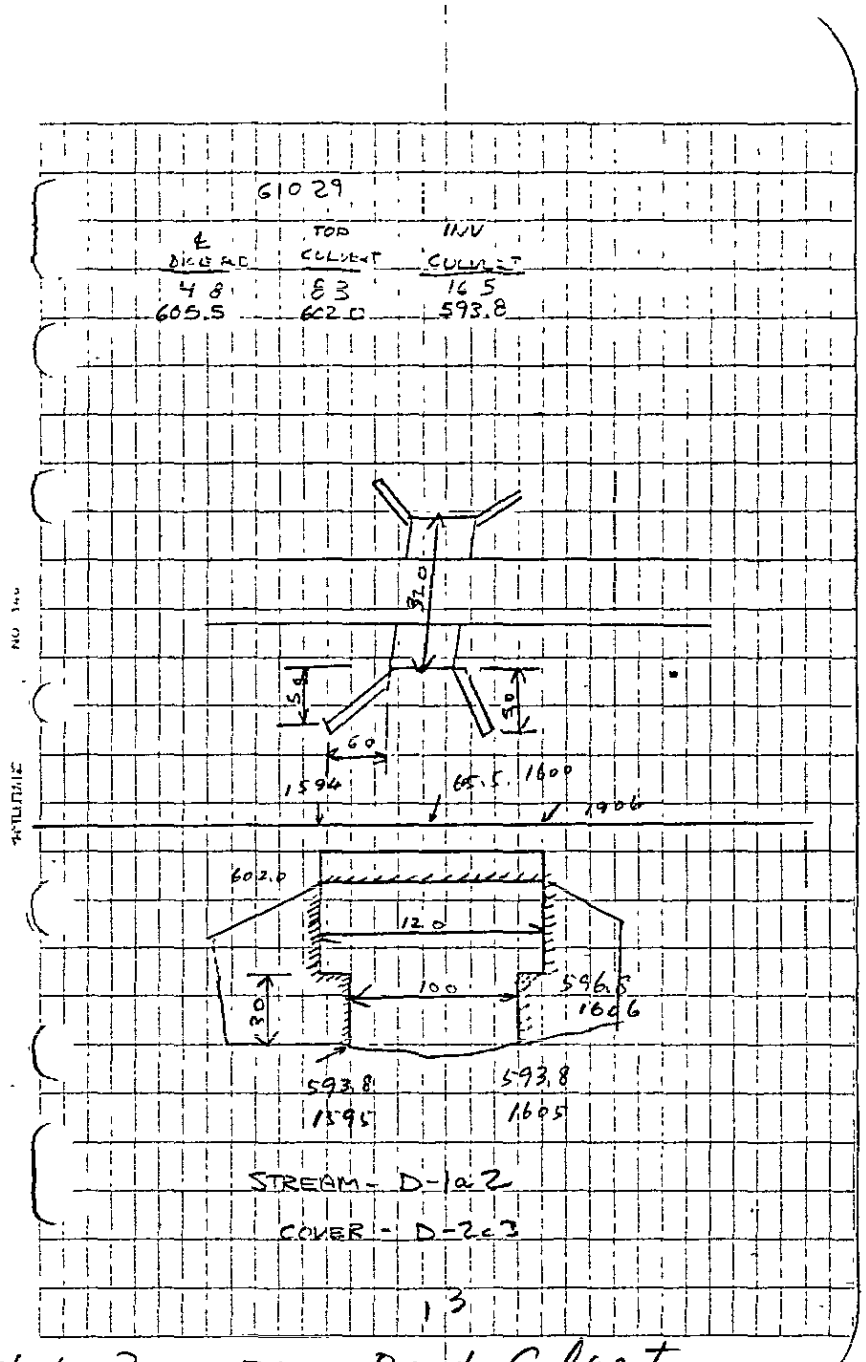
A 915
921

Dice Rd. Bridge Station 562+70 110480



WP 218
218

A 1300
1304



Hatch Run, Dice Road Culvert

Swan Creek.

(A-1) 100-year flow distribution & floodway delineation

(A-2) Iplot

(A-3) Summary printout

Hatch Run

(B-1) 100-year flow distribution & floodway delineation

(B-2) Iplot "

(B-3) Summary printout

RECEIVED
JUL 15 1980
WATER MANAGEMENT

MOORE BUSINESS FO

GOVEA	JGOVEDSS	0187	GO.FT06F001	7.28.14	1 APR 81	WANG	WANG
GOVEA	JGOVEDSS	0187	GO.FT06F001	7.28.14	1 APR 81	WANG	WANG
GOVEA	JGOVEDSS	0187	GO.FT06F001	7.28.14	1 APR 81	WANG	WANG

Swan Creek - Modified model 040181

RECEIVED
APR 14 1981
WATER MANAGEMENT

```
*****************************************************
  HEC2 RELEASE DATED NOV-76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

C
T1      SWAN CREEK,THOMAS TWP, PROJECT NO. 8547, SWAN
T2      SWAN CREEK
T3      SWAN CREEK

J1  ICHECK    INQ     NINV    IDIR    STRT    METRIC  HVINS   Q       WSEL    FQ

     0.       4.      0.      0.     0.0     0.0     0.0     0.     590.400  0.0

J2  NPROF     IPLOT   PRFVS   XSECV   XSECH   FN      ALLOC   IBW     CHNIM   ITRACE

    1.000     0.0     1.000   0.0     0.0     0.0     0.0     0.0     0.0     15.000

J3  VARIABLE CODES FOR SUMMARY-PRINTOUT

    110.000   200.000 150.000 0.0     0.0     0.0     0.0     0.0     0.0     0.0

NC   0.120    0.120   0.045   0.100   0.300   0.0     0.0     0.0     0.0     0.0
QT   5.000    3700.000 5200.000 5500.000 5900.000 5500.000 0.0 0.0     0.0     0.0

        A  MANUFACTURED FROM USGS TOPOMAP

X1  14520.000 15.000  900.000 1070.000 0.0     0.0     0.0     0.0     0.0     0.0
GR  595.000   300.000 590.000 450.000  585.000 530.000 581.500 900.000 581.100 909.000
GR  579.400   918.000 576.600 953.000  574.500 988.000 575.800 1023.000 579.400 1058.000
GR  580.200   1070.000 585.000 1140.000 590.000 1200.000 595.000 1530.000 595.000 2150.000
ET  0.0       0.0     0.0     0.0     0.0     9.100   0.0     0.0     870.000 2400.000

        B  MANUFACTURED FROM USGS TOPOMAP
```

GR	595.000	400.000	590.000	1800.000	585.000	1900.000	581.900	2200.000	581.500	2207.000
GR	579.800	2214.000	577.000	2241.000	574.900	2268.000	576.200	2295.000	579.800	2322.000
GR	580.600	2330.000	585.000	2360.000	590.000	2420.000	595.000	2500.000	600.000	3200.000
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	520.000	950.000

C MANUFACTURED FROM USGS TOPOMAP

X1	19335.000	14.000	670.000	740.000	1720.000	910.000	1875.000	0.0	0.0	0.0
GR	595.000	400.000	590.000	600.000	585.000	620.000	582.400	670.000	582.000	674.000
GR	580.300	678.000	577.500	693.000	575.400	708.000	576.700	723.000	580.300	738.000
GR	581.100	740.000	585.000	800.000	590.000	890.000	592.000	1700.000	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	600.000	1230.000

D MANUFACTURED FROM USGS TOPOMAP

X1	21420.000	15.000	840.000	970.000	1650.000	2120.000	2095.000	0.0	0.0	0.0
GR	595.000	500.000	590.000	580.000	585.000	790.000	582.700	840.000	582.300	847.000
GR	580.600	854.000	577.800	881.000	575.700	908.000	577.000	935.000	580.600	962.000
GR	581.400	970.000	585.000	1020.000	590.000	1100.000	595.000	1300.000	595.000	2200.000
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

E MANUFACTURED FROM USGS TOPOMAP

X1	22680.000	14.000	300.000	500.000	1235.000	1235.000	1280.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	250.000	0.0	550.000	0.0	0.0	0.0	0.0
GR	595.000	0.0	590.000	270.000	585.000	290.000	582.800	300.000	582.400	310.000
GR	580.700	320.000	577.900	362.000	575.800	404.000	577.100	446.000	580.700	488.000
GR	581.500	500.000	585.000	600.000	590.000	900.000	595.000	1100.000	0.0	0.0
NC	0.030	0.030	0.030	0.300	0.500	0.0	0.0	0.0	0.0	0.0

F SHOEMAKER RD BRIDGE, TR 595.8, LC 593.5

X1	22870.000	15.000	102.000	263.000	290.000	220.000	245.000	0.0	0.0	0.0
GR	594.800	0.0	596.800	102.000	591.800	102.000	585.500	124.000	582.200	124.000
GR	579.100	135.000	578.400	150.000	577.500	156.000	578.100	208.000	579.300	214.000
GR	580.600	225.000	582.200	239.000	590.500	263.000	596.800	263.000	595.100	366.000
SB	1.250	1.610	2.500	0.0	115.000	4.000	1790.000	1.570	580.000	580.000

X1	22871.000	0.0	0.0	0.0	31.000	31.000	31.000	0.0	0.0	0.0
X2	0.0	0.0	1.000	593.600	595.100	0.0	0.0	0.0	0.0	0.0
BT	4.000	0.0	594.800	594.800	102.000	596.800	593.500	263.000	596.800	593.600
BT	366.000	595.100	595.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0

G C & O R R TRUSTLE, TR 599.6, LC 596.7

X1	23000.000	18.000	101.000	245.000	125.000	85.000	100.000	0.0	0.0	0.0
GR	599.300	0.0	599.500	101.000	594.000	101.000	586.200	115.000	582.600	126.000
GR	582.000	130.000	580.200	141.000	580.000	154.000	578.200	167.000	578.300	181.000
GR	577.200	194.000	578.900	207.000	582.000	214.000	583.400	220.000	591.100	232.000
GR	594.000	245.000	599.800	246.000	600.300	346.000	0.0	0.0	0.0	0.0
SB	1.050	1.570	2.500	0.0	95.000	17.000	1730.000	1.450	580.000	580.000

X1	23001.000	0.0	0.0	0.0	14.500	14.500	14.500	0.0	0.0	0.0
X2	0.0	0.0	1.000	596.900	599.500	0.0	0.0	0.0	0.0	0.0
BT	4.000	0.0	599.300	599.300	101.000	599.500	596.700	245.000	599.800	596.900
BT	346.000	600.300	600.300	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.150	0.150	0.045	0.300	0.500	0.0				

MOORE BUSINESS FORMS, INC 27

H

X1	23285.000	16.000	560.000	710.000	260.000	295.000	280.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	230.000	0.0	830.000	0.0	0.0	0.0	0.0
GR	596.000	200.000	592.000	210.000	588.000	320.000	584.000	540.000	583.400	560.000
GR	583.000	568.000	581.300	576.000	578.500	607.000	576.400	638.000	577.300	669.000
GR	581.000	700.000	582.100	710.000	584.000	720.000	588.000	765.000	592.000	815.000
GR	596.000	930.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.070	0.090	0.042	0.100	0.300	0.0	0.0	0.0	0.0	0.0

I

X1	25000.000	16.000	1453.000	1549.000	1595.000	1505.000	1750.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1190.000	0.0	2600.000	0.0	0.0	0.0	0.0
GR	595.000	1100.000	592.000	1265.000	588.000	1330.000	584.000	1365.000	583.400	1453.000
GR	583.000	1458.000	581.300	1463.000	578.500	1483.000	576.400	1503.000	577.700	1523.000
GR	581.300	1543.000	582.100	1549.000	584.000	1830.000	588.000	1920.000	592.000	1975.000
GR	596.000	2925.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.060	0.050	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

J

X1	25800.000	22.000	1122.000	1250.000	1080.000	1125.000	1160.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1030.000	0.0	1930.000	0.0	0.0	0.0	0.0
GR	599.000	580.000	596.000	1040.000	592.000	1050.000	588.000	1085.000	584.100	1122.000
GR	582.400	1131.000	582.000	1135.000	581.200	1140.000	579.400	1147.000	578.200	1167.000
GR	577.800	1187.000	577.800	1207.000	577.900	1227.000	581.200	1234.000	582.100	1242.000
GR	583.900	1250.000	584.000	1275.000	584.000	1305.000	584.000	1370.000	588.000	1710.000
GR	592.000	1890.000	596.000	2315.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.030	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

K FOOT BRIDGE, TR 584.9, LC 583.9

HIGH SUBMERGED, NBR

X1	25900.000	21.000	1170.000	1234.000	90.000	65.000	90.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1030.000	0.0	2000.000	0.0	0.0	0.0	0.0
GR	598.900	0.0	595.800	110.000	596.700	398.000	595.000	610.000	596.400	782.000
GR	596.000	1031.000	590.900	1069.000	586.200	1119.000	584.800	1145.000	581.900	1170.000
GR	579.800	1179.000	577.600	1196.000	578.400	1214.000	581.900	1234.000	584.000	1255.000
GR	583.100	1335.000	584.000	1365.000	588.000	1680.000	592.000	1915.000	592.000	2000.000
GR	596.000	2460.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	25901.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1030.000	0.0	2000.000	0.0	0.0	0.0	0.0
BT	6.000	1119.000	586.200	586.200	1145.000	585.200	584.800	1170.000	584.900	583.900
BT	1234.000	584.900	583.900	1255.000	584.500	584.000	1335.000	583.100	583.100	0.0

X1	25902.000	0.0	0.0	0.0	12.500	12.500	12.500	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1030.000	0.0	2000.000	0.0	0.0	0.0	0.0

X1	25903.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	1030.000	0.0	2000.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1140.000	2090.000

L

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X1  26000.000    17.000  1212.000  1300.000    80.000    95.000    80.000     0.0       0.0       0.0
GR    599.000   780.000   596.000  1115.000   592.000  1130.000   588.000  1140.000   585.700  1212.000
GR    583.900  1217.000   581.100  1222.000   578.300  1237.000   578.000  1257.000   578.600  1277.000
GR    581.100  1292.000   582.500  1297.000   583.800  1300.000   584.000  1540.000   588.000  1790.000
GR    592.000  2090.000   596.000  2165.000     0.0       0.0       0.0       0.0       0.0       0.0
NC      0.080     0.035     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        M

X1  26320.000    18.000  1460.000  1555.000   310.000   130.000   290.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1415.000     0.0    2520.000     0.0       0.0       0.0       0.0
GR    599.000  1200.000   596.000  1400.000   592.000  1415.000   588.000  1435.000   585.700  1460.000
GR    583.900  1465.000   581.100  1470.000   578.300  1485.000   578.000  1505.000   578.600  1525.000
GR    581.100  1540.000   582.500  1545.000   583.800  1555.000   583.200  1650.000   584.000  1885.000
GR    588.000  2205.000   592.000  2335.000   596.000  3010.000     0.0       0.0       0.0       0.0
NC      0.080     0.035     0.055     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        N  FOOT BRIDGE TO GOLF COURSE, TR 590.5, LC TRUSS  586.2

           HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

X1  26720.000    23.000  1458.000  1533.000   525.000   450.000   465.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1430.000     0.0    2600.000     0.0       0.0       0.0       0.0
GR    599.600     0.0     599.000   137.000   598.800   308.000   600.000   491.000   598.700   657.000
GR    598.000   958.000   596.900  1107.000   582.700  1287.000   591.900  1407.000   590.500  1458.000
GR    583.500  1458.000   582.100  1462.000   580.600  1475.000   577.600  1485.000   577.400  1511.000
GR    583.400  1533.000   588.800  1533.000   584.500  1584.000   584.000  1815.000   584.000  1985.000
GR    583.000  2290.000   592.000  2410.000   596.000  3110.000     0.0       0.0       0.0       0.0

X1  26721.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1430.000     0.0    2600.000     0.0       0.0       0.0       0.0
BT      5.000  1407.000   591.900   591.900  1458.000   590.500   590.200  1511.000   591.200   589.900
BT   1533.000   588.800   587.600  1584.000   584.500   584.500     0.0       0.0       0.0       0.0

X1  26722.000     0.0       0.0       0.0      20.000    20.000    20.000     0.0       0.0       0.0
X2      0.0       0.0       0.0       0.0       0.0       0.0       1.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1430.000     0.0    2600.000     0.0       0.0       0.0       0.0

X1  26723.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1430.000     0.0    2600.000     0.0       0.0       0.0       0.0
NC      0.080     0.035     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        O

                          LOB
X1  26820.000    18.000  1448.000  1562.000    85.000    70.000    85.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1430.000     0.0    2540.000     0.0       0.0       0.0       0.0
GR    596.000  1220.000   592.000  1270.000   588.000  1300.000   584.000  1320.000   583.600  1448.000
GR    581.900  1452.000   581.200  1455.000   577.500  1480.000   576.800  1505.000   578.300  1530.000
GR    581.200  1555.000   582.600  1558.000   584.300  1562.000   585.600  1965.000   588.000  2280.000
GR    592.000  2340.000   595.200  2600.000   596.000  3200.000     0.0       0.0       0.0       0.0
NC      0.120     0.035     0.040     0.0       0.0       0.0       0.0       0.0       0.0       0.0

        P

X1  27920.000    17.000  1646.000  1744.000  1145.000  1150.000  1385.000     0.0       0.0       0.0
X3      0.0       0.0       0.0  1235.000     0.0    2000.000     0.0       0.0       0.0       0.0
GR    599.500  1050.000   596.000  1200.000   592.000  1245.000   588.000  1275.000   584.000  1320.000
GR    583.300  1646.000   581.500  1649.000   578.100  1672.000   577.500
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GR	592.000	1985.000	596.000	2060.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.080	0.035	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	200.000	740.000

Q

X1	29520.000	16.000	600.000	666.000	1430.000	1200.000	1545.000	0.0	0.0	0.0
GR	600.000	130.000	596.000	170.000	592.000	200.000	588.000	235.000	584.000	300.000
GR	584.000	535.000	581.100	600.000	578.300	617.000	578.600	633.000	579.700	649.000
GR	581.100	666.000	584.000	695.000	588.000	710.000	592.000	745.000	596.000	765.000
GR	600.000	800.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.040	0.040	0.300	0.500	0.0	0.0	0.0	0.0	0.0

R M-46 BRIDGE, TR 601.9, LC 598.5

X1	29920.000	17.000	39.000	193.800	315.000	555.000	480.000	0.0	0.0	0.0
GR	602.000	0.0	602.000	8.000	602.800	8.000	602.800	39.000	586.900	39.000
GR	581.100	61.000	578.500	82.900	577.100	85.100	577.000	116.400	577.600	147.700
GR	579.000	149.900	581.100	165.800	586.800	193.800	602.800	193.800	602.800	224.800
GR	601.900	224.800	601.900	250.000	0.0	0.0	0.0	0.0	0.0	0.0
SB	0.900	1.580	2.500	0.0	154.800	4.400	2789.000	0.0	580.000	580.000

X1	29921.000	0.0	0.0	0.0	105.400	105.400	105.400	0.0	0.0	0.0
X2	0.0	0.0	1.000	598.500	602.000	0.0	0.0	0.0	0.0	0.0
BT	6.000	0.0	602.000	602.000	8.000	602.800	602.800	39.000	602.800	598.500
BT	193.800	602.800	598.500	224.800	602.800	602.800	250.000	601.900	601.900	0.0
NC	0.045	0.030	0.030	0.0	0.0	0.0	0.0	0.0	0.0	0.0

S

X1	30200.000	15.000	600.000	700.000	185.000	225.000	185.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	500.000	0.0	1100.000	0.0	0.0	0.0	0.0
GR	600.000	395.000	596.000	415.000	592.000	470.000	588.000	495.000	584.000	530.000
GR	581.100	600.000	578.300	626.000	578.600	650.000	579.700	674.000	581.100	700.000
GR	584.000	730.000	588.000	1040.000	592.000	1110.000	596.000	1400.000	600.000	1490.000
NC	0.060	0.030	0.030	0.100	0.300	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	235.000	1000.000

T

X1	30920.000	17.000	440.000	540.000	620.000	485.000	500.000	0.0	0.0	0.0
GR	600.000	120.000	596.000	150.000	592.000	210.000	588.000	235.000	585.200	350.000
GR	588.000	400.000	588.000	420.000	581.100	440.000	578.100	464.000	578.700	489.000
GR	580.000	514.000	580.900	540.000	584.000	620.000	588.000	780.000	592.000	1000.000
GR	596.000	1160.000	600.000	1470.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.030	0.150	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	280.000	800.000

U

X1	31720.000	18.000	343.000	471.000	1050.000	1105.000	1100.000	0.0	0.0	0.0
GR	604.100	0.0	602.800	103.000	599.600	238.000	586.500	333.000	585.200	343.000
GR	583.400	348.000	581.100	353.000	578.100	377.000	578.700	402.000	580.000	427.000
GR	580.900	451.000	581.900	461.000	582.400	471.000	584.000	610.000	588.000	720.000
GR	592.000	810.000	596.000	910.000	600.000	1155.000	0.0	0.0	0.0	0.0
NC	0.030	0.080	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	255.000	800.000

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X1   33120.000     19.000    600.000    649.000   1480.000   1040.000   1405.000      0.0      0.0      0.0
GR     604.000    145.000    600.000    170.000    596.000    205.000    592.000    255.000  588.000  290.000
GR     584.000    330.000    584.000    400.000    584.500    500.000    588.000    570.000  581.100  600.000
GR     578.100    612.000    578.700    624.000    580.000    637.000    580.900    649.000  584.000  695.000
GR     588.000    760.000    592.000    820.000    596.000    870.000    600.000    930.000      0.0      0.0
NC       0.030      0.080      0.033      0.0        0.0        0.0        0.0        0.0      0.0      0.0

         W

X1   34720.000     18.000    883.000    942.000   1265.000   1390.000   1385.000      0.0      0.0      0.0
X3       0.0        0.0        0.0      600.000      0.0     1350.000      0.0        0.0      0.0      0.0
GR     602.800    151.000    602.000    285.000    599.700    459.000    585.200    612.000  591.400  737.000
GR     589.900    883.000    586.100    889.000    581.100    895.000    577.900    918.000  577.100  930.000
GR     578.300    942.000    581.100    955.000    581.900    960.000    583.900   1117.000  583.900 1251.000
GR     595.700   1388.000    601.500   1541.000    602.500   1685.000      0.0        0.0      0.0      0.0
NC       0.030      0.070      0.035      0.0        0.0        0.0        0.0        0.0      0.0      0.0
ET       0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0    660.000 1620.000

         X

X1   35720.000     22.000   1400.000   1455.000    760.000    950.000    995.000      0.0      0.0      0.0
GR     604.000    245.000    600.000    495.000    596.000    615.000    592.000    720.000  588.000  905.000
GR     586.000   1000.000    584.000   1100.000    584.000   1170.000    588.000   1320.000  588.000 1385.000
GR     584.000   1390.000    581.900   1400.000    577.900   1413.000    577.700   1428.000  578.300 1443.000
GR     581.900   1455.000    584.000   1472.000    588.000   1620.000    592.000   1640.000  596.000 1650.000
GR     600.000   1660.000    604.000   1685.000      0.0        0.0        0.0        0.0      0.0      0.0
NC       0.030      0.030      0.035      0.0        0.0        0.0        0.0        0.0      0.0      0.0
ET       0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0    370.000 1670.000

         Y

X1   36450.000     20.000    935.000    980.000    445.000    790.000    735.000      0.0      0.0      0.0
GR     600.000    160.000    596.000    340.000    592.000    400.000    588.000    590.000  587.000  790.000
GR     584.000    820.000    582.900    850.000    584.000    885.000    588.000    900.000  588.000  920.000
GR     581.900    935.000    577.900    946.000    577.700    957.000    578.300    968.000  581.900  980.000
GR     584.300    984.000    588.000   1050.000    592.000   1075.000    596.000   1100.000  600.000 1130.000
NC       0.040      0.040      0.055      0.0        0.0        0.0        0.0        0.0      0.0      0.0
ET       0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0    340.000  940.000

         Z  FOOT BRIDGE TO GOLF COURSE, TR 591.5, LC 591.4

            HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

X1   36550.000     24.000    840.800    890.800    155.000     75.000     75.000      0.0      0.0      0.0
GR     600.000    200.000    596.000    315.000    592.000    380.000    588.000    510.000  587.000  650.000
GR     584.000    750.000    588.000    800.000    589.400    825.000    591.500    840.800  585.400  840.800
GR     581.900    843.800    579.000    853.300    577.200    865.800    578.200    878.300  581.900  885.800
GR     585.400    890.800    591.500    890.800    591.500    891.600    585.400    891.600  587.500  915.600
GR     588.000    930.000    592.000    940.000    596.000    980.000    600.000   1040.000      0.0      0.0
ET       0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0    340.000  940.000

X1   36551.000      0.0        0.0        0.0        7.700      7.700      7.700      0.0      0.0      0.0
NC       0.040      0.040      0.035      0.0        0.0        0.0        0.0        0.0      0.0      0.0
ET       0.0        0.0        0.0        0.0        0.0        9.100      0.0        0.0    475.000 1045.000

         AA

X1   36800.000     18.000    946.000   1006.000    120.000    180.000    180.000      0.0      0.0      0.0
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GR	588.000	910.000	590.100	931.000	581.900	946.000	579.100	961.000	577.700	976.000
GR	578.800	991.000	581.900	1006.000	584.100	1014.000	585.800	1014.000	588.000	1030.000
GR	592.000	1045.000	596.000	1100.000	600.000	1195.000	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.055	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	600.000	1090.000

AB FOOT BRIDGE TO GOLF COURSE, TR 591.4, LC 591.3

HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

X1	37000.000	26.000	950.800	1000.800	210.000	235.000	230.000	0.0	0.0	0.0
GR	600.000	500.000	596.000	585.000	592.000	640.000	588.000	715.000	584.000	810.000
GR	584.000	910.000	588.000	925.000	590.200	935.000	590.300	940.000	590.800	945.000
GR	591.400	950.400	585.100	950.800	581.900	958.800	578.900	963.300	578.100	975.800
GR	578.300	988.300	581.900	997.800	585.100	1000.800	591.300	1000.800	591.300	1001.600
GR	585.100	1001.600	587.000	1024.300	588.000	1070.000	592.000	1088.000	596.000	1115.000
GR	600.000	1185.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	600.000	1090.000

X1	37001.000	0.0	0.0	0.0	7.700	7.700	7.700	0.0	0.0	0.0
NC	0.050	0.050	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AC

X1	37220.000	18.000	402.000	468.000	50.000	140.000	110.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	145.000	0.0	600.000	0.0	0.0	0.0	0.0
GR	600.000	50.000	596.000	120.000	592.000	160.000	588.000	250.000	584.000	315.000
GR	584.000	360.000	588.000	385.000	584.000	400.000	580.800	402.000	580.400	415.000
GR	579.400	430.000	579.300	445.000	580.800	468.000	584.000	480.000	588.000	600.000
GR	592.000	610.000	596.000	635.000	600.000	720.000	0.0	0.0	0.0	0.0
NC	0.050	0.070	0.040	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AD GEDDES RD BRIDGE, TR 597.4, LC 596.0

X1	37320.000	16.000	203.000	325.000	225.000	205.000	195.000	0.0	0.0	0.0
GR	597.500	100.000	597.500	150.000	597.400	203.000	594.000	203.000	580.500	205.000
GR	579.900	225.000	579.100	245.000	579.900	265.000	581.900	272.000	582.700	275.000
GR	584.600	300.000	583.700	324.000	594.000	325.000	597.400	325.000	597.100	428.000
GR	596.500	620.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.030	0.030	0.060	0.100	0.300	0.0	0.0	0.0	0.0	0.0

X1	37321.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	4.000	150.000	597.500	597.500	203.000	597.400	596.000	325.000	597.400	596.000
BT	428.000	597.100	597.100	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	37322.000	0.0	0.0	0.0	19.000	19.000	19.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
NC	0.120	0.080	0.042	0.0	0.0	0.0	0.0	0.0	0.0	0.0

X1	37323.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
NC	0.150	0.035	0.048	0.300	0.500	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	200.000	1050.000

AE

X1	37820.000	17.000	735.000	785.000	580.000	420.000	450.000	0.0	0.0	0.0
GR	600.000	10.000	596.000	70.000	592.000	80.000	588.000	90.000	585.200	480.000

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GR	579.000	763.000	581.100	771.000	581.300	781.000	584.100	785.000	588.000	940.000
GR	592.000	1065.000	596.000	1165.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.080	0.035	0.050	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AF

X1	39020.000	19.000	380.000	443.000	1075.000	915.000	960.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	285.000	0.0	870.000	0.0	0.0	0.0	0.0
GR	604.000	200.000	600.000	220.000	596.000	260.000	592.000	305.000	588.000	350.000
GR	586.700	380.000	583.000	387.000	581.200	397.000	579.000	406.000	578.200	416.000
GR	578.400	426.000	581.200	435.000	583.600	437.000	586.500	443.000	584.500	750.000
GR	588.000	900.000	592.000	960.000	596.000	980.000	600.000	1280.000	0.0	0.0
NC	0.035	0.060	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	930.000	1730.000

AG

X1	44520.000	22.000	1643.000	1683.000	1645.000	1265.000	1705.000	0.0	0.0	0.0
GR	604.000	800.000	600.000	840.000	596.000	870.000	592.000	930.000	588.000	975.000
GR	588.000	1225.000	588.500	1340.000	588.000	1390.000	588.000	1610.000	588.000	1630.000
GR	588.000	1643.000	583.800	1652.000	583.000	1657.000	582.900	1662.000	583.300	1667.000
GR	583.800	1672.000	585.000	1678.000	590.000	1683.000	588.000	1730.000	596.000	1750.000
GR	600.000	1760.000	604.000	1770.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.080	0.120	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1095.000	1700.000

AH

X1	45000.000	17.000	1643.000	1683.000	690.000	1215.000	1205.000	0.0	0.0	0.0
GR	604.000	1000.000	600.000	1060.000	596.000	1080.000	592.000	1095.000	588.000	1605.000
GR	588.000	1643.000	583.800	1652.000	583.000	1657.000	582.900	1662.000	583.300	1667.000
GR	583.800	1672.000	585.000	1678.000	590.000	1683.000	592.000	1700.000	596.000	1715.000
GR	600.000	1730.000	604.000	1765.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.080	0.050	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	70.000	450.000

AI

X1	45520.000	18.000	142.000	192.000	1370.000	975.000	1130.000	0.0	0.0	0.0
GR	608.000	0.0	604.000	20.000	600.000	40.000	596.000	48.000	592.000	70.000
GR	588.000	135.000	596.100	142.000	583.000	145.000	581.500	167.000	581.400	169.000
GR	581.400	169.000	581.200	180.000	583.000	192.000	588.000	200.000	592.000	365.000
GR	596.000	470.000	600.000	545.000	604.000	615.000	0.0	0.0	0.0	0.0
NC	0.050	0.050	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	270.000	970.000

AJ

X1	46870.000	23.000	333.000	384.000	1245.000	1380.000	1415.000	0.0	0.0	0.0
GR	604.000	75.000	600.000	200.000	596.000	265.000	592.000	280.000	588.000	300.000
GR	585.900	333.000	583.000	338.000	582.300	350.500	582.000	363.000	582.900	371.000
GR	584.200	373.000	583.000	380.000	582.400	384.000	583.000	388.000	585.300	393.000
GR	588.000	395.000	588.000	440.000	586.500	600.000	588.000	930.000	592.000	970.000
GR	596.000	990.000	600.000	995.000	604.000	1020.000	0.0	0.0	0.0	0.0
NC	0.150	0.050	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	100.000	630.000

AK

GR	608.000	5.000	604.000	25.000	596.000	65.000	592.000	85.000	588.000	100.000
GR	585.900	115.000	583.000	120.000	582.300	132.500	582.000	145.000	582.900	153.000
GR	584.200	155.000	583.000	162.000	582.400	166.000	583.000	170.000	585.300	175.000
GR	588.000	185.000	589.500	400.000	592.000	590.000	596.000	655.000	600.000	715.000
GR	604.000	765.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.150	0.070	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	100.000	640.000

AL

X1	48570.000	22.000	115.000	175.000	1010.000	900.000	1010.000	0.0	0.0	0.0
GR	608.000	10.000	604.000	30.000	600.000	50.000	596.000	65.000	592.000	90.000
GR	588.000	105.000	585.900	115.000	583.000	120.000	582.300	132.500	582.000	145.000
GR	582.900	153.000	584.200	155.000	583.000	162.000	582.400	166.000	583.000	170.000
GR	585.300	175.000	588.000	185.000	589.500	450.000	592.000	640.000	596.000	678.000
GR	600.000	710.000	604.000	750.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.150	0.150	0.050	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AM

X1	48600.000	20.000	215.000	270.000	945.000	940.000	945.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	380.000	0.0	0.0	0.0	0.0
GR	608.000	35.000	604.000	65.000	600.000	95.000	596.000	150.000	592.000	175.000
GR	588.000	205.000	585.900	215.000	583.000	220.000	582.300	232.500	582.000	245.000
GR	582.900	253.000	584.200	255.000	583.000	262.000	582.400	266.000	583.000	270.000
GR	588.300	273.000	592.000	345.000	596.000	380.000	600.000	470.000	604.000	600.000
QT	5.000	3150.000	4450.000	4900.000	5400.000	4900.000	0.0	0.0	0.0	0.0
NC	0.150	0.150	0.045	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AN FROST RD BRIDGE, TR 599.2, LC 595.2

X1	48820.000	25.000	542.200	657.900	380.000	460.000	425.000	0.0	0.0	0.0
GR	607.800	0.0	606.300	34.000	604.200	109.000	601.600	185.000	599.700	378.000
GR	598.600	464.000	600.100	475.000	599.200	542.200	582.700	542.200	581.800	547.200
GR	587.000	577.200	584.800	601.300	582.500	632.100	581.000	642.100	582.500	652.100
GR	585.000	657.900	599.200	657.900	599.200	700.000	599.600	750.000	598.700	805.000
GR	600.300	883.000	601.500	934.000	603.400	988.000	603.700	1049.000	607.900	1192.000
SB	0.900	1.570	2.500	0.0	115.700	2.500	1281.000	0.0	584.000	584.000

X1	48821.000	0.0	0.0	0.0	29.400	29.400	29.400	0.0	0.0	0.0
X2	0.0	0.0	1.000	595.200	599.200	0.0	0.0	0.0	0.0	0.0
BT	19.000	0.0	607.800	607.800	34.000	606.300	606.300	109.000	604.200	604.200
BT	185.000	601.600	601.600	378.000	599.700	599.700	464.000	598.600	598.600	475.000
BT	600.100	600.100	538.000	599.200	599.200	540.000	600.100	600.100	657.900	600.100
BT	600.100	660.000	599.200	599.200	700.000	599.200	599.200	750.000	599.600	599.600
BT	805.000	598.700	598.700	883.000	600.300	600.300	934.000	601.500	601.500	988.000
BT	603.400	603.400	1049.000	603.700	603.700	1192.000	607.900	607.900	0.0	0.0
NC	0.050	0.050	0.033	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AO

X1	48920.000	19.000	466.000	511.000	90.000	80.000	100.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	350.000	0.0	740.000	0.0	0.0	0.0	0.0
GR	607.900	0.0	601.000	45.000	590.800	160.000	589.200	303.000	591.500	394.000
GR	584.700	424.000	587.400	461.000	586.200	466.000	583.000	499.000	582.600	502.000
GR	582.500	505.000	582.400	508.000	583.100	511.000	585.400	532.000	591.300	554.000
GR	591.300	598.000	591.300	759.000	589.000	824.000	608.000	928.000	0.0	0.0
NC	0.070	0.050	0.040	0.0	0.0	0.0	0.0	0.0	0.0	0.0

MOORE BUSINESS FORMS, INC. 27

X1	49220.000	28.000	510.000	546.000	255.000	265.000	250.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	300.000	0.0	1020.000	0.0	0.0	0.0	0.0
GR	608.000	0.0	604.000	25.000	600.000	55.000	596.000	90.000	596.000	180.000
GR	600.000	210.000	604.000	290.000	604.000	355.000	600.000	380.000	596.000	405.000
GR	592.500	480.000	592.000	510.000	588.000	512.000	591.600	520.000	587.600	525.000
GR	582.900	530.000	581.900	534.000	581.600	538.000	582.100	542.000	583.200	546.000
GR	585.600	551.000	587.100	556.000	588.000	630.000	591.000	805.000	592.000	1000.000
GR	596.000	1010.000	604.000	1065.000	608.000	1170.000	0.0	0.0	0.0	0.0
NC	0.120	0.080	0.043	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AQ

X1	49870.000	16.000	970.000	1018.000	600.000	650.000	695.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	400.000	0.0	1130.000	0.0	0.0	0.0	0.0
GR	608.000	20.000	592.000	85.000	592.000	480.000	589.500	600.000	588.000	960.000
GR	585.500	970.000	584.200	1007.000	583.600	1010.000	584.200	1013.000	587.000	1018.000
GR	588.000	1028.000	592.000	1035.000	596.000	1110.000	600.000	1180.000	604.000	1340.000
GR	608.000	1565.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.040	0.040	0.035	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AR

X1	51270.000	15.000	300.000	360.000	1850.000	890.000	1965.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	150.000	0.0	500.000	0.0	0.0	0.0	0.0
GR	608.000	0.0	596.000	65.000	592.000	95.000	593.300	275.000	589.500	292.000
GR	585.500	300.000	584.200	337.000	583.600	340.000	584.200	343.000	587.000	352.000
GR	592.500	360.000	592.000	400.000	596.000	680.000	600.000	800.000	604.000	970.000
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

AS LONE RD BRIDGE, TR 598.5, LC 597.5

X1	51370.000	13.000	500.000	597.500	90.000	90.000	90.000	0.0	0.0	0.0
GR	600.000	280.000	597.800	425.000	598.500	500.000	592.400	500.000	589.600	517.000
GR	591.100	533.500	586.600	550.000	584.300	566.500	584.500	580.500	585.900	597.500
GR	598.500	597.500	598.300	675.000	600.000	925.000	0.0	0.0	0.0	0.0
X1	51371.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	4.000	425.000	597.800	597.800	500.000	598.500	597.500	597.500	598.500	597.500
BT	675.000	598.300	598.300	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	51372.000	0.0	0.0	0.0	18.000	18.000	18.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	51373.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0

AT

X1	51470.000	17.000	470.000	519.000	85.000	105.000	90.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	300.000	0.0	650.000	0.0	0.0	0.0	0.0
GR	604.000	70.000	600.000	100.000	596.000	150.000	592.000	350.000	592.000	445.000
GR	594.200	457.000	589.900	470.000	584.500	483.000	583.500	489.000	583.900	495.000
GR	584.300	501.000	584.500	507.000	585.000	519.000	589.400	526.000	588.000	535.000
GR	592.000	800.000	603.800	994.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.050	0.050	0.040	0.200	0.400	0.0	0.0	0.0	0.0	0.0

AU

MOORE BUSINESS FORMS INC 27

X1	52470.000	21.000	387.000	440.000	570.000	1070.000	925.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	250.000	0.0	880.000	0.0	0.0	0.0	0.0
GR	604.000	120.000	600.000	175.000	596.000	275.000	598.800	376.000	593.100	387.000
GR	587.900	404.000	584.800	412.000	584.300	416.000	584.300	420.000	584.500	424.000
GR	584.800	428.000	585.300	435.000	589.300	440.000	590.300	445.000	591.300	449.000
GR	592.700	454.000	592.000	470.000	592.200	700.000	596.000	880.000	600.000	910.000
GR	604.000	935.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.150	0.150	0.045	0.100	0.300	0.0	0.0	0.0	0.0	0.0

AV

X1	53120.000	18.000	705.000	740.000	580.000	520.000	650.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	500.000	0.0	810.000	0.0	0.0	0.0	0.0
GR	608.000	210.000	588.000	250.000	588.000	280.000	592.000	295.000	596.000	315.000
GR	600.000	405.000	600.000	585.000	596.000	625.000	592.000	680.000	588.000	695.000
GR	584.800	705.000	584.300	720.000	584.800	740.000	588.000	760.000	592.000	762.000
GR	596.000	790.000	600.000	810.000	604.000	880.000	0.0	0.0	0.0	0.0
QT	5.000	2600.000	3750.000	4050.000	4500.000	4050.000	0.0	0.0	0.0	0.0

AW U/S OF CONFLUENCE WITH HATCH RUN

X1	53270.000	21.000	329.000	370.000	500.000	460.000	440.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	250.000	0.0	810.000	0.0	0.0	0.0	0.0
GR	604.000	80.000	600.000	95.000	596.000	120.000	592.000	295.000	591.800	309.000
GR	591.500	319.000	591.800	329.000	585.300	334.000	584.900	339.000	584.800	344.000
GR	584.600	349.000	584.700	354.000	585.000	359.000	585.300	364.000	590.100	370.000
GR	591.200	379.000	594.900	384.000	592.000	425.000	592.000	795.000	596.000	810.000
GR	608.000	860.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.070	0.100	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	60.000	420.000

AX

X1	54770.000	20.000	370.000	413.000	1255.000	1250.000	1270.000	0.0	0.0	0.0
GR	608.000	10.000	596.000	60.000	592.000	245.000	599.300	350.000	595.000	360.000
GR	592.200	370.000	585.200	378.000	584.400	383.000	584.300	388.000	584.400	393.000
GR	584.500	398.000	584.200	403.000	585.200	408.000	587.900	413.000	590.900	418.000
GR	593.700	423.000	599.200	428.000	597.500	440.000	605.600	452.000	609.700	464.000
NC	0.040	0.100	0.045	0.0	0.0	0.0	0.0	0.0	0.0	0.0

AY

X1	55590.000	10.000	395.000	420.000	920.000	935.000	925.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	170.000	0.0	510.000	0.0	0.0	0.0	0.0
GR	604.000	125.000	600.000	150.000	596.000	190.000	592.000	375.000	588.000	385.000
GR	584.500	395.000	584.300	412.000	584.500	420.000	600.000	460.000	608.000	540.000
NC	0.150	0.150	0.050	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	195.000	390.000

AZ

X1	56170.000	12.000	240.000	275.000	710.000	870.000	840.000	0.0	0.0	0.0
X3	0.0	0.0	0.0	195.000	0.0	390.000	0.0	0.0	0.0	0.0
GR	604.000	150.000	596.000	198.000	592.000	215.000	586.900	240.000	585.900	246.000
GR	585.800	251.000	586.100	260.000	586.900	275.000	592.000	280.000	596.000	295.000
GR	598.500	350.000	596.000	470.000	0.0	0.0	0.0	0.0	0.0	0.0
NC	0.0	0.0	0.0	0.300	0.500	0.0	0.0	0.0	0.0	0.0

BA DICE RD BRIDGE, TR 603.1, LC 602.9

MOORE BUSINESS FORMS INC 27

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X1   56270.000    15.000    70.000   170.000   320.000   275.000   280.000     0.0       0.0       0.0
GR     607.200    15.000   605.600    40.000   604.200    65.000   604.100    70.000   593.000    71.000
GR     587.300   130.000   587.000   140.000   585.900   145.000   587.300   155.000   590.200   170.000
GR     603.100   170.000   602.800   190.000   602.200   215.000   602.100   240.000   602.100   265.000

X1   56271.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
BT       4.000    65.000   604.200   604.200    70.000   604.100   602.900   170.000   603.100   601.900
BT     190.000   602.800   602.800     0.0       0.0       0.0       0.0       0.0       0.0       0.0

X1   56272.000     0.0       0.0       0.0      18.000    18.000    18.000     0.0       0.0       0.0
X2       0.0       0.0       0.0       0.0       0.0       0.0       1.000     0.0       0.0       0.0

X1   56273.000     0.0       0.0       0.0       1.000     1.000     1.000     0.0       0.0       0.0
EJ       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0       0.0


*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 14520.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       ARCB      VOL       THA       LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST


          A  MANUFACTURED FROM USGS TOPOMAP

 14520.00     15.90    590.40      0.0     590.40    590.44      0.04      0.0       0.0     581.50
    5500.      1232.     3969.     299.     2880.     2236.     725.       0.        0.      580.20
      0.0      0.43      1.78     0.41     0.120     0.045     0.120     0.0     574.50     438.00
 0.000093        0.        0.       0.         0         0         0    -0.02     788.39    1226.39

FLOW DISTRIBUTION FOR SECNO    14520.00          CWSEL      590.40

STA       438.      530.      900.     1070.     1140.     1200.     1226.
  PER Q     1.0      21.4      72.2      4.7       0.8       0.0
  AREA    234.4    2645.5    2235.9    546.0     174.0      5.3
  VEL       0.2       0.4       1.8      0.5       0.2       0.0

*SECNO 17540.000

          B  MANUFACTURED FROM USGS TOPOMAP

 17540.00     15.84    590.74      0.0       0.0    590.80      0.06      0.36      0.01     581.90
    5500.      1389.     3899.     212.     2589.     1705.     437.      358.       54.      580.60
     0.47      0.54      2.29     0.48     0.120     0.045     0.120     0.046    574.90    1592.43
 0.000156     3050.     3050.     2145.         2         0         0    -0.01     839.44    2431.86

FLOW DISTRIBUTION FOR SECNO    17540.00          CWSEL      590.74

STA      1592.     1800.     1900.     2200.     2330.     2360.     2420.     2432.
  PER Q     0.1       2.0      23.1      70.9       2.6       1.2       0.0
  AREA     77.0     324.1    2187.4    1705.0     238.2     194.5       4.4
  VEL       0.1       0.3       0.6       2.3       0.6       0.3       0.3
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*SECNO 19335.000

        C  MANUFACTURED FROM USGS TOPOMAP

 19335.00    15.70   591.10     0.0      0.0    591.34     0.24     0.49     0.05   582.40
    5500.     491.    4124.     886.     466.     914.    1052.     490.      80.    581.10
     0.61     1.05     4.51     0.84    0.120    0.045    0.120    0.047   575.40   555.99
 0.000624    1720.    1875.     910.        2        0        0    -0.06   779.66  1335.64

FLOW DISTRIBUTION FOR SECNO   19335.00          CWSEL      591.10

STA       556.     600.     620.     670.     740.     800.     890.    1336.
  PER Q      0.1      0.9      7.9     75.0     10.9      4.3      0.9
   AREA     24.2     72.0    370.0    913.7    483.0    324.0    245.2
    VEL      0.2      0.7      1.2      4.5      1.2      0.7      0.2

*SECNO 21420.000

        D  MANUFACTURED FROM USGS TOPOMAP

 21420.00    16.20   591.90     0.0      0.0    591.98     0.08     0.62     0.02   582.70
    5500.     681.    4349.     471.    1355.    1752.     859.     635.     112.    581.40
     0.88     0.50     2.48     0.55    0.120    0.045    0.120    0.046   575.70   549.60
 0.000178    1650.    2095.    2120.        2        0        0    -0.01   626.40  1176.00

FLOW DISTRIBUTION FOR SECNO   21420.00          CWSEL      591.90

STA       550.     580.     790.     840.     970.    1020.    1100.    1176.
  PER Q      0.1      7.4      4.8     79.1      5.5      2.8      0.2
   AREA     28.9    924.0    402.5   1751.7    435.0    352.0     72.2
    VEL      0.2      0.4      0.7      2.5      0.7      0.4      0.2

CCHV    0.300 CEHV    0.500
*SECNO 22680.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA     LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST


3470 ENCROACHMENT STATIONS     250.0     550.0  TYPE      1  TARGET      300.000

        E  MANUFACTURED FROM USGS TOPOMAP

 22680.00    16.30   592.10     0.0      0.0    592.15     0.05     0.17     0.01   582.80
    5500.      79.    5172.     249.     212.    2722.     486.     742.     125.    581.50
     1.08     0.37     1.90     0.51    0.120    0.045    0.120    0.046   575.80   250.00
 0.000102    1235.    1280.    1235.        2        0        0    -0.03   300.00   550.00

FLOW DISTRIBUTION FOR SECNO   22680.00          CWSEL      592.10

STA       250.     270.     290.     300.     500.     550.
  PER Q      0.1      0.6      0.7     94.0      4.5
   AREA     38.3     92.0     82.0   2722.1    486.2
    VEL      0.2      0.3      0.5      1.9      0.5

CCHV    0.300 CEHV    0.500
*SECNO 22870.000

        F  SHOEMAKER RD BRIDGE, TR 595.8, LC 593.5
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MOORE BUSINESS FORMS INC 27

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22870.00     14.58    592.08      0.0       0.0    592.24      0.16      0.03      0.05    596.80
   5500.        0.     5500.       0.        0.     1729.        0.      757.      127.    596.80
    1.10       0.0      3.18      0.0     0.030     0.030     0.030     0.046    577.50    102.00
0.000186      290.      245.     220.         2         0         0     -0.01    161.00    263.00

FLOW DISTRIBUTION FOR SECNO   22870.00          CWSEL     592.08

STA       102.      263.
  PER Q     100.0
   AREA    1729.1
    VEL       3.2


SPECIAL BRIDGE

SB   XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.61      2.50      0.0       115.00    4.00      1790.00   1.57      580.00    580.00

*SECNO 22871.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     592.07 BRIDGE VELOCITY =      3.51      CALCULATED CHANNEL AREA =      1568.

 EGPRS      EGLWC       H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                              AREA
   0.0     592.25      0.01        0.      5500.      1790.     1800.     593.60    595.10


22871.00     14.59    592.09      0.0       0.0    592.25      0.16      0.01      0.0     596.80
   5500.        0.     5500.       0.        0.     1731.        0.      758.      127.    596.80
    1.10       0.0      3.18      0.0     0.030     0.030     0.030     0.046    577.50    102.00
0.000185       31.       31.      31.         0         0         0     -0.01    161.00    263.00

FLOW DISTRIBUTION FOR SECNO   22871.00          CWSEL     592.09

STA       102.      263.
  PER Q     100.0
   AREA    1730.6
    VEL       3.2

*SECNO 23000.000

        G C E O R R TRUSTLE, TR 599.6, LC 596.7

23000.00     14.87    592.07      0.0       0.0    592.33      0.25      0.03      0.05    599.50
   5500.        0.     5500.       0.        0.     1359.        0.      762.      127.    594.00
    1.11       0.0      4.05      0.0     0.030     0.045     0.030     0.046    577.20    104.46
0.000709      125.      100.      85.         2         0         0     -0.01    131.89    236.36

FLOW DISTRIBUTION FOR SECNO   23000.00          CWSEL     592.07

STA       104.      245.
  PER Q     100.0
   AREA    1358.9
    VEL       4.0

SPECIAL BRIDGE

SB   XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.57      2.50      0.0       95.00     17.00     1730.00   1.45      580.00    580.00
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CLASS A LOW FLOW

3420 BRIDGE W.S.     591.96 BRIDGE VELOCITY ,      4.82      CALCULATED CHANNEL AREA ,      1141.

 EGPRS      EGLWC       H3       QWEIR       QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                  AREA
    0.0     592.38      0.06        0.     5500.     1730.     1732.      596.90     599.50

 23001.00    14.93    592.13      0.0       0.0     592.38      0.25      0.05       0.0    599.50
    5500.       0.     5500.       0.        0.      1366.        0.      762.      127.    594.00
     1.11      0.0      4.03      0.0     0.030     0.045     0.030     0.046    577.20    104.36
 0.000699      15.       15.       15.         0         0         0     -0.01    132.25    236.61

FLOW DISTRIBUTION FOR SECNO   23001.00          CWSEL     592.13

STA       104.      245.
  PER Q     100.0
   AREA    1366.3
    VEL       4.0

CCHV    0.300 CEHV    0.500
*SECNO 23285.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

3470 ENCROACHMENT STATIONS      230.0      830.0  TYPE      1  TARGET      600.000

        H

 23285.00    16.05    592.45      0.0       0.0     592.51      0.07      0.08      0.06    583.40
    5500.      742.     4561.      197.     1846.     2015.      509.      780.      130.    582.10
     1.15      0.40      2.26      0.39     0.150     0.045     0.150     0.046    576.40    230.00
 0.000148      260.      280.      295.         2         0         0     -0.02    597.82    827.82

FLOW DISTRIBUTION FOR SECNO   23285.00          CWSEL     592.45

STA       230.      320.      540.      560.      710.      720.      765.      815.      828.
  PER Q      1.1      10.8       1.6      82.9       0.9       2.2       0.5       0.0
   AREA    252.9    1418.1     174.9    2014.7      94.0     290.1     122.3       2.9
    VEL      0.2       0.4       0.5       2.3       0.5       0.4       0.2       0.0

CCHV    0.100 CEHV    0.300
*SECNO 25000.000

3470 ENCROACHMENT STATIONS     1190.0     2600.0  TYPE      1  TARGET     1410.000

        I

 25000.00    16.27    592.67      0.0       0.0     592.70      0.03      0.18      0.00    583.40
    5500.      891.     2386.     2223.     1209.     1302.     3505.      972.      157.    582.10
     1.54      0.74      1.83      0.63     0.070     0.042     0.090     0.045    576.40   1228.01
 0.000084     1595.     1750.     1505.         2         0         0     -0.01    906.73   2134.74

FLOW DISTRIBUTION FOR SECNO   25000.00          CWSEL     592.67
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*SECNO 25800.000

3470 ENCROACHMENT STATIONS      1030.0     1930.0  TYPE       1  TARGET       900.000

        J

 25800.00    14.94   592.74     0.0      0.0    592.77     0.02     0.07     0.00   584.10
    5500.     174.    2652.    2674.     344.    1700.    3860.    1126.     180.    583.90
     1.83     0.51     1.56     0.69    0.060    0.035    0.050    0.044   577.80  1048.14
 0.000044    1080.    1160.    1125.        2        0        0    -0.01   881.86  1930.00

FLOW DISTRIBUTION FOR SECNO   25800.00          CWSEL      592.74

STA      1048.    1085.    1122.    1250.    1275.    1305.    1370.    1710.    1890.    1930.
  PER Q      0.6      2.6     48.2      3.3      4.0      8.6     29.2      3.5      0.1
   AREA     96.7    247.7   1700.1    219.9    262.3    568.4   2293.1    494.0     22.2
    VEL      0.3      0.6      1.6      0.8      0.8      0.8      0.7      0.4      0.1

*SECNO 25900.000

3470 ENCROACHMENT STATIONS      1030.0     2000.0  TYPE       1  TARGET       970.000

        K  FOOT BRIDGE, TR 584.9, LC 583.9

           HIGH SUBMERGED, NBR

 25900.00    15.15   592.75     0.0      0.0    592.77     0.02     0.00     0.00   581.90
    5500.     383.    1154.    3963.     646.     863.    4054.    1136.     181.    581.90
     1.85     0.59     1.34     0.98    0.050    0.035    0.030    0.044   577.60  1055.22
 0.000031      90.      90.      65.        0        0        0    -0.01   944.78  2000.00

FLOW DISTRIBUTION FOR SECNO   25900.00          CWSEL      592.75

STA      1055.    1069.    1119.    1145.    1170.    1234.    1255.    1335.    1365.    1680.    1915.    2000.
  PER Q      0.0      1.6      2.1      3.2     21.0      4.7     16.3      6.1     38.3      6.4      0.3
   AREA     12.7    210.0    188.5    235.0    863.4    205.8    736.0    276.0   2126.2    646.2     63.7
    VEL      0.2      0.4      0.6      0.7      1.3      1.3      1.2      1.2      1.0      0.5      0.2

*SECNO 25901.000

3370 NORMAL BRIDGE,NRD   6 MIN ELTRD   583.10 MAX ELEC   586.20

3470 ENCROACHMENT STATIONS      1030.0     2000.0  TYPE       1  TARGET       970.000
 25901.00    15.15   592.75     0.0      0.0    592.77     0.02     0.00     0.00   581.90
    5500.     337.     594.    4569.     624.     800.    4020.    1136.     181.    581.90
     1.85     0.54     0.74     1.14    0.050    0.035    0.030    0.044   577.60  1055.20
 0.000046       1.       1.       1.        0        0        0  -122.46   944.80  2000.00

FLOW DISTRIBUTION FOR SECNO   25901.00          CWSEL      592.75

STA      1055.    1069.    1119.    1145.    1170.    1234.    1255.    1335.    1365.    1680.    1915.    2000.
  PER Q      0.0      2.0      2.5      1.6     10.8      2.4     18.8      7.4     46.4      7.8      0.3
   AREA     12.8    210.1    183.4    217.6    799.6    190.1    716.2    276.1   2127.1    646.9     64.0
    VEL      0.2      0.5      0.7      0.4      0.7      0.7      1.4      1.5      1.2      0.7      0.3

*SECNO 25902.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
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SLOPE     XLOBL     XLCH     XLOBR     ITRIAL     IDC     ICONT     CORAR     TOPWID     ENDST


3370 NORMAL BRIDGE.NRD    6 MIN ELTRD    583.10 MAX ELLC    586.20


3470 ENCROACHMENT STATIONS      1030.0     2000.0  TYPE       1  TARGET       970.000
 25902.00     15.15    592.75      0.0       0.0    592.77      0.02      0.00      0.00    581.90
    5500.      337.      594.     4569.      624.      800.     4020.     1138.      182.    581.90
     1.85      0.54      0.74      1.14     0.050     0.035     0.030     0.044    577.60   1055.20
 0.000046       13.       13.       13.         0         0         0    122.46    944.80   2000.00


FLOW DISTRIBUTION FOR SECNO    25902.00          CWSEL      592.75

STA      1055.     1069.     1119.     1145.     1170.     1234.     1255.     1335.     1365.     1680.     1915.     2000.
  PER Q     0.0       2.0       2.5       1.6      10.8       2.4      18.8       7.4      46.4       7.7       0.3
   AREA    12.8     210.1     183.4     217.6     799.6     190.1     716.2     276.1    2126.9     646.8      63.9
    VEL     0.2       0.5       0.7       0.4       0.7       0.7       1.4       1.5       1.2       0.7       0.3

*SECNO 25903.000

3470 ENCROACHMENT STATIONS      1030.0     2000.0  TYPE       1  TARGET       970.000
 25903.00     15.15    592.75      0.0       0.0    592.77      0.02      0.00      0.00    581.90
    5500.      383.     1154.     3963.      647.      864.     4056.     1138.      182.    581.90
     1.85      0.59      1.34      0.98     0.050     0.035     0.030     0.044    577.60   1055.20
 0.000031        1.        1.        1.         0         0         0     -0.01    944.80   2000.00


FLOW DISTRIBUTION FOR SECNO    25903.00          CWSEL      592.75

STA      1055.     1069.     1119.     1145.     1170.     1234.     1255.     1335.     1365.     1680.     1915.     2000.
  PER Q     0.0       1.6       2.1       3.2      21.0       4.7      16.3       6.1      38.3       6.4       0.3
   AREA    12.8     210.1     188.6     235.1     863.6     205.9     736.2     276.1    2127.0     646.8      64.0
    VEL     0.2       0.4       0.6       0.7       1.3       1.3       1.2       1.2       1.0       0.5       0.2

*SECNO 26000.000

L

26000.00     14.76    592.76      0.0       0.0    592.77      0.01      0.00      0.00    585.70
    5500.      207.     1281.     4012.      454.     1145.     4647.     1150.      184.    583.80
     1.88      0.46      1.12      0.86     0.050     0.035     0.030     0.044    578.00   1127.16
 0.000023       80.       80.       95.         0         0         0     -0.05    977.02   2104.19


FLOW DISTRIBUTION FOR SECNO    26000.00          CWSEL      592.76

STA      1127.     1140.     1212.     1300.     1540.     1790.     2090.     2104.
  PER Q     0.1       3.6      23.3      39.6      26.3       7.1       0.0
   AREA    28.6     425.3    1145.4    2125.6    1689.1     827.0       5.4
    VEL     0.3       0.5       1.1       1.0       0.9       0.5       0.1

*SECNO 26320.000

3470 ENCROACHMENT STATIONS      1415.0     2520.0  TYPE       1  TARGET      1105.000

M

26320.00     14.77    592.77      0.0       0.0    592.78      0.01      0.00      0.00    585.70
    5500.       51.     1134.     4315.      203.     1214.     5609.     1176.      187.    583.80
     1.94      0.25      0.93      0.77     0.080     0.040     0.035     0.045    578.00   1415.00
 0.000022       310.      290.      130.         0         0         0     -0.04   1049.38   2464.38
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FLOW DISTRIBUTION FOR SECNO    26320.00          CWSEL      592.77

STA      1415.     1435.     1460.     1555.     1650.     1885.     2205.     2335.     2464.
  PER Q      0.2       0.8      20.6      14.0      34.0      27.9       2.5       0.1
   AREA     55.3     147.9    1213.6     880.3    2154.2    2165.3     359.7      49.6
    VEL      0.2       0.3       0.9       0.9       0.9       0.7       0.4       0.1

*SECNO 26720.000

3470 ENCROACHMENT STATIONS      1430.0     2600.0  TYPE       1  TARGET      1170.000

        N  FOOT BRIDGE TO GOLF COURSE, TR 596.5, LC TRUSS  586.2


            HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 26720.00    15.38   592.78      0.0       0.0    592.79      0.01      0.01      0.00    590.50
    5500.       7.      647.    4846.       53.      995.    6228.     1250.      199.    588.80
     2.11     0.13     0.65     0.78     0.080     0.055     0.035     0.045    577.40   1430.00
 0.000023     525.     465.     450.         0         0         0     -0.01   1116.12   2546.12

FLOW DISTRIBUTION FOR SECNO    26720.00          CWSEL      592.78

STA      1430.     1458.     1533.     1584.     1815.     1985.     2290.     2410.     2546.
  PER Q      0.1      11.8       3.9      30.6      23.6      27.5       2.4       0.1
   AREA     53.0     994.8     312.5    1969.9    1492.2    2067.2     333.3      52.9
    VEL      0.1       0.7       0.7       0.9       0.9       0.7       0.4       0.1

*SECNO 26721.000
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3370 NORMAL BRIDGE,NRD    5 MIN ELTRD    584.50 MAX ELLC    591.90

3470 ENCROACHMENT STATIONS      1430.0     2600.0  TYPE       1  TARGET      1170.000
 26721.00    15.38   592.78      0.0       0.0    592.79      0.01      0.00      0.00    590.50
    5500.       7.      318.    5175.       53.      925.    6228.     1250.      199.    588.80
     2.11     0.14     0.34     0.83     0.080     0.055     0.035     0.045    577.40   1430.00
 0.000026       1.       1.       1.         0         0         0    -69.93   1116.17   2546.17

FLOW DISTRIBUTION FOR SECNO    26721.00          CWSEL      592.78

STA      1430.     1458.     1533.     1584.     1815.     1985.     2290.     2410.     2546.
  PER Q      0.1       5.8       4.1      32.6      25.2      29.4       2.6       0.1
   AREA     53.0     924.9     312.5    1970.0    1492.3    2067.3     333.4      53.0
    VEL      0.1       0.3       0.7       0.9       0.9       0.8       0.4       0.1

*SECNO 26722.000

3370 NORMAL BRIDGE,NRD    5 MIN ELTRD    584.50 MAX ELLC    591.90

3470 ENCROACHMENT STATIONS      1430.0     2600.0  TYPE       1  TARGET      1170.000
 26722.00    15.38   592.78      0.0       0.0    592.79      0.01      0.00      0.00    590.50
    5500.       7.      318.    5175.       53.      925.    6228.     1254.      199.    588.80
     2.11     0.14     0.34     0.83     0.080     0.055     0.035     0.045    577.40   1430.00
 0.000026      20.      20.      20.         0         0         0    -69.91   1116.12   2546.12
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FLOW DISTRIBUTION FOR SECNO    26722.00          CWSEL      592.78

STA      1430.     1458.     1533.     1584.     1815.     1985.     2290.     2410.     2546.
  PER Q      0.1       5.8       4.1      32.6      25.2      29.4       2.6       0.1
   AREA     53.0     924.9     312.5    1969.9    1492.2    2067.2     333.3      52.9
    VEL      0.1       0.3       0.7       0.9       0.9       0.8       0.4       0.1

*SECNO 26723.000

3470 ENCROACHMENT STATIONS      1430.0     2600.0  TYPE      1  TARGET      1170.000
 26723.00    15.38    592.78       0.0       0.0    592.79      0.01      0.00      0.00    590.50
    5500.       7.      647.     4846.       53.      995.     6228.     1254.      199.    588.80
     2.11     0.13      0.65      0.78     0.080     0.055     0.035     0.045    577.40   1430.00
 0.000023       1.        1.        1.         0         0         0     -0.01   1116.12   2546.12

FLOW DISTRIBUTION FOR SECNO    26723.00          CWSEL      592.78

STA      1430.     1458.     1533.     1584.     1815.     1985.     2290.     2410.     2546.
  PER Q      0.1      11.8       3.9      30.6      23.6      27.5       2.4       0.1
   AREA     53.0     994.8     312.5    1969.9    1492.2    2067.2     333.3      52.9
    VEL      0.1       0.7       0.7       0.9       0.9       0.7       0.4       0.1

*SECNO 26820.000

3470 ENCROACHMENT STATIONS      1430.0     2540.0  TYPE      1  TARGET      1110.000

       0

 26820.00    15.98    592.78       0.0       0.0    592.79      0.01      0.00      0.00    583.60
    5500.      49.     1598.     3853.      165.     1577.     5231.     1266.      201.    584.30
     2.14     0.30      1.01      0.74     0.080     0.040     0.035     0.045    576.80   1430.00
 0.000023      85.       85.       70.         0         0         0      0.06    973.44   2403.44

FLOW DISTRIBUTION FOR SECNO    26820.00          CWSEL      592.78

STA      1430.     1448.     1562.     1965.     2280.     2340.     2403.
  PER Q      0.9      29.1      45.9      22.9       1.2       0.0
   AREA    164.7    1576.9    3155.8    1883.9     166.8      24.8
    VEL      0.3       1.0       0.8       0.7       0.4       0.1

*SECNO 27920.000

3470 ENCROACHMENT STATIONS      1235.0     2000.0  TYPE      1  TARGET       765.000

       P

 27920.00    15.31    592.81       0.0       0.0    592.84      0.02      0.04      0.00    583.30
    5500.     1331.     2071.     2098.     3380.     1323.     1669.     1449.      224.    583.20
     2.43     0.39      1.57      1.26     0.120     0.040     0.035     0.045    577.50   1235.91
 0.000056     1145.     1385.     1150.         0         0         0      0.06    764.08   2000.00

FLOW DISTRIBUTION FOR SECNO    27920.00          CWSEL      592.81

STA      1236.     1275.     1320.     1646.     1744.     1870.     1915.     1985.     2000.
  PER Q      0.3       1.9      22.1      37.7      29.5       6.4       2.3       0.0
   AREA     87.9     306.3    2985.3    1322.6    1160.1     306.3     196.5       6.1
    VEL      0.2       0.3       0.4       1.6       1.4       1.1       0.6       0.2

*SECNO 29520.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS   BANK ELEV
       Q      QLOB       QCH      QROB      ALOB       ACH      AROB       VOL       TWA   LEFT/RIGHT
    TIME      VLOB       VCH      VROB       XNL      XNCH       XNR       WTN     ELMIN       SSTA
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LOB 1646 ROB 1744

MOORE BUSINESS FORMS INC 27

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        Q

 29520.00    14.61   592.91     0.0      0.0    592.95     0.04     0.11     0.00   581.10
    5500.    2696.    1927.     877.    3321.     889.     508.    1629.     245.    581.10
     2.70     0.81     2.17     1.73    0.080    0.040    0.035    0.045   578.30   193.19
 0.000107    1430.    1545.    1200.        2        0        0     0.01   556.35   749.54

FLOW DISTRIBUTION FOR SECNO   29520.00          CWSEL     592.91

STA       193.     235.     300.     535.     600.     666.     695.     710.     745.     750.
  PER Q     0.7      5.7     31.4     11.2     35.0     11.4      2.9      1.6      0.0
   AREA   104.9    449.0   2093.4    673.3    888.6    300.4    103.6    101.8      2.1
    VEL     0.4      0.7      0.8      0.9      2.2      2.1      1.6      0.9      0.3

CCHV    0.300 CEHV    0.500
*SECNO 29920.000

        R  M-46 BRIDGE, TR 601.9, LC 598.5

 29920.00    15.93   592.93     0.0      0.0    593.05     0.12     0.06     0.04   602.80
    5500.       0.    5500.       0.       0.    1993.       0.    1660.     249.    602.80
     2.75     0.0     2.76     0.0    0.050    0.040    0.040    0.045   577.00    39.00
 0.000206     315.     480.     555.        1        0        0    -0.00   154.80   193.80

FLOW DISTRIBUTION FOR SECNO   29920.00          CWSEL     592.93

STA        39.     194.
  PER Q    100.0
   AREA   1993.3
    VEL      2.8

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.90      1.58      2.50      0.0     154.80     4.40    2789.00     0.0      580.00    580.00

*SECNO 29921.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     592.93 BRIDGE VELOCITY ,      2.83     CALCULATED CHANNEL AREA ,    1945.

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA   TRAPEZOID      ELLC      ELTRD
                                                                AREA
     0.0    593.05     0.00        0.     5500.     2789.     2782.      598.50    602.00

 29921.00    15.93   592.93     0.0      0.0    593.05     0.12     0.00     0.0    602.80
    5500.       0.    5500.       0.       0.    1993.       0.    1665.     249.    602.80
     2.76     0.0     2.76     0.0    0.050    0.040    0.040    0.045   577.00    39.00
 0.000206     105.     105.     105.        0        0        0    -0.00   154.80   193.80

FLOW DISTRIBUTION FOR SECNO   29921.00          CWSEL     592.93

STA        39.     194.
  PER Q    100.0
   AREA   1992.7
    VEL      2.8
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MOORE BUSINESS FORMS INC 27

3470 ENCROACHMENT STATIONS 500.0 1100.0 TYPE 1 TARGET 600.000

S

30200.00	14.77	593.07	0.0	0.0	593.09	0.02	0.01	0.03	581.10
5500.	760.	2067.	2673.	957.	1362.	2709.	1681.	251.	581.10
2.81	0.79	1.52	0.99	0.045	0.030	0.030	0.045	578.30	500.00
0.000029	185.	185.	225.	2	0	0	-0.02	600.00	1100.00

FLOW DISTRIBUTION FOR SECNO 30200.00 CWSEL 593.07

STA	500.	530.	600.	700.	730.	1040.	1100.
PER Q	2.4	11.4	37.6	7.3	39.1	2.1	
AREA	220.7	736.5	1362.1	315.6	2192.2	201.4	
VEL	0.6	0.9	1.5	1.3	1.0	0.6	

CCHV 0.100 CEHV 0.300
*SECNO 30920.000

T

30920.00	14.99	593.09	0.0	0.0	593.11	0.02	0.02	0.00	581.10
5500.	672.	2140.	2688.	1429.	1363.	2687.	1743.	259.	580.90
2.93	0.47	1.57	1.00	0.060	0.030	0.030	0.044	578.10	193.71
0.000031	620.	500.	485.	2	0	0	-0.03	849.71	1043.43

FLOW DISTRIBUTION FOR SECNO 30920.00 CWSEL 593.09

STA	194.	210.	235.	350.	400.	420.	440.	540.	620.	780.	1000.	1043.
PER Q	0.0	0.4	6.5	2.8	0.8	1.7	38.9	20.6	21.0	7.2	0.1	
AREA	8.8	77.1	745.9	324.3	101.7	170.7	1362.7	850.9	1133.7	678.9	23.6	
VEL	0.1	0.3	0.5	0.5	0.4	0.6	1.6	1.3	1.0	0.6	0.2	

*SECNO 31720.000

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

U

31720.00	15.01	593.11	0.0	0.0	593.18	0.07	0.06	0.02	585.20
5500.	327.	4135.	1039.	231.	1665.	2456.	1867.	277.	582.40
3.08	1.41	2.48	0.42	0.030	0.035	0.150	0.044	578.10	285.04
0.000113	1050.	1100.	1105.	1	0	0	-0.02	552.80	837.84

FLOW DISTRIBUTION FOR SECNO 31720.00 CWSEL 593.11

STA	285.	333.	343.	471.	610.	720.	810.	838.
PER Q	3.3	2.6	75.2	12.2	5.5	1.1	0.0	
AREA	158.6	72.6	1665.3	1378.0	782.5	280.2	15.5	
VEL	1.2	2.0	2.5	0.5	0.4	0.2	0.1	

*SECNO 33120.000

V

33120.00	15.15	593.25	0.0	0.0	593.28	0.03	0.10	0.00	581.10
5500.	3766.	1138.	595.	2714.	677.	1174.	1998.	293.	580.90
3.36	1.39	1.68	0.51	0.030	0.035	0.080	0.043	578.10	239.32
0.000048	1480.	1495.	1040.	2	0	0	-0.01	596.35	835.68

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STA	239.	255.	290.	330.	400.	500.	570.	600.	649.	695.	760.	820.	836.
PER Q	0.0	1.6	6.8	17.8	24.3	11.2	6.8	20.7	5.7	4.1	1.0	0.0	
AREA	9.8	113.9	290.2	647.8	900.4	490.3	261.1	676.5	497.0	471.5	195.3	9.8	
VEL	0.3	0.8	1.3	1.5	1.5	1.3	1.4	1.7	0.6	0.5	0.3	0.1	

*SECNO 34720.000

3470 ENCROACHMENT STATIONS 600.0 1350.0 TYPE 1 TARGET 750.000

W

34720.00	16.23	593.33	0.0	0.0	593.36	0.03	0.08	0.00	589.90
5500.	1225.	1660.	2615.	1112.	786.	3651.	2154.	314.	578.30
3.66	1.10	2.11	0.72	0.030	0.033	0.080	0.042	577.10	600.00
0.000075	1265.	1385.	1390.	2	0	0	-0.02	750.00	1350.00

FLOW DISTRIBUTION FOR SECNO 34720.00 CWSEL 593.33

STA	600.	612.	737.	883.	942.	955.	960.	1117.	1251.	1350.
PER Q	2.0	14.4	5.9	30.2	2.9	0.9	22.8	16.5	4.4	
AREA	90.8	629.3	391.9	786.2	177.2	59.2	1638.2	1264.2	511.9	
VEL	1.2	1.3	0.8	2.1	0.9	0.8	0.8	0.7	0.5	

*SECNO 35720.000

X

35720.00	15.69	593.39	0.0	0.0	593.40	0.01	0.04	0.00	581.90
5500.	3945.	1005.	550.	4356.	800.	1341.	2274.	331.	581.90
3.93	0.91	1.26	0.41	0.030	0.035	0.070	0.042	577.70	683.53
0.000025	760.	995.	950.	0	0	0	-0.01	959.95	1643.47

FLOW DISTRIBUTION FOR SECNO 35720.00 CWSEL 593.39

STA	684.	905.	1000.	1100.	1170.	1320.	1385.	1400.	1455.	1620.	1643.
PER Q	6.5	9.5	15.7	13.3	19.1	4.9	2.8	18.3	9.7	0.3	
AREA	652.4	607.0	838.9	657.3	1108.4	350.3	141.3	799.5	1271.1	70.2	
VEL	0.5	0.9	1.0	1.1	0.9	0.8	1.1	1.3	0.4	0.2	

*SECNO 36450.000

Y

36450.00	15.70	593.40	0.0	0.0	593.42	0.03	0.02	0.00	581.90
5500.	3631.	1121.	748.	3068.	649.	610.	2342.	341.	581.90
4.04	1.18	1.73	1.23	0.030	0.035	0.030	0.042	577.70	379.07
0.000049	445.	735.	790.	2	0	0	-0.01	704.65	1083.72

FLOW DISTRIBUTION FOR SECNO 36450.00 CWSEL 593.40

STA	379.	590.	790.	820.	850.	885.	920.	935.	980.	1050.	1084.
PER Q	9.2	24.2	5.9	8.7	10.1	4.7	3.1	20.4	12.4	1.2	
AREA	659.7	1179.1	236.9	298.4	348.1	218.8	126.7	648.9	519.4	91.0	
VEL	0.8	1.1	1.4	1.6	1.6	1.2	1.4	1.7	1.3	0.7	

*SECNO 36550.000

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

MOORE BUSINESS FORMS, INC 27

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Z  FOOT BRIDGE TO GOLF COURSE, TR 591.5, LC 591.4

     HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 36550.00    16.20   593.40     0.0      0.0    593.44     0.04     0.01     0.00   591.50
    5500.    4002.    1100.    398.    2608.     689.     293.    2354.     343.   591.50
     4.07     1.53     1.60     1.36   0.040    0.055    0.040    0.042   577.20   357.27
 0.000155     155.      75.      75.       0        0        0    -0.00   596.72   953.99

FLOW DISTRIBUTION FOR SECNO   36550.00          CWSEL     593.40

STA       357.     510.     650.     750.     800.     841.     891.     916.     954.
  PER Q     8.5     22.6     26.3     11.8      3.6     20.0      4.4      2.8
   AREA   457.8    825.8    789.9    369.9    164.1    688.6    168.3    125.1
    VEL     1.0      1.5      1.8      1.7      1.2      1.6      1.4      1.3

*SECNO 36551.000
 36551.00    16.20   593.40     0.0      0.0    593.44     0.04     0.00     0.00   591.50
    5500.    4002.    1100.    398.    2608.     689.     293.    2354.     343.   591.50
     4.07     1.53     1.60     1.36   0.040    0.055    0.040    0.042   577.20   357.26
 0.000154       8.       8.       8.       0        0        0    -0.01   596.74   954.00

FLOW DISTRIBUTION FOR SECNO   36551.00          CWSEL     593.40

STA       357.     510.     650.     750.     800.     841.     891.     916.     954.
  PER Q     8.5     22.6     26.3     11.8      3.6     20.0      4.4      2.8
   AREA   457.9    826.0    790.0    370.0    164.1    688.6    168.3    125.1
    VEL     1.0      1.5      1.8      1.7      1.2      1.6      1.4      1.3

*SECNO 36800.000

     AA

 36800.00    15.70   593.40     0.0      0.0    593.47     0.07     0.02     0.01   581.90
    5500.    2712.    2428.    361.    2061.     841.     251.    2365.     344.   581.90
     4.09     1.32     2.89     1.43   0.040    0.035    0.040    0.042   577.70   519.06
 0.000139     120.     180.     180.       2        0        0    -0.01   545.13  1064.19

FLOW DISTRIBUTION FOR SECNO   36800.00          CWSEL     593.40

STA       519.     540.     675.     800.     910.     931.     946.    1006.    1014.    1030.    1045.    1064.
  PER Q     0.1      8.2     19.1     16.8      1.9      3.1     44.1      2.7      2.9      0.9      0.1
   AREA    14.6    458.5    737.0    648.6     91.3    110.9    841.3     83.2    103.9     50.9     13.4
    VEL     0.3      1.0      1.4      1.4      1.2      1.5      2.9      1.8      1.5      1.0      0.3

*SECNO 37000.000

     AB  FOOT BRIDGE TO GOLF COURSE, TR 591.4, LC 591.3

     HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 37000.00    15.35   593.45     0.0      0.0    593.50     0.05     0.02     0.00   585.10
    5500.    3872.    876.    753.    2126.     672.     511.    2381.     347.   591.30
     4.12     1.82     1.30     1.47   0.030    0.055    0.030    0.043   578.10   620.07
 0.000092     210.     230.     235.       2        0        0    -0.00   477.72  1097.79
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FLOW DISTRIBUTION FOR SECNO   37000.00          CWSEL     593.45

STA       620.      715.      810.      910.      925.      951.     1001.     1024.     1070.     1098.
  PER Q     5.2      23.3      36.5       3.6       1.7      15.9       4.7       7.7       1.3
   AREA   273.2     707.7     945.0     111.7      88.8     672.5     169.7     271.9      69.2
    VEL     1.0       1.8       2.1       1.8       1.1       1.3       1.5       1.6       1.0

*SECNO 37001.000
 37001.00   15.35    593.45      0.0       0.0    593.50      0.05      0.00      0.00    585.10
    5500.   3872.     876.     753.     2127.     673.      511.     2382.      347.    591.30
     4.12    1.82      1.30     1.47     0.030     0.055     0.030     0.043    578.10    620.05
 0.000092      8.        8.       8.         0         0         0     -0.00    477.74   1097.79

FLOW DISTRIBUTION FOR SECNO   37001.00          CWSEL     593.45

STA       620.      715.      810.      910.      925.      951.     1001.     1024.     1070.     1098.
  PER Q     5.2      23.3      36.5       3.6       1.7      15.9       4.7       7.7       1.3
   AREA   273.3     707.8     945.1     111.8      88.8     672.5     169.7     271.9      69.2
    VEL     1.0       1.8       2.1       1.8       1.1       1.3       1.5       1.6       1.0

*SECNO 37220.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK     EG       HV       HL      OLOSS   BANK ELEV
   Q        QLOB     QCH      QROB     ALOB      ACH      AROB     VOL     TWA   LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL       XNCH     XNR      WTN     ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL    IDC      ICONT    CORAR   TOPWID    ENDST


3470 ENCROACHMENT STATIONS      145.0     600.0  TYPE      1  TARGET      455.000

        AC

 37220.00   14.15    593.45      0.0       0.0    593.51      0.05      0.01      0.00    580.80
    5500.   1957.    2176.    1367.     1553.     891.     1028.     2388.      348.    580.80
     4.14    1.26      2.44     1.33     0.050     0.040     0.050     0.043    579.30    145.41
 0.000135     50.      110.     140.         0         0         0     -0.01    454.59    600.00

FLOW DISTRIBUTION FOR SECNO   37220.00          CWSEL     593.45

STA       145.      160.      250.      315.      360.      385.      400.      402.      468.      480.      600.
  PER Q     0.1       4.5      11.6      11.9       4.4       2.6       0.5      39.6       4.0      20.8
   AREA    10.7     311.4     484.9     425.7     186.5     111.9      22.1     890.6     132.7     895.1
    VEL     0.3       0.8       1.3       1.5       1.3       1.3       1.1       2.4       1.7       1.3

CCHV    0.300 CEHV    0.500
*SECNO 37320.000

        AD  GEDDES RD BRIDGE, TR 597.4, LC 596.0

 37320.00   14.31    593.41      0.0       0.0    593.64      0.23      0.05      0.09    597.40
    5500.      0.    5500.       0.        0.     1425.        0.      2400.      349.    597.40
     4.15    0.0       3.86     0.0      0.050     0.040     0.070     0.043    579.10    203.09
 0.000500    225.      195.     205.         2         0         0     -0.01    121.86    324.94

FLOW DISTRIBUTION FOR SECNO   37320.00          CWSEL     593.41

STA       203.      325.
  PER Q   100.0
   AREA  1424.9
    VEL     3.9
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*SECNO 37321.000

3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    597.10 MAX ELLC    597.50

 37321.00     14.31    593.41      0.0       0.0    593.64      0.23      0.00      0.00    597.40
    5500.        0.     5500.       0.        0.     1425.        0.     2400.      349.    597.40
     4.15       0.0      3.86      0.0     0.030     0.060     0.030     0.043    579.10    203.09
 0.001125        1.        1.       1.         0         0         0     -0.01    121.86    324.94

FLOW DISTRIBUTION FOR SECNO    37321.00          CWSEL    593.41

STA       203.      325.
  PER Q     100.0
  AREA     1424.9
   VEL        3.9

*SECNO 37322.000

3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    597.10 MAX ELLC    597.50

 37322.00     14.33    593.43      0.0       0.0    593.67      0.23      0.02      0.00    597.40
    5500.        0.     5500.       0.        0.     1427.        0.     2401.      349.    597.40
     4.15       0.0      3.85      0.0     0.030     0.060     0.030     0.043    579.10    203.08
 0.001121       19.       19.      19.         0         0         0     -0.01    121.86    324.94

FLOW DISTRIBUTION FOR SECNO    37322.00          CWSEL    593.43

STA       203.      325.
  PER Q     100.0
  AREA     1426.8
   VEL        3.9

*SECNO 37323.000
 37323.00     14.34    593.44      0.0       0.0    593.67      0.23      0.00      0.00    597.40
    5500.        0.     5500.       0.        0.     1428.        0.     2401.      349.    597.40
     4.15       0.0      3.85      0.0     0.120     0.042     0.080     0.043    579.10    203.08
 0.000548        1.        1.       1.         0         0         0     -0.01    121.86    324.95

FLOW DISTRIBUTION FOR SECNO    37323.00          CWSEL    593.44

STA       203.      325.
  PER Q     100.0
  AREA     1427.7
   VEL        3.9

CCHV    0.300 CEHV    0.500
*SECNO 37820.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL      OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB       ACH       AROB      VOL      TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID    ENDST


   AE

 37820.00     15.09    593.79      0.0       0.0    593.82      0.02      0.09      0.06    584.40
    5500.     1992.     1098.    2409.     5195.      673.     1714.     2454.      356.    584.10
     4.27      0.38      1.63     1.41     0.150     0.048     0.035     0.043    578.70     75.52
 0.000093      580.      450.     420.         2         0         0     -0.08   1034.30   1109.82
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STA        76.       90.      480.      725.      735.      785.      940.     1065.     1110.
  PER Q      0.2      18.2      17.2       0.8      20.0      35.0       8.6       0.3
   AREA     41.9    2805.2    2252.2      95.9     673.0    1200.1     474.1      40.2
    VEL      0.2       0.4       0.4       0.4       1.6       1.6       1.0       0.4

CCHV    0.100 CEHV    0.300
*SECNO 39020.000

3470 ENCROACHMENT STATIONS       285.0      870.0  TYPE      1  TARGET      585.000

        AF

 39020.00     15.66    593.86     -0.0       0.0    593.88      0.02      0.07      0.00    586.70
    5500.      152.      938.     4410.      388.      815.     3521.     2595.      375.    586.50
     4.49      0.39      1.15      1.25     0.080     0.050     0.035     0.043    578.20    285.00
 0.000053     1075.      960.      915.         2         0         0     -0.01    585.00    870.00

FLOW DISTRIBUTION FOR SECNO   39020.00          CWSEL      593.86

STA       285.      305.      350.      380.      443.      750.      870.
  PER Q      0.0       1.0       1.7      17.1      59.5      20.7
   AREA     19.4     173.6     195.2     814.9    2565.9     954.9
    VEL      0.1       0.3       0.5       1.2       1.3       1.2

*SECNO 44520.000

        AG

 44520.00     11.05    593.95      0.0       0.0    593.98      0.02      0.09      0.00    588.00
    5500.     4924.      412.      165.     4148.      376.      278.     2759.      400.    590.00
     4.85      1.19      1.09      0.59     0.035     0.050     0.060     0.044    582.90    900.57
 0.000076     1645.     1705.     1265.         1         0         0     -0.00    844.33   1744.90

FLOW DISTRIBUTION FOR SECNO   44520.00          CWSEL      593.95

STA       901.      930.      975.     1225.     1340.     1390.     1610.     1630.     1643.     1683.     1730.     1745.
  PER Q      0.2       3.0      32.9      14.1       6.1      28.9       2.6       1.7       7.5       2.7       0.3
   AREA     28.9     178.3    1490.5     656.9     285.6    1311.6     119.2      77.5     376.5     233.2      44.4
    VEL      0.4       0.9       1.2       1.2       1.2       1.2       1.2       1.2       1.1       0.6       0.4

*SECNO 45000.000

        AH

 45000.00     11.14    594.04      0.0       0.0    594.16      0.12      0.15      0.03    588.00
    5500.     3806.     1645.      49.     2292.      379.       59.     2825.      412.    590.00
     4.94      1.66      4.34     0.82     0.080     0.050     0.120     0.045    582.90   1087.39
 0.001177      690.     1205.     1215.         1         0         0     -0.00    620.22   1707.61

FLOW DISTRIBUTION FOR SECNO   45000.00          CWSEL      594.04

STA      1087.     1095.     1605.     1643.     1683.     1700.     1708.
  PER Q      0.1      60.3       8.8      29.9       0.8       0.1
   AREA      7.7    2055.3     229.1     379.2      51.5       7.7
    VEL      0.6       1.6       2.1       4.3       0.9       0.4

*SECNO 45520.000

3265 DIVIDED FLOW
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45520.00    13.92   595.12     0.0      0.0    595.27     0.15     1.11     0.01   596.10
   5500.     542.    2514.    2445.     382.     636.    1050.    2893.     427.    583.00
    5.05     1.42     3.95     2.33    0.080    0.050    0.050    0.045   581.20    52.83
0.000754    1370.    1130.     975.        2        0        0    -0.02   393.05   446.95

FLOW DISTRIBUTION FOR SECNO   45520.00          CWSEL     595.12

STA        53.      70.     135.     141.     192.     200.     365.     447.
  PER Q      0.3      9.2      0.4     45.7      4.6     37.3      2.6
   AREA     26.8    332.9     21.9    635.7     77.0    845.1    127.9
    VEL      0.7      1.5      0.9      4.0      3.3      2.4      1.1

*SECNO 46870.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

        AJ

46870.00    13.47   595.47     0.0      0.0    595.48     0.01     0.20     0.01   585.90
   5500.     347.     861.    4292.     413.     644.    4735.    3016.     444.    582.40
    5.45     0.84     1.34     0.91    0.050    0.045    0.050    0.045   582.00   267.00
0.000058    1245.    1415.    1380.        2        0        0    -0.01   720.32   987.33

FLOW DISTRIBUTION FOR SECNO   46870.00          CWSEL     595.47

STA       267.     280.     300.     333.     384.     388.     393.     395.     440.     600.     930.     970.     987.
  PER Q      0.1      1.4      4.8     15.7      1.1      1.1      0.2      5.3     22.0     45.4      2.8      0.2
   AREA     22.5    109.3    281.0    643.8     51.1     56.6     17.6    335.9   1314.5   2711.1    218.6     30.0
    VEL      0.3      0.7      0.9      1.3      1.2      1.1      0.7      0.9      0.9      0.9      0.7      0.3

*SECNO 47620.000

        AK

47620.00    13.53   595.53     0.0      0.0    595.58     0.05     0.08     0.01   585.90
   5500.     121.    1747.    3632.     243.     755.    2556.    3107.     457.    585.30
    5.58     0.50     2.31     1.42    0.150    0.050    0.050    0.045   582.00    67.35
0.000216     750.     755.     870.        2        0        0    -0.01   580.02   647.37

FLOW DISTRIBUTION FOR SECNO   47620.00          CWSEL     595.53

STA        67.      85.     100.     115.     175.     185.     400.     590.     647.
  PER Q      0.1      0.7      1.4     31.8      3.0     41.4     20.5      1.2
   AREA     31.2     83.0    128.7    755.3     88.8   1457.8    908.3    101.3
    VEL      0.2      0.4      0.6      2.3      1.8      1.6      1.2      0.6

*SECNO 48570.000

        AL

48570.00    13.75   595.75     0.0      0.0    595.80     0.05     0.22     0.00   585.90
   5500.     112.    1964.    3424.     218.     768.    2963.    3187.     469.    585.30
    5.74     0.51     2.56     1.16    0.150    0.050    0.070    0.045   582.00    66.56
0.000257    1010.    1010.     900.        2        0        0    -0.01   609.06   675.62
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FLOW DISTRIBUTION FOR SECNO   48570.00          CWSEL     595.75

STA        67.       90.      105.      115.      175.      185.      450.      640.      676.
  PER Q      0.2       0.8       1.1      35.7       2.4      42.0      17.2       0.6
   AREA     43.9      86.2      88.0     768.5      91.0    1855.0     950.0      66.8
    VEL      0.2       0.5       0.7       2.6       1.4       1.2       1.0       0.5

CCHV    0.200 CEHV    0.400
*SECNO 48600.000

3470 ENCROACHMENT STATIONS      150.0      380.0  TYPE      1  TARGET      230.000

        AM

 48600.00     13.96    595.96       0.0       0.0    596.46      0.50      0.48      0.18    585.90
    5500.      398.     4511.      591.      318.      722.      519.     3247.      478.    583.00
     5.79      1.25      6.24      1.14     0.150     0.050     0.150     0.045    582.00    150.20
 0.001473      945.      945.      940.         1         0         0     -0.01    229.51    379.71

FLOW DISTRIBUTION FOR SECNO   48600.00          CWSEL     595.96

STA       150.      175.      205.      215.      270.      273.      345.      380.
  PER Q      0.5       4.0       2.7      82.0       0.6       9.4       0.7
   AREA     49.2     179.0      90.2     722.5      31.0     418.8      68.9
    VEL      0.6       1.2       1.6       6.2       1.1       1.2       0.6

CCHV    0.300 CEHV    0.500
*SECNO 48820.000

        AN  FROST RD BRIDGE, TR 599.2, LC 595.2

 48820.00     15.72    596.72       0.0       0.0    596.89      0.17      0.33      0.10    599.20
    4900.        0.     4900.        0.        0.    1480.        0.     3261.      480.    599.20
     5.83       0.0      3.31       0.0     0.150     0.045     0.150     0.045    581.00    542.20
 0.000446      380.      425.      460.         2         0         0     -0.01    115.70    657.90

FLOW DISTRIBUTION FOR SECNO   48820.00          CWSEL     596.72

STA       542.      658.
  PER Q    100.0
   AREA   1479.6
    VEL      3.3


SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.90      1.57      2.50       0.0    115.70      2.50   1281.00      0.0    584.00    584.00

*SECNO 48821.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA    LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST
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MOORE BUSINESS FORMS, INC 27

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
597.07	596.89	0.00	0.	4900.	1281.	1268.	595.20	599.20

48821.00	15.91	596.91	0.0	0.0	597.07	0.17	0.19	0.0	599.20
4900.	0.	4900.	0.	0.	1502.	0.	3262.	480.	599.20
5.83	0.0	3.26	0.0	0.150	0.045	0.150	0.045	581.00	542.20
0.000426	29.	29.	29.	2	0	0	-0.01	115.70	657.90

FLOW DISTRIBUTION FOR SECNO 48821.00 CWSEL 596.91

STA	542.	658.
PER Q	100.0	
AREA	1501.7	
VEL	3.3	

*SECNO 48920.000

3470 ENCROACHMENT STATIONS 350.0 740.0 TYPE 1 TARGET 390.000

AO

48920.00	14.87	597.07	0.0	0.0	597.13	0.06	0.02	0.03	586.20
4900.	1402.	1621.	1877.	998.	585.	1534.	3267.	481.	583.10
5.85	1.41	2.77	1.22	0.050	0.033	0.050	0.045	582.40	350.00
0.000125	90.	100.	80.	2	0	0	0.02	390.00	740.00

FLOW DISTRIBUTION FOR SECNO 48920.00 CWSEL 597.07

STA	350.	394.	424.	461.	466.	511.	532.	554.	598.	740.
PER Q	5.6	7.8	13.7	1.6	33.1	10.0	5.4	5.5	17.4	
AREA	269.5	269.1	407.7	51.3	584.6	269.2	191.8	253.8	819.2	
VEL	1.0	1.4	1.6	1.5	2.8	1.8	1.4	1.1	1.0	

*SECNO 49220.000

3470 ENCROACHMENT STATIONS 300.0 1020.0 TYPE 1 TARGET 720.000

AP

49220.00	15.54	597.14	0.0	0.0	597.17	0.03	0.03	0.01	592.00
4900.	196.	732.	3972.	367.	410.	3300.	3289.	434.	583.20
5.90	0.53	1.79	1.20	0.070	0.040	0.050	0.045	581.60	397.88
0.000114	255.	250.	265.	0	0	0	0.00	619.95	1017.83

FLOW DISTRIBUTION FOR SECNO 49220.00 CWSEL 597.14

STA	398.	405.	480.	510.	546.	551.	556.	630.	805.	1000.	1010.	1018.
PER Q	0.0	2.0	2.0	14.9	2.1	1.7	20.7	33.6	22.6	0.4	0.0	
AREA	4.1	216.7	146.7	409.8	63.7	53.9	709.6	1336.9	1099.7	31.4	4.5	
VEL	0.2	0.5	0.7	1.8	1.6	1.5	1.4	1.2	1.0	0.6	0.2	

CCHV 0.100 CEHV 0.300

*SECNO 49870.000

3470 ENCROACHMENT STATIONS 400.0 1130.0 TYPE 1 TARGET 730.000

AQ

49870.00	13.63	597.23	0.0	0.0	597.27	0.04	0.10	0.00	585.50
4900.	3030.	1564.	306.	4347.	596.	402.	3357.	493.	587.00
6.04	0.70	2.63	0.76	0.120	0.043	0.080	0.045	583.60	602.20

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FLOW DISTRIBUTION FOR SECNO    49870.00          CWSEL      597.23

STA        400.      480.      600.      960.      970.     1018.     1028.     1035.     1110.     1130.
  PER Q      4.4       9.8      45.9       1.8      31.9       2.4       0.9       2.9       0.1
  AREA     417.4     776.2    3048.5     104.7     595.6      97.2      50.5     241.4      12.9
   VEL       0.5       0.6       0.7       0.8       2.6       1.2       0.9       0.6       0.2

*SECNO 51270.000

3470 ENCROACHMENT STATIONS      150.0      500.0  TYPE      1  TARGET      350.000

        AR

 51270.00     13.97    597.57      0.0       0.0    597.68      0.11      0.39      0.02    585.50
    4900.     1325.     2428.    1148.      775.     723.      698.     3507.      514.    592.50
     6.23      1.71      3.36     1.64     0.040    0.035     0.040     0.045    583.60    150.00
 0.000238     1850.     1965.     890.         2        0         0     -0.02    350.00    500.00

FLOW DISTRIBUTION FOR SECNO    51270.00          CWSEL      597.57

STA        150.      275.      292.      300.      360.      400.      500.
  PER Q     18.9       4.1       4.1      49.5       7.6      15.8
  AREA     589.7     104.8      80.5     722.7     212.7     485.2
   VEL       1.6       1.9       2.5       3.4       1.7       1.6

CCHV    0.300 CEHV    0.500
*SECNO 51370.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

        AS  LONE RD BRIDGE, TR 598.5, LC 597.5

 51370.00     13.15    597.45      0.0       0.0    597.86      0.41      0.04      0.15    598.50
    4900.        0.     4900.       0.        0.     958.        0.     3510.      514.    598.50
     6.24       0.0      5.11      0.0     0.040    0.035     0.040     0.045    584.30    500.00
 0.000861       90.       90.      90.         2        0         0     -0.00     97.50    597.50

FLOW DISTRIBUTION FOR SECNO    51370.00          CWSEL      597.45

STA        500.      598.
  PER Q    100.0
  AREA     958.1
   VEL       5.1

*SECNO 51371.000

3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    597.80 MAX ELLC    598.30

 51371.00     13.16    597.46      0.0       0.0    597.86      0.41      0.00      0.00    598.50
    4900.        0.     4900.       0.        0.     958.        0.     3510.      514.    598.50
     6.24       0.0      5.11      0.0     0.040    0.035     0.040     0.045    584.30    500.00
 0.000861        1.        1.       1.         0        0         0     -0.00     97.50    597.50

FLOW DISTRIBUTION FOR SECNO    51371.00          CWSEL      597.46

STA        500.      598.
  PER Q    100.0
  AREA     958.1
   VEL       5.1
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*SECNO 51372.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   597.80 MAX ELLC   598.30

 51372.00    13.17   597.47     0.0      0.0    597.88     0.40     0.02     0.00   598.50
    4900.       0.    4900.      0.       0.     960.       0.    3510.     514.    598.50
     6.24      0.0     5.11     0.0    0.040    0.035    0.040    0.045   584.30   500.00
 0.000857      18.      18.      18.        0        0        0    -0.00    97.50   597.50

FLOW DISTRIBUTION FOR SECNO   51372.00          CWSEL     597.47

STA       500.      598.
  PER Q     100.0
   AREA     959.7
    VEL       5.1

*SECNO 51373.000
 51373.00    13.17   597.47     0.0      0.0    597.88     0.40     0.00     0.00   598.50
    4900.       0.    4900.      0.       0.     960.       0.    3510.     514.    598.50
     6.24      0.0     5.10     0.0    0.040    0.035    0.040    0.045   584.30   500.00
 0.000856       1.       1.       1.        0        0        0    -0.00    97.50   597.50

FLOW DISTRIBUTION FOR SECNO   51373.00          CWSEL     597.47

STA       500.      598.
  PER Q     100.0
   AREA     959.9
    VEL       5.1

*SECNO 51470.000

3470 ENCROACHMENT STATIONS      300.0     650.0  TYPE      1  TARGET      350.000

        AT

 51470.00    14.45   597.95     0.0      0.0    598.01     0.06     0.02     0.10   589.90
    4900.     1248.    1596.    2056.     972.     632.    1203.    3514.     515.    585.00
     6.25      1.28     2.53     1.71    0.040    0.035    0.040    0.045   583.50   300.00
 0.000121      85.      90.     105.        2        0        0    -0.00   350.00   650.00

FLOW DISTRIBUTION FOR SECNO   51470.00          CWSEL     597.95

STA       300.      350.      445.      457.      470.      519.      526.      535.      650.
  PER Q       6.6      15.5       1.4       2.0      32.6       2.7       3.0      36.2
   AREA     272.4     565.1      58.2      76.7     631.7      75.2      83.2    1044.2
    VEL       1.2       1.3       1.2       1.3       2.5       1.8       1.8       1.7

CEHV    0.200 CEHV    0.400
*SECNO 52470.000

3265 DIVIDED FLOW

   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST
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52470.00    13.80   598.10     0.0     0.0   598.16    0.06    0.16    0.00  593.10
   4900.     81.    1607.    3212.    144.     587.   2295.    3578.     525.   589.30
    6.40    0.56     2.74     1.40   0.050    0.040   0.050   0.045  584.30  250.00
0.000236     570.     925.    1070.       2        0       0    0.06  603.55  880.00


FLOW DISTRIBUTION FOR SECNO   52470.00          CWSEL     598.10

STA      250.     275.     351.     387.     440.     445.     449.     454.     470.     700.     880.
  PER Q    0.5      0.8      0.4     32.8      1.6      1.0      0.9      2.8     42.5     16.8
   AREA   40.1     79.8     24.2    586.8     41.5     29.2     30.5     92.1   1380.9    720.7
    VEL    0.6      0.5      0.8      2.7      1.8      1.7      1.5      1.5      1.5      1.1

CCHV    0.100 CEHV    0.300
*SECNO 53120.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS      500.0     810.0  TYPE      1  TARGET      310.000

        AV

53120.00    13.66   597.96     0.0     0.0   598.65    0.70    0.30    0.19  584.80
   4900.     657.    3629.     614.    472.     469.    367.    3606.     530.   584.80
    6.42     1.39     7.73     1.67   0.150    0.045   0.150   0.045  584.30  605.44
0.001723     580.     650.     520.       2        0       0    0.00  194.34  799.78


FLOW DISTRIBUTION FOR SECNO   53120.00          CWSEL     597.96

STA      605.     625.     680.     695.     705.     740.     760.     762.     790.     800.
  PER Q    0.2      4.6      3.9      4.8     74.1      9.8      0.3      2.3      0.1
   AREA   19.1    217.6    119.3    115.6    469.2    231.1     15.9    110.8      9.6
    VEL    0.4      1.0      1.6      2.0      7.7      2.1      1.0      1.0      0.4

*SECNO 53270.000

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS      250.0     810.0  TYPE      1  TARGET      560.000

        AW  U/S OF CONFLUENCE WITH HATCH RUN

53270.00    14.37   598.97     0.0     0.0   599.04    0.07    0.32    0.06  591.80
   4050.     341.    1733.    1976.    536.     542.   2982.    3634.     534.   590.10
    6.50    0.64     3.20     0.66   0.150    0.045   0.150   0.045  584.60  250.00
0.000349     500.     440.     460.       2        0       0   -0.02  560.00  810.00


FLOW DISTRIBUTION FOR SECNO   53270.00          CWSEL     598.97

STA      250.     295.     309.     319.     329.     370.     379.     384.     425.     795.     810.
  PER Q    4.2      1.7      1.3      1.3     42.8      1.4      0.4      3.2     42.9      0.9
   AREA  290.3     98.9     73.2     73.2    542.2     74.8     29.6    226.2   2577.4     74.5
    VEL    0.6      0.7      0.7      0.7      3.2      0.8      0.5      0.6      0.7      0.5

*SECNO 54770.000

        AX

54770.00    15.20   599.40     0.0     0.0   599.52    0.12    0.47    0.01  592.20
   4050.    1799.    2142.     108.    1497.     597.    116.    3724.     547.   587.90
    6.64     1.20     3.59     0.94   0.070    0.045   0.100   0.045  584.20   45.83
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FLOW DISTRIBUTION FOR SECNO [illegible] CWSEL [illegible]

STA	46.	60.	245.	350.	360.	370.	413.	418.	423.	428.	440.	443.
PER Q	0.3	31.9	9.9	0.4	1.9	52.9	1.5	0.9	0.2	0.1	0.0	
AREA	24.1	999.1	393.8	22.5	58.0	596.9	50.0	35.5	14.8	12.6	2.7	
VEL	0.6	1.3	1.0	0.7	1.3	3.6	1.2	1.0	0.5	0.3	0.3	

*SECNO 55590.000

3470 ENCROACHMENT STATIONS 170.0 510.0 TYPE 1 TARGET 340.000

AY

55590.00	15.41	599.71	0.0	0.0	599.79	0.08	0.27	0.00	584.50
4050.	2616.	1185.	249.	1343.	383.	299.	3769.	555.	584.50
6.75	1.95	3.10	0.83	0.040	0.045	0.100	0.045	584.30	170.00
0.000231	920.	925.	935.	2	0	0	-0.01	289.26	459.26

FLOW DISTRIBUTION FOR SECNO 55590.00 CWSEL 599.71

STA	170.	190.	375.	385.	395.	420.	459.
PER Q	1.4	47.1	5.9	10.2	29.3	6.2	
AREA	54.2	1056.7	97.1	134.6	382.8	298.6	
VEL	1.0	1.8	2.4	3.1	3.1	0.8	

*SECNO 56170.000
3280 CROSS SECTION 56170.00 EXTENDED 3.78 FEET

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

3470 ENCROACHMENT STATIONS 195.0 390.0 TYPE 1 TARGET 195.000

AZ

56170.00	13.98	599.78	0.0	0.0	600.31	0.53	0.38	0.14	586.90
4050.	597.	3135.	318.	367.	473.	345.	3798.	559.	586.90
6.80	1.63	6.62	0.92	0.150	0.050	0.150	0.045	585.80	195.00
0.001546	710.	840.	870.	2	0	0	-0.00	195.00	390.00

FLOW DISTRIBUTION FOR SECNO 56170.00 CWSEL 599.78

STA	195.	198.	215.	240.	275.	280.	295.	350.	390.
PER Q	0.1	3.0	11.6	77.4	1.9	2.6	2.5	0.9	
AREA	10.6	98.2	258.1	473.5	51.6	86.6	138.9	67.7	
VEL	0.5	1.2	1.8	6.6	1.5	1.2	0.7	0.5	

CCHV 0.300 CEHV 0.500
*SECNO 56270.000

BA DICE RD BRIDGE, TR 603.1, LC 602.9

56270.00	14.60	600.50	0.0	0.0	600.70	0.20	0.28	0.10	604.10
4050.	0.	4050.	0.	0.	1132.	0.	3805.	560.	603.10
6.82	0.0	3.58	0.0	0.150	0.050	0.150	0.045	585.90	70.32
0.000708	320.	280.	275.	2	0	0	-0.01	99.68	170.00

```
STA          70.       170.
  PER Q      100.0
   AREA     1131.8
    VEL        3.6

*SECNO 56271.000

3370 NORMAL BRIDGE.NRD    4 MIN ELTRD    602.80 MAX ELLC    604.20

 56271.00     14.60    600.50      0.0       0.0    600.70      0.20      0.00      0.00    604.10
    4050.        0.     4050.       0.        0.     1132.        0.     3806.      560.     603.10
     6.82       0.0      3.58      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000708        1.        1.       1.         0         0         0     -0.01     99.68    170.00

FLOW DISTRIBUTION FOR SECNO    56271.00          CWSEL      600.50

STA          70.       170.
  PER Q      100.0
   AREA     1131.9
    VEL        3.6

*SECNO 56272.000

3370 NORMAL BRIDGE.NRD    4 MIN ELTRD    602.80 MAX ELLC    604.20

 56272.00     14.61    600.51      0.0       0.0    600.71      0.20      0.01      0.00    604.10
    4050.        0.     4050.       0.        0.     1133.        0.     3806.      560.     603.10
     6.82       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000705       18.       18.      18.         0         0         0     -0.01     99.68    170.00

FLOW DISTRIBUTION FOR SECNO    56272.00          CWSEL      600.51

STA          70.       170.
  PER Q      100.0
   AREA     1133.1
    VEL        3.6

*SECNO 56273.000
 56273.00     14.61    600.51      0.0       0.0    600.71      0.20      0.00      0.00    604.10
    4050.        0.     4050.       0.        0.     1133.        0.     3806.      560.     603.10
     6.82       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000705        1.        1.       1.         0         0         0     -0.01     99.68    170.00

FLOW DISTRIBUTION FOR SECNO    56273.00          CWSEL      600.51

STA          70.       170.
  PER Q      100.0
   AREA     1133.2
    VEL        3.6
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MOORE BUSINESS FORMS INC 27

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
*****************************************************

T1
T2
T3

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      0.        6.        0.        0.      0.0       0.0       0.0       0.      590.400     0.0
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    15.000    0.0       -1.000    0.0       0.0       0.0       0.0       0.0       0.0       0.0
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*PROF 2

CCHV    0.100 CEHV    0.300
*SECNO 14520.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

         A  MANUFACTURED FROM USGS TOPOMAP

 14520.00     15.90     590.40       0.0     590.40     590.44       0.04       0.0        0.0     581.50
    5500.      1232.      3969.      299.      2880.      2236.      725.        0.         0.     580.20
      0.0       0.43       1.78      0.41      0.120      0.045      0.120       0.     574.50     438.00
 0.000093         0.         0.        0.          0          0          0     -0.02     788.39    1226.39

*SECNO 17540.000

3470 ENCROACHMENT STATIONS      870.0     2400.0  TYPE      1  TARGET      1530.000

         B  MANUFACTURED FROM USGS TOPOMAP

 17540.00     15.84     590.74       0.0     590.74     590.80       0.06       0.36       0.01     581.90
    5500.      1390.      3902.      208.      2589.      1705.      401.       357.       54.     580.60
      0.47       0.54       2.29      0.52      0.120      0.045      0.120      0.046     574.90    1592.42
 0.000156      3050.      3050.     2145.          2          0          0     -0.01     807.58    2400.00

*SECNO 19335.000

3470 ENCROACHMENT STATIONS      520.0      950.0  TYPE      1  TARGET       430.000

         C  MANUFACTURED FROM USGS TOPOMAP

 19335.00     15.70     591.10       0.0     591.10     591.35       0.25       0.49       0.06     582.40
    5500.      493.      4148.      859.      466.      914.      869.       487.       75.     581.10
      0.60       1.06       4.54      0.99      0.120      0.045      0.120      0.047     575.40     555.99
 0.000631      1720.      1875.      910.          2          0          0     -0.01     394.01     950.00
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*SECNO 21420.000

3470 ENCROACHMENT STATIONS      600.0     1230.0  TYPE      1  TARGET      630.000

        D  MANUFACTURED FROM USGS TOPOMAP

  21420.00     16.21    591.91      0.0    591.90    591.99      0.08      0.62      0.02    582.70
     5500.      670.     4358.     472.     1286.     1753.      861.      626.      97.     581.40
      0.88      0.52      2.49      0.55     0.120     0.045    -0.120     0.046    575.70    600.00
  0.000178     1650.     2095.     2120.         2         0         0     -0.04    576.34   1176.34

CCHV     0.300 CEHV     0.500
*SECNO 22680.000
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
    Q         QLOB      QCH       QROB      ALO3      ACH       AROB      VOL       TWA       LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS      250.0      550.0  TYPE      1  TARGET      300.000

        E  MANUFACTURED FROM USGS TOPOMAP

  22680.00     16.31    592.11      0.0    592.10    592.16      0.05      0.17      0.01    582.80
     5500.      79.     5172.     249.      213.     2724.      487.      733.     109.     581.50
      1.07      0.37      1.90      0.51     0.120     0.045     0.120     0.046    575.80    250.00
  0.000102     1235.     1280.     1235.         2         0         0     -0.03    360.00    550.00

CCHV     0.300 CEHV     0.500
*SECNO 22870.000

        F  SHOEMAKER RD BRIDGE, TR 595.8, LC 593.5

  22870.00     14.59    592.09      0.0    592.08    592.25      0.16      0.03      0.05    596.80
     5500.        0.     5500.        0.        0.     1731.        0.      747.     111.     596.80
      1.09      0.0      3.18      0.0     0.030     0.030     0.030     0.046    577.50    102.00
  0.000185      290.      245.      220.         2         0         0     -0.01    161.00    263.00

SPECIAL BRIDGE

SB   XK      XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.25      1.61      2.50      0.0     115.00      4.00   1790.00      1.57    580.00    580.00

*SECNO 22871.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     592.08 BRIDGE VELOCITY ,     3.50   CALCULATED CHANNEL AREA ,     1570.

  EGPRS     EGLWC     H3        QWEIR     QPR       BAREA     TRAPEZOID     ELLC      ELTRD
                                                              AREA
     0.0    592.25    0.01         0.     5500.     1790.     1800.     593.60    595.10

  22871.00     14.60    592.10      0.0    592.09    592.25      0.16      0.01      0.0    596.80
     5500.        0.     5500.        0.        0.     1732.        0.      748.     111.     596.80
      1.10      0.0      3.18      0.0     0.030     0.030     0.030     0.046    577.50    102.00
  0.000185       31.       31.       31.         0         0         0     -0.01    161.00    263.00
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MOORE BUSINESS FORMS INC 27

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*SECNO 23000.000
      G  C & O R R TRUSTLE, TR 599.6, LC 596.7

 23000.00     14.88    592.08      0.0    592.07    592.34      0.25      0.03      0.05    599.50
    5500.        0.     5500.       0.        0.     1360.        0.      752.      111.    594.00
     1.10       0.0      4.04      0.0     0.030     0.045     0.030     0.046    577.20    104.45
 0.000708      125.      100.      85.         2         0         0     -0.01    131.95    236.40

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     1.05      1.57      2.50      0.0     95.00     17.00   1730.00      1.45    580.00    580.00

*SECNO 23001.000
CLASS A LOW FLOW

3420 BRIDGE W.S.     591.97 BRIDGE VELOCITY .      4.82      CALCULATED CHANNEL AREA .      1142.

 EGPRS     EGLWC      H3      QWEIR      QPR      BAREA    TRAPEZOID     ELLC      ELTRD
                                                            AREA
     0.0    592.39     0.06       0.     5500.     1730.     1732.     596.90    599.50

 23001.00     14.94    592.14      0.0    592.13    592.39      0.25      0.05       0.0    599.50
    5500.        0.     5500.       0.        0.     1368.        0.      752.      111.    594.00
     1.10       0.0      4.02      0.0     0.030     0.045     0.030     0.046    577.20    104.34
 0.000697       15.       15.      15.         0         0         0     -0.01    132.30    236.65

CCHV     0.300 CEHV     0.500
*SECNO 23285.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS      230.0      830.0  TYPE      1  TARGET      600.000

        H

 23285.00     16.05    592.45      0.0    592.45    592.52      0.07      0.08      0.06    583.40
    5500.      742.     4560.     198.     1849.     2016.      510.      770.      113.    582.10
     1.14      0.40      2.26      0.39    0.150     0.045     0.150     0.046    576.40    230.00
 0.000148      260.      280.     295.         2         0         0     -0.02    596.05    828.05

CCHV     0.100 CEHV     0.300
*SECNO 25000.000

3470 ENCROACHMENT STATIONS     1190.0     2600.0  TYPE      1  TARGET     1410.000

        I

 25000.00     16.28    592.68      0.0    592.67    592.71      0.03      0.18      0.00    583.40
    5500.      891.     2385.    2223.     1211.     1302.     3510.      963.      141.    582.10
     1.54      0.74      1.83      0.63    0.070     0.042     0.090     0.045    576.40   1227.58
 0.000084     1595.     1750.    1505.         2         0         0     -0.01    909.01   2136.59
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*SECNO 25800.000

3470 ENCROACHMENT STATIONS      1030.0    1930.0  TYPE      1  TARGET      900.000

        J

  25800.00     14.95    592.75      0.0     592.74    592.77      0.02      0.07      0.00    584.10
     5500.      174.     2650.     2676.      345.     1701.     3865.     1117.      164.    583.90
      1.83      0.50      1.56      0.69     0.060     0.035     0.050     0.044    577.80   1048.12
  0.000043     1080.     1160.     1125.         2         0         0     -0.01    881.88   1930.00

*SECNO 25900.000

3470 ENCROACHMENT STATIONS      1030.0    2000.0  TYPE      1  TARGET      970.000

        K  FOOT BRIDGE, TR 584.9, LC 583.9

           HIGH SUBMERGED, NBR

  25900.00     15.16    592.76      0.0     592.75    592.78      0.02      0.00      0.00    581.90
     5500.      383.     1153.     3963.      647.      864.     4060.     1127.      165.    581.90
      1.85      0.59      1.33      0.98     0.050     0.035     0.030     0.044    577.60   1055.16
  0.000031       90.       90.       65.         0         0         0     -0.01    944.84   2000.00

*SECNO 25901.000

3370 NORMAL BRIDGE,NRD    6 MIN ELTRD   583.10 MAX ELLC    586.20

3470 ENCROACHMENT STATIONS      1030.0    2000.0  TYPE      1  TARGET      970.000
  25901.00     15.16    592.76      0.0     592.75    592.78      0.02      0.00      0.00    581.90
     5500.      337.      593.     4570.      625.      800.     4026.     1127.      165.    581.90
      1.85      0.54      0.74      1.13     0.050     0.035     0.030     0.044    577.60   1055.14
  0.000046        1.        1.        1.         0         0         0    122.46    944.86   2000.00

*SECNO 25902.000
    SECNO      DEPTH      CWSEL      CRIWS      WSELK       EG        HV        HL     OLOSS   BANK ELEV
        Q       QLOB       QCH       QROB       ALOB      ACH      AROB       VOL       TWA   LEFT/RIGHT
     TIME       VLOB       VCH       VROB        XNL     XNCH       XNR       WTN     ELMIN       SSTA
    SLOPE       XLOBL      XLCH      XLOBR      ITRIAL      IOC     IGONT     CORAR    TOPWID      ENDST

3370 NORMAL BRIDGE,NRD    6 MIN ELTRD   583.10 MAX ELLC    586.20

3470 ENCROACHMENT STATIONS      1030.0    2000.0  TYPE      1  TARGET      970.000
  25902.00     15.16    592.76      0.0     592.75    592.78      0.02      0.00      0.00    581.90
     5500.      337.      593.     4570.      625.      800.     4026.     1128.      165.    581.90
      1.85      0.54      0.74      1.14     0.050     0.035     0.030     0.044    577.60   1055.14
  0.000046       13.       13.       13.         0         0         0    122.46    944.86   2000.00

*SECNO 25903.000

3470 ENCROACHMENT STATIONS      1030.0    2000.0  TYPE      1  TARGET      970.000
  25903.00     15.16    592.76      0.0     592.75    592.78      0.02      0.00      0.00    581.90
     5500.      383.     1153.     3964.      647.      864.     4062.     1128.      165.    581.90
      1.85      0.59      1.33      0.98     0.050     0.035     0.030     0.044    577.60   1055.14
  0.000031        1.        1.        1.         0         0         0     -0.01    944.86   2000.00
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3470 ENCROACHMENT STATIONS      1140.0    2090.0  TYPE      1  TARGET      950.000

        L

 26000.00    14.77   592.77     0.0    592.76   592.78     0.01     0.00     0.00   585.70
    5500.     192.    1284.    4024.     426.    1146.    4648.    1141.     167.    583.80
     1.88     0.45     1.12     0.87    0.050    0.035    0.030    0.044   578.00  1140.00
 0.000023      80.      80.      95.        0        0        0    -0.04   950.00  2090.00

*SECNO 26320.000

3470 ENCROACHMENT STATIONS      1415.0    2520.0  TYPE      1  TARGET     1105.000

        M

 26320.00    14.77   592.77     0.0    592.77   592.78     0.01     0.00     0.00   585.70
    5500.      51.    1134.    4315.     204.    1214.    5616.    1166.     171.    583.80
     1.94     0.25     0.93     0.77    0.080    0.040    0.035    0.045   578.00  1415.00
 0.000022     310.     290.     130.        0        0        0    -0.05  1050.65  2465.65

*SECNO 26720.000

3470 ENCROACHMENT STATIONS      1430.0    2600.0  TYPE      1  TARGET     1170.000

        N  FOOT BRIDGE TO GOLF COURSE, TR 590.5, LC TRUSS  586.2

           HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 26720.00    15.39   592.79     0.0    592.78   592.79     0.01     0.01     0.00   590.50
    5500.       7.     647.    4846.      53.     995.    6236.    1241.     182.    588.80
     2.10     0.13     0.65     0.78    0.080    0.055    0.035    0.045   577.40  1430.00
 0.000023     525.     465.     450.        0        0        0    -0.02  1117.45  2547.45

*SECNO 26721.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN    SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID   ENDST

3370 NORMAL BRIDGE,NRD    5 MIN ELTRD    584.50 MAX ELLC    591.90

3470 ENCROACHMENT STATIONS      1430.0    2600.0  TYPE      1  TARGET     1170.000
 26721.00    15.38   592.78     0.0    592.78   592.79     0.01     0.00     0.00   590.50
    5500.       8.     318.    5175.      53.     925.    6236.    1241.     182.    588.80
     2.10     0.14     0.34     0.83    0.080    0.055    0.035    0.045   577.40  1430.00
 0.000026       1.       1.       1.        0        0        0   -69.91  1117.49  2547.49

*SECNO 26722.000

3370 NORMAL BRIDGE,NRD    5 MIN ELTRD    584.50 MAX ELLC    591.90

3470 ENCROACHMENT STATIONS      1430.0    2600.0  TYPE      1  TARGET     1170.000
 26722.00    15.39   592.79     0.0    592.78   592.80     0.01     0.00     0.00   590.50
    5500.       8.     318.    5175.      53.     925.    6236.    1244.     183.    588.80
     2.11     0.14     0.34     0.83    0.080    0.055    0.035    0.045   577.40  1430.00
 0.000026      20       20       20        0        0        0   -69.91  1117.40  2547.40
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*SECNO 26723.000

3470 ENCROACHMENT STATIONS      1430.0     2600.0  TYPE       1  TARGET      1170.000
 26723.00     15.39    592.79      0.0     592.78    592.80      0.01      0.00      0.00    590.50
    5500.        7.       647.    4846.       53.      995.    6236.     1244.      183.    588.80
     2.11      0.13      0.65     0.78     0.080     0.055     0.035     0.045    577.40   1430.00
 0.000023        1.        1.       1.         0         0         0     -0.01   1117.40   2547.40

*SECNO 26820.000

3470 ENCROACHMENT STATIONS      1430.0     2540.0  TYPE       1  TARGET      1110.000

        O

 26820.00     15.99    592.79      0.0     592.78    592.80      0.01      0.00      0.00    583.60
    5500.       49.      1597.    3854.      165.     1578.    5238.     1256.      185.    584.30
     2.14      0.30      1.01     0.74     0.080     0.040     0.035     0.045    576.80   1430.00
 0.000023       85.       85.      70.         0         0         0     -0.06    974.05   2404.05

*SECNO 27920.000

3470 ENCROACHMENT STATIONS      1235.0     2000.0  TYPE       1  TARGET       765.000

        P

 27920.00     15.32    592.82      0.0     592.81    592.84     -0.02      0.04      0.00    583.30
    5500.     1331.     2070.    2098.     3383.     1323.    1671.     1440.       208.    583.20
     2.43      0.39      1.56     1.26     0.120     0.040     0.035     0.045    577.50   1235.83
 0.000056     1145.     1385.    1150.         0         0         0     -0.06    764.17   2000.00

*SECNO 29520.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS     BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA     LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN      SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID     ENDST

3470 ENCROACHMENT STATIONS       200.0      740.0  TYPE       1  TARGET       540.000

        Q

 29520.00     14.61    592.92      0.0     592.91    592.95      0.04      0.11      0.00    581.10
    5500.     2697.     1928.     875.     3320.     889.     500.     1619.       229.    581.10
     2.70      0.81      2.17     1.75     0.080     0.040     0.035     0.045    578.30    200.00
 0.000107     1430.     1545.    1200.         2         0         0     -0.01    540.00    740.00

CCHV   0.300 CEHV    0.500
*SECNO 29920.000

        R  M-46 BRIDGE, TR 601.9, LC 598.5

 29920.00     15.94    592.94      0.0     592.93    593.06      0.12      0.06      0.04    602.80
    5500.        0.     5500.       0.        0.     1994.       0.     1651.       232.    602.80
     2.75       0.0      2.76      0.0     0.050     0.040     0.040     0.045    577.00     39.00
 0.000057       315       480      555         1         0         0      0.00    154.80    193.80
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SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.90	1.58	2.50	0.0	154.80	4.40	2789.00	0.0	580.00	580.00

*SECNO 29921.000
CLASS A LOW FLOW

3420 BRIDGE W.S. 592.94 BRIDGE VELOCITY , 2.83 CALCULATED CHANNEL AREA , 1946.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.0	593.06	0.00	0.	5500.	2789.	2782.	598.50	602.00

29921.00	15.94	592.94	0.0	592.93	593.06	0.12	0.00	0.0	602.80
5500.	0.	5500.	0.	0.	1994.	0.	1655.	232.	602.80
2.76	0.0	2.76	0.0	0.050	0.040	0.040	0.045	577.00	39.00
0.000206	105.	105.	105.	0	0	0	-0.00	154.80	193.80

*SECNO 30200.000

3470 ENCROACHMENT STATIONS 500.0 1100.0 TYPE 1 TARGET 600.000

S

30200.00	14.78	593.08	0.0	593.07	593.10	0.02	0.01	0.03	581.10
5500.	760.	2067.	2674.	958.	1363.	2712.	1671.	234.	581.10
2.80	0.79	1.52	0.99	0.045	0.030	0.030	0.045	578.30	500.00
0.000029	185.	185.	225.	2	0	0	-0.02	600.00	1100.00

CCHV 0.100 CEHV 0.300
*SECNO 30920.000

3470 ENCROACHMENT STATIONS 235.0 1000.0 TYPE 1 TARGET 765.000

T

30920.00	14.99	593.09	0.0	593.09	593.12	0.02	0.02	0.00	581.10
5500.	644.	2154.	2702.	1344.	1363.	2666.	1733.	242.	580.90
2.92	0.48	1.58	1.01	0.060	0.030	0.030	0.044	578.10	235.00
0.000031	620.	500.	485.	2	0	0	-0.03	765.00	1000.00

*SECNO 31720.000

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

3470 ENCROACHMENT STATIONS 280.0 800.0 TYPE 1 TARGET 520.000

U

31720.00	15.02	593.12	0.0	593.11	593.19	0.07	0.06	0.02	585.20
5500.	328.	4135.	1037.	232.	1667.	2431.	1855.	258.	582.40
3.07	1.41	2.48	0.43	0.030	0.035	0.150	0.044	578.10	284.96

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3470 ENCROACHMENT STATIONS      255.0     800.0  TYPE      1  TARGET      545.000

        V

 33120.00    15.16   593.26     0.0    593.25   593.29     0.03     0.10     0.00   581.10
    5500.    3771.    1140.     589.    2706.     677.    1126.    1986.     274.    580.90
     3.36     1.39     1.68     0.52    0.030    0.035    0.080    0.043   578.10   255.00
 0.000048    1480.    1405.    1040.        2        0        0    -0.00   545.00   800.00

*SECNO 34720.000

3470 ENCROACHMENT STATIONS      600.0    1350.0  TYPE      1  TARGET      750.000

        W

 34720.00    16.24   593.34     0.0    593.33   593.37     0.03     0.08     0.00   589.90
    5500.    1226.    1659.    2614.    1114.     787.    3654.    2141.     294.    578.30
     3.66     1.10     2.11     0.72    0.030    0.033    0.080    0.042   577.10   600.00
 0.000074    1265.    1385.    1390.        2        0        0    -0.02   750.60  1350.00

*SECNO 35720.000

3470 ENCROACHMENT STATIONS      660.0    1620.0  TYPE      1  TARGET      960.000

        X

 35720.00    15.69   593.39     0.0    593.39   593.41     0.01     0.04     0.00   581.90
    5500.    3965.    1009.     526.    4361.     800.    1272.    2260.     310.    581.90
     3.92     0.91     1.26     0.41    0.030    0.035    0.070    0.042   577.70   683.34
 0.000026     760.     995.     950.        0        0        0    -0.00   936.66  1620.00

*SECNO 36450.000

3470 ENCROACHMENT STATIONS      370.0    1670.0  TYPE      1  TARGET     1300.000

        Y

 36450.00    15.70   593.40     0.0    593.40   593.43     0.03     0.02     0.00   581.90
    5500.    3632.    1120.     748.    3072.     649.     611.    2327.     320.    581.90
     4.03     1.18     1.72     1.22    0.030    0.035    0.030    0.042   577.70   378.96
 0.000049     445.     735.     790.        2        0        0    -0.01   704.80  1083.76

*SECNO 36550.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN    SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

3470 ENCROACHMENT STATIONS      340.0     940.0  TYPE      1  TARGET      600.000

        Z  FOOT BRIDGE TO GOLF COURSE, TR 591.5, LC 591.4

           HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 36550.00    16.21   593.41     0.0    593.40   593.44     0.04     0.01     0.00   591.50
    5500.    4007.    1100.     392.    2611.     689.     284.    2339.     322.    591.50
     4.06     1.53     1.60     1.38    0.040    0.055    0.040    0.042   577.20   357.15
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*SECNO 36551.000

3470 ENCROACHMENT STATIONS        340.0      940.0  TYPE        1  TARGET        600.000
 36551.00     16.21    593.41      0.0     593.40    593.44      0.04      0.00      0.00    591.50
    5500.     4007.     1100.     392.      2611.      689.      284.     2340.      322.     591.50
     4.06      1.53      1.60     1.38     0.040     0.055     0.040     0.042    577.20    357.14
 0.000154        8.        8.       8.         0         0         0     -0.01    582.86    940.00

*SECNO 36800.000

3470 ENCROACHMENT STATIONS        475.0     1045.0  TYPE        1  TARGET        570.000

        AA

 36800.00     15.70    593.40      0.0     593.40    593.48      0.07      0.02      0.01    581.90
    5500.     2717.     2429.     354.      2064.      842.      238.     2351.      323.     581.90
     4.08      1.32      2.89     1.48     0.040     0.035     0.040     0.042    577.70    518.96
 0.000139      120.      180.     180.         2         0         0     -0.01    526.04   1045.00

*SECNO 37000.000

3470 ENCROACHMENT STATIONS        600.0     1090.0  TYPE        1  TARGET        490.000

        AB  FOOT BRIDGE TO GOLF COURSE, TR 591.4, LC 591.3

            HIGH SUBMERGED, NO BRIDGE ROUTINE, HIGH N FACTOR FOR TRUSS

 37000.00     15.36    593.46      0.0     593.45    593.50      0.05      0.02      0.00    585.10
    5500.     3873.      875.     752.      2129.      673.      507.     2367.      326.     591.30
     4.12      1.82      1.30     1.48     0.030     0.055     0.030     0.043    578.10    619.97
 0.000092      210.      230.     235.         2         0         0     -0.01    470.03   1090.00

*SECNO 37001.000

3470 ENCROACHMENT STATIONS        600.0     1090.0  TYPE        1  TARGET        490.000
 37001.00     15.36    593.46      0.0     593.45    593.50      0.05      0.00      0.00    585.10
    5500.     3873.      875.     752.      2129.      673.      507.     2367.      326.     591.30
     4.12      1.82      1.30     1.48     0.030     0.055     0.030     0.043    578.10    619.95
 0.000092        8.        8.       8.         0         0         0     -0.01    470.04   1090.00

*SECNO 37220.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS        145.0      600.0  TYPE        1  TARGET        455.000

        AC

 37220.00     14.16    593.46      0.0     593.45    593.51      0.05      0.01      0.00    580.80
    5500.     1957.     2175.    1367.      1555.      891.     1029.     2374.      327.     580.80
     4.13      1.26      2.44     1.33     0.050     0.040     0.050     0.043    579.30    145.33
 0.000135       50.      110.     140.         0         0         0     -0.01    454.66    600.00
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MOORE BUSINESS FORMS, INC 27

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 37320.00    14.32   593.42     0.0    593.41   593.65     0.23     0.05     0.09   597.40
    5500.       0.    5500.      0.        0.    1426.       0.    2386.     328.    597.40
     4.14      0.0     3.86     0.0     0.050    0.040    0.070    0.043   579.10   203.09
 0.000499     225.     195.    205.         2        0        0    -0.01   121.86   324.94

CCHV    0.100 CEHV    0.300
*SECNO 37321.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   597.10 MAX ELLC   597.50

 37321.00    14.32   593.42     0.0    593.41   593.65     0.23     0.00     0.00   597.40
    5500.       0.    5500.      0.        0.    1426.       0.    2386.     328.    597.40
     4.14      0.0     3.86     0.0     0.030    0.060    0.030    0.043   579.10   203.09
 0.001123       1.       1.      1.         0        0        0    -0.01   121.86   324.94

*SECNO 37322.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   597.10 MAX ELLC   597.50

 37322.00    14.34   593.44     0.0    593.43   593.67     0.23     0.02     0.00   597.40
    5500.       0.    5500.      0.        0.    1428.       0.    2386.     328.    597.40
     4.15      0.0     3.85     0.0     0.030    0.060    0.030    0.043   579.10   203.08
 0.001119      19.      19.     19.         0        0        0    -0.01   121.86   324.95

*SECNO 37323.000
 37323.00    14.34   593.44     0.0    593.44   593.67     0.23     0.00     0.00   597.40
    5500.       0.    5500.      0.        0.    1429.       0.    2386.     328.    597.40
     4.15      0.0     3.85     0.0     0.120    0.042    0.080    0.043   579.10   203.08
 0.000547       1.       1.      1.         0        0        0    -0.01   121.86   324.95

CCHV    0.300 CEHV    0.500
*SECNO 37820.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

3470 ENCROACHMENT STATIONS      200.0     1050.0  TYPE      1  TARGET      850.000

      AE

 37820.00    15.10   593.80     0.0    593.79   593.83     0.03     0.09     0.06   584.40
    5500.     1847.    1154.    2499.     4477.     673.    1646.    2435.     334.    584.10
     4.25      0.41     1.71     1.52     0.150    0.048    0.035    0.043   578.70   200.00
 0.000102     580.     450.     420.         2        0        0    -0.05   850.00  1050.00

CCHV    0.100 CEHV    0.300
*SECNO 39020.000

3470 ENCROACHMENT STATIONS      285.0      870.0  TYPE      1  TARGET      585.000

      AF

 39020.00    15.67   593.87     0.0    593.86   593.90     0.02     0.07     0.00   586.70
    5500.      153.     937.    4410.      390.     816.    3527.    2566.     350.    586.50
     4.47      0.39     1.15     1.25     0.080    0.050    0.035    0.043   578.20   285.00
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*SECNO 44520.000

3470 ENCROACHMENT STATIONS       930.0     1730.0  TYPE       1  TARGET       800.000

        AG

 44520.00     11.07    593.97      0.0     593.95    593.99      0.02      0.09      0.00    588.00
    5500.      4949.      415.     136.      4124.      377.      233.     2729.      374.    590.00
     4.83       1.20      1.19     0.58      0.035     0.050     0.060     0.044    582.90    930.00
 0.000077      1645.     1705.    1265.          2         0         0     -0.00    800.00   1730.00

*SECNO 45000.000

3470 ENCROACHMENT STATIONS      1095.0     1700.0  TYPE       1  TARGET       605.000

        AH

 45000.00     11.16    594.06      0.0     594.04    594.17      0.12      0.15      0.03    588.00
    5500.      3813.     1645.      43.      2298.      380.       52.     2794.      386.    590.00
     4.92       1.66      4.33     0.82      0.080     0.050     0.120     0.045    582.90   1095.00
 0.001166       690.     1205.    1215.          2         0         0     -0.00    605.00   1700.00

*SECNO 45520.000

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS        70.0      450.0  TYPE       1  TARGET       380.000

        AI

 45520.00     13.94    595.14      0.0     595.12    595.29      0.15      1.11      0.01    596.10
    5500.       512.     2525.    2463.       356.      636.     1053.     2861.      400.    583.00
     5.03       1.44      3.97     2.34      0.080     0.050     0.050     0.045    581.20     70.00
 0.000759      1370.     1130.     975.          2         0         0     -0.01    376.22    447.27

*SECNO 46870.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA      LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

3470 ENCROACHMENT STATIONS       270.0      970.0  TYPE       1  TARGET       700.000

        AJ

 46870.00     13.48    595.48      0.0     595.47    595.50      0.02      0.20      0.01    585.90
    5500.       349.      863.    4288.       413.      645.     4714.     2985.      417.    582.40
     5.42       0.85      1.34     0.91      0.050     0.045     0.050     0.045    582.00    270.00
 0.000058      1245.     1415.    1380.          2         0         0     -0.01    700.00    970.00

*SECNO 47620.000

3470 ENCROACHMENT STATIONS       100.0      630.0  TYPE       1  TARGET       530.000

        AK

 47620.00     13.54    595.54      0.0     595.53    595.59      0.05      0.08      0.01    585.90
    5500.        60.     1763.    3677.       129.      756.     2553.     3074.      429.    585.30
     5.56       0.47      2.33     1.44      0.150     0.050     0.050     0.045    582.00    100.00
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*SECNO 48570.000

3470 ENCROACHMENT STATIONS      100.0      640.0  TYPE      1  TARGET      540.000

        AL

 48570.00    13.77   595.77     0.0    595.75   595.82     0.05     0.23     0.00   585.90
    5500.      72.    1993.    3435.     124.     770.    2904.    3151.     440.   585.30
     5.71     0.58     2.59     1.18    0.150    0.050    0.070    0.045   582.00   100.00
 0.000264    1010.    1010.     900.        2        0        0    -0.01   540.00   640.00

CCHV    0.200 CEHV    0.400
*SECNO 48600.000

3470 ENCROACHMENT STATIONS      150.0      380.0  TYPE      1  TARGET      230.000

        AM

 48600.00    13.99   595.99     0.0    595.96   596.49     0.50     0.49     0.18   585.90
    5500.     400.    4507.     593.     320.     724.     522.    3209.     449.   583.00
     5.76     1.25     6.23     1.14    0.150    0.050    0.150    0.045   582.00   150.03
 0.001461     945.     945.     940.        0        0        0    -0.01   229.93   379.96

CCHV    0.300 CEHV    0.500
*SECNO 48820.000

        AN  FROST RD BRIDGE, TR 599.2, LC 595.2

 48820.00    15.74   596.74     0.0    596.72   596.91     0.17     0.32     0.10   599.20
    4900.       0.    4900.       0.       0.    1482.       0.    3224.     451.   599.20
     5.80     0.0     3.31     0.0    0.150    0.045    0.150    0.045   581.00   542.20
 0.000443     380.     425.     460.        2        0        0    -0.01   115.70   657.90

SPECIAL BRIDGE

SB  XK        XKOR      COFQ      RDLEN     BWC       BWP       BAREA     SS        ELCHU     ELCHD
     0.90      1.57      2.50      0.0     115.70     2.50    1281.00     0.0      584.00    584.00

*SECNO 48821.000
   SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLDSS    BANK ELEV
   Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA      LEFT/RIGHT
   TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN     SSTA
   SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID    ENDST

PRESSURE FLOW

 EGPRS      EGLWC      H3       QWEIR      QPR       BAREA    TRAPEZOID      ELLC     ELTRD
                                                                AREA
  597.10    596.91     0.00       0.      4900.     1281.     1268.      595.20    599.20

 48821.00    15.93   596.93     0.0    596.91   597.10     0.16     0.19     0.0    599.20
    4900.       0.    4900.       0.       0.    1504.       0.    3225.     451.   599.20
     5.80     0.0     3.26     0.0    0.150    0.045    0.150    0.045   581.00   542.20
 0.000423      29.      29.      29.        2        0        0    -0.01   115.70   657.90
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*SECNO 48920.000

3470 ENCROACHMENT STATIONS      350.0     740.0  TYPE      1  TARGET      390.000

        AO

 48920.00    14.69   597.09     0.0    597.07   597.15     0.06     0.02     0.03   586.20
    4900.    1402.    1619.    1879.    1000.     586.    1539.    3230.     451.    583.10
     5.81     1.40     2.76     1.22    0.050    0.033    0.050    0.045   582.40   350.00
 0.000124      90.     100.      80.        2        0        0    -0.02   390.00   740.00

*SECNO 49220.000

3470 ENCROACHMENT STATIONS      300.0    1020.0  TYPE      1  TARGET      720.000

        AP

 49220.00    15.56   597.16     0.0    597.14   597.19     0.03     0.03     0.01   592.00
    4900.     197.     731.    3972.     370.     411.    3310.    3251.     454.    583.20
     5.87     0.53     1.78     1.20    0.070    0.040    0.050    0.045   581.60   397.74
 0.000113     255.     250.     265.        0        0        0    -0.00   620.25  1017.99

CCHV    0.100 CEHV    0.300
*SECNO 49870.000

3470 ENCROACHMENT STATIONS      400.0    1130.0  TYPE      1  TARGET      730.000

        AQ

 49870.00    13.65   597.25     0.0    597.23   597.29     0.04     0.10     0.00   585.50
    4900.    3031.    1562.     307.    4359.     597.     404.    3320.     464.    587.00
     6.01     0.70     2.62     0.76    0.120    0.043    0.080    0.045   583.60   400.00
 0.000204     600.     695.     650.        0        0        0    -0.01   730.00  1130.00

*SECNO 51270.000

3470 ENCROACHMENT STATIONS      150.0     500.0  TYPE      1  TARGET      350.000

        AR

 51270.00    13.99   597.59     0.0    597.57   597.69     0.11     0.38     0.02   585.50
    4900.    1327.    2424.    1150.     778.     724.     701.    3470.     484.    592.50
     6.20     1.71     3.35     1.64    0.040    0.035    0.040    0.045   583.60   150.00
 0.000236    1850.    1965.     890.        2        0        0    -0.02   350.00   500.00

CCHV    0.300 CEHV    0.500
*SECNO 51370.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA     LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

        AS  LONE RD BRIDGE, TR 598.5, LC 597.5

 51370.00    13.17   597.47     0.0    597.45   597.88     0.40     0.04     0.15   598.50
    4900.       0.    4900.       0.       0.     960.       0.    3473.     485.    598.50
     6.21      0.0     5.10      0.0    0.040    0.035    0.040    0.045   584.30   500.00
 0.000856      90.      90.      90.        2        0        0    -0.00    97.50   597.50
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*SECNO 51371.000

3370 NORMAL BRIDGE,NRO    4 MIN ELTRD    597.80 MAX ELLC    598.30

 51371.00    13.17    597.47     0.0    597.46    597.88     0.40     0.00     0.00    598.50
    4900.       0.     4900.      0.       0.      960.       0.     3473.     485.    598.50
     6.21      0.0      5.10     0.0     0.040     0.035    0.040    0.045   584.30    500.00
 0.000856       1.        1.      1.         0         0        0    -0.00    97.50    597.50


*SECNO 51372.000

3370 NORMAL BRIDGE,NRO    4 MIN ELTRD    597.80 MAX ELLC    598.30

 51372.00    13.19    597.49     0.0    597.47    597.89     0.40     0.02     0.00    598.50
    4900.       0.     4900.      0.       0.      961.       0.     3473.     485.    598.50
     6.21      0.0      5.10     0.0     0.040     0.035    0.040    0.045   584.30    500.00
 0.000852      18.       18.      18.         0         0        0     0.00    97.50    597.50


*SECNO 51373.000
 51373.00    13.19    597.49     0.0    597.47    597.90     0.40     0.00     0.00    598.50
    4900.       0.     4900.      0.       0.      962.       0.     3473.     485.    598.50
     6.21      0.0      5.10     0.0     0.040     0.035    0.040    0.045   584.30    500.00
 0.000851       1.        1.      1.         0         0        0    -0.00    97.50    597.50


*SECNO 51470.000

3470 ENCROACHMENT STATIONS      300.0      650.0  TYPE      1  TARGET      350.000

        AT

 51470.00    14.46    597.96     0.0    597.95    598.02     0.06     0.02     0.10    589.90
    4900.     1250.     1594.    2056.     975.      632.    1205.    3478.     485.    585.00
     6.22      1.28      2.52     1.71     0.040     0.035    0.040    0.045   583.50    300.00
 0.000120       85.       90.     105.         2         0        0    -0.00   350.00    650.00


CCHV    0.200 CEHV    0.400
*SECNO 52470.000

3265 DIVIDED FLOW

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


3470 ENCROACHMENT STATIONS      250.0      880.0  TYPE      1  TARGET      630.000

        AU

 52470.00    13.82    598.12     0.0    598.10    598.18     0.06     0.16     0.00    593.10
    4900.      82.     1604.    3214.     146.      588.    2302.    3541.     495.    589.30
     6.37      0.56      2.73     1.40    0.050     0.040    0.050    0.045   584.30    250.00
 0.000234      570.      925.    1070.         2         0        0    -0.06   604.16    880.00


CCHV    0.100 CEHV    0.300
*SECNO 53120.000

3301 HV CHANGED MORE THAN HVINS
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MOORE BUSINESS FORMS INC 27

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3470 ENCROACHMENT STATIONS        500.0      810.0  TYPE       1  TARGET       310.000

        AV

 53120.00    13.67   597.97     0.0    597.96   598.67     0.69     0.30     0.19   584.80
    4900.     659.    3627.     614.     473.     470.     368.    3569.     500.    584.80
     6.39     1.39     7.72     1.67    0.150    0.045    0.150    0.045   584.30   605.29
 0.001715     580.     650.     520.        2        0        0     0.01   194.56   799.85

*SECNO 53270.000

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS        250.0      810.0  TYPE       1  TARGET       560.000

        AW  U/S OF CONFLUENCE WITH HATCH RUN

 53270.00    14.38   598.98     0.0    598.97   599.05     0.07     0.32     0.06   591.80
    4050.     341.    1732.    1977.     536.     543.    2987.    3597.     504.    590.10
     6.47     0.64     3.19     0.66    0.150    0.045    0.150    0.045   584.60   250.00
 0.000347     500.     440.     460.        2        0        0    -0.02   560.00   810.00

*SECNO 54770.000

3470 ENCROACHMENT STATIONS         60.0      420.0  TYPE       1  TARGET       360.000

        AX

 54770.00    15.21   599.41     0.0    599.40   599.54     0.12     0.47     0.01   592.20
    4050.    1804.    2177.      69.    1477.     597.      66.    3687.     517.    587.90
     6.61     1.22     3.64     1.05    0.070    0.045    0.100    0.045   584.20    60.00
 0.000405    1255.    1270.    1250.        2        0        0    -0.02   360.00   420.00

*SECNO 55590.000

3470 ENCROACHMENT STATIONS        170.0      510.0  TYPE       1  TARGET       340.000

        AY

 55590.00    15.43   599.73     0.0    599.71   599.82     0.08     0.28     0.00   584.50
    4050.    2618.    1183.     249.    1347.     383.     299.    3731.     524.    584.50
     6.72     1.94     3.09     0.83    0.040    0.045    0.100    0.045   584.30   170.00
 0.000229     920.     925.     935.        2        0        0     0.00   289.31   459.31

*SECNO 56170.000
3280 CROSS SECTION  56170.00 EXTENDED      3.80 FEET

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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3470 ENCROACHMENT STATIONS       195.0      390.0  TYPE       1  TARGET       195.000

        AZ

 56170.00     14.00    599.80      0.0    599.78    600.33      0.53      0.38      0.13    586.90
    4050.       598.     3133.     320.      368.      474.      347.     3760.      529.    586.90
     6.76      1.62      6.61     0.92     0.150     0.050     0.150     0.045    585.80    195.00
 0.001537      710.      840.     870.         2         0         0     -0.00    195.00    390.00


CCHV    0.300 CEHV    0.500
*SECNO 56270.000

        BA  DICE RD BRIDGE, TR 603.1, LC 602.9

 56270.00     14.61    600.51      0.0    600.50    600.71      0.20      0.28      0.10    604.10
    4050.        0.     4050.       0.        0.     1133.        0.     3767.      530.    603.10
     6.78       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000705      320.      280.     275.         2         0         0     -0.01     99.68    170.00


*SECNO 56271.000

3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    602.80 MAX ELLC    604.20

 56271.00     14.61    600.51      0.0    600.50    600.71      0.20      0.00      0.00    604.10
    4050.        0.     4050.       0.        0.     1133.        0.     3767.      530.    603.10
     6.78       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000705        1.        1.       1.         0         0         0     -0.01     99.68    170.00


*SECNO 56272.000

3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    602.80 MAX ELLC    604.20

 56272.00     14.63    600.53      0.0    600.51    600.72      0.20      0.01      0.00    604.10
    4050.        0.     4050.       0.        0.     1135.        0.     3768.      530.    603.10
     6.79       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000702       18.       18.      18.         0         0         0     -0.01     99.68    170.00


*SECNO 56273.000
 56273.00     14.63    600.53      0.0    600.51    600.72      0.20      0.00      0.00    604.10
    4050.        0.     4050.       0.        0.     1135.        0.     3768.      530.    603.10
     6.79       0.0      3.57      0.0     0.150     0.050     0.150     0.045    585.90     70.32
 0.000702        1.        1.       1.         0         0         0     -0.01     99.68    170.00
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MOORE BUSINESS FORMS INC 27

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

RECEIVED
APR 14 1981
WATER MANAGEMENT

SWAN CREEK

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
14520.000	590.40	0.0	590.44	788.39	1232.01	3968.81	299.19	0.0	0.0	900.00	1070.00	0.0
14520.000	590.40	0.0	590.44	788.39	1232.01	3968.81	299.19	0.0	0.0	900.00	1070.00	0.0
17540.000	590.74	0.0	590.80	839.44	1389.02	3899.11	211.87	0.0	0.0	2200.00	2330.00	0.0
17540.000	590.74	0.0	590.80	807.58	1390.12	3902.20	207.67	1530.00	870.00	2200.00	2330.00	2400.00
19335.000	591.10	0.0	591.34	779.66	490.62	4123.85	885.52	0.0	0.0	670.00	740.00	0.0
19335.000	591.10	0.0	591.35	394.01	493.47	4147.79	858.74	430.00	520.00	670.00	740.00	950.00
21420.000	591.90	0.0	591.98	626.40	680.68	4348.82	470.50	0.0	0.0	840.00	970.00	0.0
21420.000	591.91	0.01	591.99	576.34	670.10	4357.80	472.10	630.00	600.00	840.00	970.00	1230.00
22680.000	592.10	0.0	592.15	300.00	79.28	5172.05	248.67	300.00	250.00	300.00	500.00	550.00
22680.000	592.11	0.01	592.16	300.00	79.41	5171.85	248.74	300.00	250.00	300.00	500.00	550.00
22870.000	592.08	0.0	592.24	161.00	0.0	5500.00	0.0	0.0	0.0	102.00	263.00	0.0
22870.000	592.09	0.01	592.25	161.00	0.0	5500.00	0.0	0.0	0.0	102.00	263.00	0.0
22871.000	592.09	0.0	592.25	161.00	0.0	5500.00	0.0	0.0	0.0	102.00	263.00	0.0
22871.000	592.10	0.01	592.25	161.00	0.0	5500.00	0.0	0.0	0.0	102.00	263.00	0.0
23000.000	592.07	0.0	592.33	131.89	0.0	5500.00	0.0	0.0	0.0	101.00	245.00	0.0
23000.000	592.08	0.01	592.34	131.95	0.0	5500.00	0.0	0.0	0.0	101.00	245.00	0.0
23001.000	592.13	0.0	592.38	132.25	0.0	5500.00	0.0	0.0	0.0	101.00	245.00	0.0
23001.000	592.14	0.01	592.39	132.30	0.0	5500.00	0.0	0.0	0.0	101.00	245.00	0.0
23285.000	592.45	0.0	592.51	597.82	741.65	4560.88	197.46	600.00	230.00	560.00	710.00	830.00
23285.000	592.45	0.01	592.52	598.05	742.43	4559.86	197.71	600.00	230.00	560.00	710.00	830.00
25000.000	592.67	0.0	592.70	906.73	891.05	2386.32	2222.63	1410.00	1190.00	1453.00	1549.00	2600.00
25000.000	592.68	0.01	592.71	909.01	891.48	2385.41	2223.11	1410.00	1190.00	1453.00	1549.00	2600.00
25800.000	592.74	0.0	592.77	881.86	174.02	2651.72	2674.27	900.00	1030.00	1122.00	1250.00	1930.00
25800.000	592.75	0.01	592.77	881.88	174.17	2650.31	2675.52	900.00	1030.00	1122.00	1250.00	1930.00
25900.000	592.75	0.0	592.77	944.78	383.26	1154.15	3962.59	970.00	1030.00	1170.00	1234.00	2000.00
25900.000	592.76	0.01	592.78	944.84	383.32	1153.21	3963.48	970.00	1030.00	1170.00	1234.00	2000.00

MOORE BUSINESS FORMS, INC 27

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
25901.000	592.75	0.0	592.77	944.80	336.92	593.82	4569.25	970.00	1030.00	1170.00	1234.00	2000.00
25901.000	592.76	0.01	592.78	944.86	337.00	593.26	4569.73	970.00	1030.00	1170.00	1234.00	2000.00
25902.000	592.75	0.0	592.77	944.80	336.91	593.85	4569.23	970.00	1030.00	1170.00	1234.00	2000.00
25902.000	592.76	0.01	592.78	944.86	337.00	593.30	4569.70	970.00	1030.00	1170.00	1234.00	2000.00
25903.000	592.75	0.0	592.77	944.80	383.28	1153.81	3962.91	970.00	1030.00	1170.00	1234.00	2000.00
25903.000	592.76	0.01	592.78	944.86	383.34	1152.84	3963.81	970.00	1030.00	1170.00	1234.00	2000.00
26000.000	592.76	0.0	592.77	977.02	206.96	1280.94	4012.09	0.0	0.0	1212.00	1300.00	0.0
26000.000	592.77	0.01	592.78	950.00	191.83	1284.01	4024.16	950.00	1140.00	1212.00	1300.00	2090.00
26320.000	592.77	0.0	592.78	1049.38	50.88	1134.30	4314.82	1105.00	1415.00	1460.00	1555.00	2520.00
26320.000	592.77	0.01	592.78	1050.65	50.93	1133.66	4315.41	1105.00	1415.00	1460.00	1555.00	2520.00
26720.000	592.78	0.0	592.79	1116.12	7.01	647.06	4845.93	1170.00	1430.00	1458.00	1533.00	2600.00
26720.000	592.79	0.01	592.79	1117.45	7.04	646.62	4846.34	1170.00	1430.00	1458.00	1533.00	2600.00
26721.000	592.78	0.0	592.79	1116.17	7.48	317.79	5174.73	1170.00	1430.00	1458.00	1533.00	2600.00
26721.000	592.78	0.01	592.79	1117.49	7.52	317.57	5174.90	1170.00	1430.00	1458.00	1533.00	2600.00
26722.000	592.78	0.0	592.79	1116.12	7.48	317.79	5174.72	1170.00	1430.00	1458.00	1533.00	2600.00
26722.000	592.79	0.01	592.80	1117.40	7.52	317.59	5174.89	1170.00	1430.00	1458.00	1533.00	2600.00
26723.000	592.78	0.0	592.79	1116.12	7.01	647.06	4845.93	1170.00	1430.00	1458.00	1533.00	2600.00
26723.000	592.79	0.01	592.80	1117.40	7.04	646.63	4846.32	1170.00	1430.00	1458.00	1533.00	2600.00
26820.000	592.78	0.0	592.79	973.44	48.67	1598.16	3853.17	1110.00	1430.00	1448.00	1562.00	2540.00
26820.000	592.79	0.01	592.80	974.05	48.56	1597.11	3854.23	1110.00	1430.00	1448.00	1562.00	2540.00
27920.000	592.81	0.0	592.84	764.08	1331.09	2071.28	2097.63	765.00	1235.00	1646.00	1744.00	2000.00
27920.000	592.82	0.01	592.84	764.17	1331.25	2070.48	2098.27	765.00	1235.00	1646.00	1744.00	2000.00
29520.000	592.91	0.0	592.95	556.35	2695.84	1926.67	877.49	0.0	0.0	600.00	666.00	0.0
29520.000	592.92	0.01	592.95	540.00	2697.28	1927.53	875.19	540.00	200.00	600.00	666.00	740.00
29920.000	592.93	0.0	593.05	154.80	0.0	5500.00	0.0	0.0	0.0	39.00	193.80	0.0
29920.000	592.94	0.01	593.06	154.80	0.0	5500.00	0.0	0.0	0.0	39.00	193.80	0.0
29921.000	592.93	0.0	593.05	154.80	0.0	5500.00	0.0	0.0	0.0	39.00	193.80	0.0
29921.000	592.94	0.01	593.06	154.80	0.0	5500.00	0.0	0.0	0.0	39.00	193.80	0.0
30200.000	593.07	0.0	593.09	600.00	759.67	2067.47	2672.86	600.00	500.00	600.00	700.00	1100.00
30200.000	593.08	0.01	593.10	600.00	759.58	2066.61	2673.81	600.00	500.00	600.00	700.00	1100.00
30920.000	593.09	0.0	593.11	849.71	672.12	2140.07	2687.81	0.0	0.0	440.00	540.00	0.0
30920.000	593.09	0.01	593.12	765.00	643.56	2154.30	2702.14	765.00	235.00	440.00	540.00	1000.00
31720.000	593.11	0.0	593.18	552.80	326.92	4134.54	1038.54	0.0	0.0	343.00	471.00	0.0
31720.000	593.12	0.01	593.19	515.04	327.68	4134.86	1037.46	520.00	280.00	343.00	471.00	800.00
33120.000	593.25	0.0	593.28	596.35	3766.44	1138.14	595.42	0.0	0.0	600.00	649.00	0.0
33120.000	593.26	0.01	593.29	545.00	3770.93	1140.21	588.86	545.00	255.00	600.00	649.00	800.00
34720.000	593.33	0.0	593.36	750.00	1225.00	1660.22	2614.79	750.00	600.00	883.00	942.00	1350.00
34720.000	593.34	0.01	593.37	750.00	1226.49	1659.29	2614.22	750.00	600.00	883.00	942.00	1350.00

MOORE BUSINESS FORMS INC 27

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
35720.000	593.39	0.0	593.40	959.95	3944.72	1004.99	550.29	0.0	0.0	1400.00	1455.00	0.0
35720.000	593.39	0.01	593.41	936.66	3964.80	1009.17	526.03	960.00	660.00	1400.00	1455.00	1620.00
36450.000	593.40	0.0	593.42	704.65	3631.30	1120.71	747.98	0.0	0.0	935.00	980.00	0.0
36450.000	593.40	0.01	593.43	704.80	3632.16	1119.77	748.07	1300.00	370.00	935.00	980.00	1670.00
36550.000	593.40	0.0	593.44	596.72	4001.74	1100.09	398.17	0.0	0.0	840.80	890.80	0.0
36550.000	593.41	0.01	593.44	582.85	4007.16	1100.34	392.49	600.00	340.00	840.80	890.80	940.00
36551.000	593.40	0.0	593.44	596.74	4001.83	1099.99	398.18	0.0	0.0	840.80	890.80	0.0
36551.000	593.41	0.01	593.44	582.86	4007.23	1100.28	392.49	600.00	340.00	840.80	890.80	940.00
36800.000	593.40	0.0	593.47	545.13	2711.58	2427.84	360.58	0.0	0.0	946.00	1006.00	0.0
36800.000	593.40	0.01	593.48	526.04	2716.96	2429.30	353.73	570.00	475.00	946.00	1006.00	1045.00
37000.000	593.45	0.0	593.50	477.72	3871.75	875.61	752.64	0.0	0.0	950.80	1000.80	0.0
37000.000	593.46	0.01	593.50	470.03	3873.13	875.29	751.58	490.00	600.00	950.80	1000.80	1090.00
37001.000	593.45	0.0	593.50	477.74	3871.78	875.53	752.69	0.0	0.0	950.80	1000.80	0.0
37001.000	593.46	0.01	593.50	470.04	3873.16	875.21	751.63	490.00	600.00	950.80	1000.80	1090.00
37220.000	593.45	0.0	593.51	454.59	1956.69	2176.30	1367.01	455.00	145.00	402.00	468.00	600.00
37220.000	593.46	0.01	593.51	454.66	1957.45	2175.33	1367.22	455.00	145.00	402.00	468.00	600.00
37320.000	593.41	0.0	593.64	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37320.000	593.42	0.01	593.65	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37321.000	593.41	0.0	593.64	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37321.000	593.42	0.01	593.65	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37322.000	593.43	0.0	593.67	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37322.000	593.44	0.01	593.67	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37323.000	593.44	0.0	593.67	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37323.000	593.44	0.01	593.67	121.86	0.0	5500.00	0.0	0.0	0.0	203.00	325.00	0.0
37820.000	593.79	0.0	593.82	1034.30	1992.50	1098.06	2409.45	0.0	0.0	735.00	785.00	0.0
37820.000	593.80	0.01	593.83	850.00	1847.13	1153.83	2499.05	850.00	200.00	735.00	785.00	1050.00
39020.000	593.86	0.0	593.88	585.00	152.39	938.02	4409.59	585.00	285.00	380.00	443.00	870.00
39020.000	593.87	0.01	593.90	585.00	152.72	937.20	4410.08	585.00	285.00	380.00	443.00	870.00
44520.000	593.95	0.0	593.98	844.33	4923.64	411.58	164.77	0.0	0.0	1643.00	1683.00	0.0
44520.000	593.97	0.01	593.99	800.00	4949.34	414.75	135.91	800.00	930.00	1643.00	1683.00	1730.00
45000.000	594.04	0.0	594.16	620.22	3806.19	1644.95	48.86	0.0	0.0	1643.00	1683.00	0.0
45000.000	594.06	0.02	594.17	605.00	3812.79	1644.52	42.69	605.00	1095.00	1643.00	1683.00	1700.00
45520.000	595.12	0.0	595.27	393.05	541.91	2513.51	2444.58	0.0	0.0	142.00	192.00	0.0
45520.000	595.14	0.01	595.29	376.22	511.86	2525.36	2462.78	380.00	70.00	142.00	192.00	450.00
46870.000	595.47	0.0	595.48	720.32	347.31	860.95	4291.73	0.0	0.0	333.00	384.00	0.0
46870.000	595.48	0.01	595.50	700.00	348.85	862.95	4288.19	700.00	270.00	333.00	384.00	970.00
47620.000	595.53	0.0	595.58	580.02	121.42	1746.96	3631.62	0.0	0.0	115.00	175.00	0.0
47620.000	595.54	0.01	595.59	530.00	60.16	1762.90	3676.94	530.00	100.00	115.00	175.00	630.00

MOORE BUSINESS FORMS INC 27

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
48570.000	595.75	0.0	595.80	609.06	112.29	1963.82	3423.89	0.0	0.0	115.00	175.00	0.0
48570.000	595.77	0.02	595.82	540.00	71.73	1993.00	3435.26	540.00	100.00	115.00	175.00	640.00
48600.000	595.96	0.0	596.46	229.51	398.40	4510.88	590.72	230.00	150.00	215.00	270.00	380.00
48600.000	595.99	0.03	596.49	229.93	399.69	4507.14	593.17	230.00	150.00	215.00	270.00	380.00
48820.000	596.72	0.0	596.89	115.70	0.0	4900.00	0.0	0.0	0.0	542.20	657.90	0.0
48820.000	596.74	0.02	596.91	115.70	0.0	4900.00	0.0	0.0	0.0	542.20	657.90	0.0
48821.000	596.91	0.0	597.07	115.70	0.0	4900.00	0.0	0.0	0.0	542.20	657.90	0.0
48821.000	596.93	0.02	597.10	115.70	0.0	4900.00	0.0	0.0	0.0	542.20	657.90	0.0
48920.000	597.07	0.0	597.13	390.00	1401.89	1621.33	1876.78	390.00	350.00	466.00	511.00	740.00
48920.000	597.09	0.02	597.15	390.00	1401.85	1619.30	1878.84	390.00	350.00	466.00	511.00	740.00
49220.000	597.14	0.0	597.17	619.95	195.91	732.40	3971.69	720.00	300.00	510.00	546.00	1020.00
49220.000	597.16	0.02	597.19	620.25	196.97	731.13	3971.90	720.00	300.00	510.00	546.00	1020.00
49870.000	597.23	0.0	597.27	730.00	3030.02	1564.02	305.96	730.00	400.00	970.00	1018.00	1130.00
49870.000	597.25	0.02	597.29	730.00	3031.07	1561.91	307.02	730.00	400.00	970.00	1018.00	1130.00
51270.000	597.57	0.0	597.68	350.00	1324.55	2427.92	1147.52	350.00	150.00	300.00	360.00	500.00
51270.000	597.59	0.02	597.69	350.00	1326.55	2423.74	1149.70	350.00	150.00	300.00	360.00	500.00
51370.000	597.45	0.0	597.86	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51370.000	597.47	0.02	597.88	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51371.000	597.46	0.0	597.86	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51371.000	597.47	0.02	597.88	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51372.000	597.47	0.0	597.88	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51372.000	597.49	0.02	597.89	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51373.000	597.47	0.0	597.88	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51373.000	597.49	0.02	597.90	97.50	0.0	4900.00	0.0	0.0	0.0	500.00	597.50	0.0
51470.000	597.95	0.0	598.01	350.00	1247.80	1595.91	2056.29	350.00	300.00	470.00	519.00	650.00
51470.000	597.96	0.02	598.02	350.00	1249.82	1594.32	2055.86	350.00	300.00	470.00	519.00	650.00
52470.000	598.10	0.0	598.16	603.55	80.85	1606.89	3212.27	630.00	250.00	387.00	440.00	880.00
52470.000	598.12	0.02	598.18	604.16	81.83	1603.82	3214.36	630.00	250.00	387.00	440.00	880.00
53120.000	597.96	0.0	598.65	194.34	657.43	3628.59	613.97	310.00	500.00	705.00	740.00	810.00
53120.000	597.97	0.01	598.67	194.56	658.55	3627.03	614.42	310.00	500.00	705.00	740.00	810.00
53270.000	598.97	0.0	599.04	560.00	340.67	1733.15	1976.19	560.00	250.00	329.00	370.00	810.00
53270.000	598.98	0.01	599.05	560.00	340.83	1731.90	1977.26	560.00	250.00	329.00	370.00	810.00
54770.000	599.40	0.0	599.52	396.98	1799.50	2142.18	108.32	0.0	0.0	370.00	413.00	0.0
54770.000	599.41	0.01	599.54	360.00	1803.53	2177.11	69.36	360.00	60.00	370.00	413.00	420.00
55590.000	599.71	0.0	599.79	289.26	2615.54	1185.36	249.09	340.00	170.00	395.00	420.00	510.00
55590.000	599.73	0.02	599.82	289.31	2618.29	1182.79	248.91	340.00	170.00	395.00	420.00	510.00
56170.000	599.78	0.0	600.31	195.00	597.20	3134.93	317.87	195.00	195.00	240.00	275.00	390.00
56170.000	599.80	0.02	600.33	195.00	597.55	3132.73	319.72	195.00	195.00	240.00	275.00	390.00

MOORE BUSINESS FORMS INC 27

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENC	STENCL	STCHL	STCHR	STENCR
56270.000	600.50	0.0	600.70	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56270.000	600.51	0.02	600.71	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56271.000	600.50	0.0	600.70	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56271.000	600.51	0.02	600.71	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56272.000	600.51	0.0	600.71	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56272.000	600.53	0.02	600.72	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56273.000	600.51	0.0	600.71	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0
56273.000	600.53	0.02	600.72	99.68	0.0	4050.00	0.0	0.0	0.0	70.00	170.00	0.0

MOORE BUSINESS FORMS, INC 27

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOK*S	VCH	AREA	.01K
14520.000	0.0	0.0	0.0	574.50	5500.00	590.40	0.0	590.44	0.93	1.78	5841.05	5688.88
14520.000	0.0	0.0	0.0	574.50	5500.00	590.40	0.0	590.44	0.93	1.78	5841.05	5688.88
17540.000	3050.00	0.0	0.0	574.90	5500.00	590.74	0.0	590.80	1.56	2.29	4730.64	4400.42
17540.000	3050.00	0.0	0.0	574.90	5500.00	590.74	0.0	590.80	1.56	2.29	4694.75	4396.93
19335.000	1875.00	0.0	0.0	575.40	5500.00	591.10	0.0	591.34	6.24	4.51	2432.20	2201.73
19335.000	1875.00	0.0	0.0	575.40	5500.00	591.10	0.0	591.35	6.31	4.54	2248.60	2189.02
21420.000	2095.00	0.0	0.0	575.70	5500.00	591.90	0.0	591.98	1.78	2.48	3966.29	4126.84
21420.000	2095.00	0.0	0.0	575.70	5500.00	591.91	0.0	591.99	1.78	2.49	3899.44	4122.56
22680.000	1280.00	0.0	0.0	575.80	5500.00	592.10	0.0	592.15	1.02	1.90	3420.48	5440.43
22680.000	1280.00	0.0	0.0	575.80	5500.00	592.11	0.0	592.16	1.02	1.90	3423.12	5446.51
22870.000	245.00	0.0	0.0	577.50	5500.00	592.08	0.0	592.24	1.86	3.18	1729.12	4033.08
22870.000	245.00	0.0	0.0	577.50	5500.00	592.09	0.0	592.25	1.85	3.18	1730.57	4038.45
22871.000	31.00	595.10	593.60	577.50	5500.00	592.09	0.0	592.25	1.85	3.18	1730.61	4038.61
22871.000	31.00	595.10	593.60	577.50	5500.00	592.10	0.0	592.25	1.85	3.18	1732.07	4043.97
23000.000	100.00	0.0	0.0	577.20	5500.00	592.07	0.0	592.33	7.09	4.05	1358.91	2065.23
23000.000	100.00	0.0	0.0	577.20	5500.00	592.08	0.0	592.34	7.08	4.04	1360.06	2067.58
23001.000	14.50	599.50	596.90	577.20	5500.00	592.13	0.0	592.38	6.99	4.03	1366.32	2080.29
23001.000	14.50	599.50	596.90	577.20	5500.00	592.14	0.0	592.39	6.97	4.02	1367.52	2082.73
23285.000	280.00	0.0	0.0	576.40	5500.00	592.45	0.0	592.51	1.48	2.26	4369.73	4520.07
23285.000	280.00	0.0	0.0	576.40	5500.00	592.45	0.0	592.52	1.48	2.26	4374.69	4525.73
25000.000	1750.00	0.0	0.0	576.40	5500.00	592.67	0.0	592.70	0.84	1.83	6016.04	5993.38
25000.000	1750.00	0.0	0.0	576.40	5500.00	592.68	0.0	592.71	0.84	1.83	6023.14	6001.43
25800.000	1160.00	0.0	0.0	577.80	5500.00	592.74	0.0	592.77	0.44	1.56	5904.41	8332.19
25800.000	1160.00	0.0	0.0	577.80	5500.00	592.75	0.0	592.77	0.43	1.56	5911.09	8344.53
25900.000	90.00	0.0	0.0	577.60	5500.00	592.75	0.0	592.77	0.31	1.34	5563.52	9829.08
25900.000	90.00	0.0	0.0	577.60	5500.00	592.76	0.0	592.78	0.31	1.33	5570.67	9846.29
25901.000	1.00	583.10	586.20	577.60	5500.00	592.75	0.0	592.77	0.46	0.74	5443.84	8120.03
25901.000	1.00	583.10	586.20	577.60	5500.00	592.76	0.0	592.78	0.46	0.74	5451.22	8136.11
25902.000	12.50	583.10	586.20	577.60	5500.00	592.75	0.0	592.77	0.46	0.74	5443.38	8119.03
25902.000	12.50	583.10	586.20	577.60	5500.00	592.76	0.0	592.78	0.46	0.74	5450.76	8135.10
25903.000	1.00	0.0	0.0	577.60	5500.00	592.75	0.0	592.77	0.31	1.34	5566.05	9835.17
25903.000	1.00	0.0	0.0	577.60	5500.00	592.76	0.0	592.78	0.31	1.33	5573.44	9852.95
26000.000	80.00	0.0	0.0	578.00	5500.00	592.76	0.0	592.77	0.23	1.12	6246.35	11383.87
26000.000	80.00	0.0	0.0	578.00	5500.00	592.77	0.0	592.78	0.23	1.12	6219.77	11368.09
26320.000	290.00	0.0	0.0	578.00	5500.00	592.77	0.0	592.78	0.22	0.93	7025.86	11798.53
26320.000	290.00	0.0	0.0	578.00	5500.00	592.77	0.0	592.78	0.22	0.93	7033.80	11816.78

MOORE BUSINESS FORMS, INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
26720.000	465.00	0.0	0.0	577.40	5500.00	592.78	0.0	592.79	0.23	0.65	7276.00	11424.32
26720.000	465.00	0.0	0.0	577.40	5500.00	592.79	0.0	592.79	0.23	0.65	7284.45	11443.08
26721.000	1.00	584.50	591.90	577.40	5500.00	592.78	0.0	592.79	0.26	0.34	7206.37	10699.03
26721.000	1.00	584.50	591.90	577.40	5500.00	592.78	0.0	592.79	0.26	0.34	7214.82	10717.14
26722.000	20.00	584.50	591.90	577.40	5500.00	592.78	0.0	592.79	0.26	0.34	7206.09	10698.44
26722.000	20.00	584.50	591.90	577.40	5500.00	592.79	0.0	592.80	0.26	0.34	7214.28	10715.97
26723.000	1.00	0.0	0.0	577.40	5500.00	592.78	0.0	592.79	0.23	0.65	7276.00	11424.32
26723.000	1.00	0.0	0.0	577.40	5500.00	592.79	0.0	592.80	0.23	0.65	7284.18	11442.48
26820.000	85.00	0.0	0.0	576.80	5500.00	592.78	0.0	592.79	0.23	1.01	6972.90	11511.73
26820.000	85.00	0.0	0.0	576.80	5500.00	592.79	0.0	592.80	0.23	1.01	6980.27	11529.75
27920.000	1385.00	0.0	0.0	577.50	5500.00	592.81	0.0	592.84	0.56	1.57	6371.17	7334.20
27920.000	1385.00	0.0	0.0	577.50	5500.00	592.82	0.0	592.84	0.56	1.56	6376.77	7343.67
29520.000	1545.00	0.0	0.0	578.30	5500.00	592.91	0.0	592.95	1.07	2.17	4717.11	5316.55
29520.000	1545.00	0.0	0.0	578.30	5500.00	592.92	0.0	592.95	1.07	2.17	4709.68	5318.70
29920.000	480.00	0.0	0.0	577.00	5500.00	592.93	0.0	593.05	2.06	2.76	1993.33	3831.10
29920.000	480.00	0.0	0.0	577.00	5500.00	592.94	0.0	593.06	2.06	2.76	1994.36	3834.17
29921.000	105.40	602.00	598.50	577.00	5500.00	592.93	0.0	593.05	2.06	2.76	1992.71	3829.22
29921.000	105.40	602.00	598.50	577.00	5500.00	592.94	0.0	593.06	2.06	2.76	1993.77	3832.40
30200.000	185.00	0.0	0.0	578.30	5500.00	593.07	0.0	593.09	0.29	1.52	5028.62	10223.75
30200.000	185.00	0.0	0.0	578.30	5500.00	593.08	0.0	593.10	0.29	1.52	5032.73	10236.56
30920.000	500.00	0.0	0.0	578.10	5500.00	593.09	0.0	593.11	0.31	1.57	5478.27	9881.91
30920.000	500.00	0.0	0.0	578.10	5500.00	593.09	0.0	593.12	0.31	1.58	5373.55	9824.28
31720.000	1100.00	0.0	0.0	578.10	5500.00	593.11	0.0	593.18	1.13	2.48	4352.32	5173.18
31720.000	1100.00	0.0	0.0	578.10	5500.00	593.12	0.0	593.19	1.13	2.48	4329.81	5180.31
33120.000	1405.00	0.0	0.0	578.10	5500.00	593.25	0.0	593.28	0.48	1.68	4563.61	7936.63
33120.000	1405.00	0.0	0.0	578.10	5500.00	593.26	0.0	593.29	0.48	1.68	4509.12	7928.51
34720.000	1385.00	0.0	0.0	577.10	5500.00	593.33	0.0	593.36	0.75	2.11	5549.10	6363.57
34720.000	1385.00	0.0	0.0	577.10	5500.00	593.34	0.0	593.37	0.74	2.11	5554.05	6372.40
35720.000	995.00	0.0	0.0	577.70	5500.00	593.39	0.0	593.40	0.25	1.26	6496.45	10915.43
35720.000	995.00	0.0	0.0	577.70	5500.00	593.39	0.0	593.41	0.26	1.26	6432.87	10879.00
36450.000	735.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.42	0.49	1.73	4326.79	7865.46
36450.000	735.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.43	0.49	1.72	4331.78	7878.56
36550.000	75.00	0.0	0.0	577.20	5500.00	593.40	0.0	593.44	1.55	1.60	3589.53	4424.71
36550.000	75.00	0.0	0.0	577.20	5500.00	593.41	0.0	593.44	1.54	1.60	3583.87	4427.48
36551.000	7.70	0.0	0.0	577.20	5500.00	593.40	0.0	593.44	1.54	1.60	3589.97	4425.52
36551.000	7.70	0.0	0.0	577.20	5500.00	593.41	0.0	593.44	1.54	1.60	3584.15	4428.01
36800.000	180.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.47	1.39	2.89	3153.54	4669.93
36800.000	180.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.48	1.39	2.89	3143.73	4670.90

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRTWS	EG	TOK*S	VCH	AREA	.01K
37000.000	230.00	0.0	0.0	578.10	5500.00	593.45	0.0	593.50	0.92	1.30	3309.64	5729.16
37000.000	230.00	0.0	0.0	578.10	5500.00	593.46	0.0	593.50	0.92	1.30	3308.48	5736.30
37001.000	7.70	0.0	0.0	578.10	5500.00	593.45	0.0	593.50	0.92	1.30	3310.11	5730.38
37001.000	7.70	0.0	0.0	578.10	5500.00	593.46	0.0	593.50	0.92	1.30	3308.94	5737.52
37220.000	110.00	0.0	0.0	579.30	5500.00	593.45	0.0	593.51	1.35	2.44	3471.51	4735.66
37220.000	110.00	0.0	0.0	579.30	5500.00	593.46	0.0	593.51	1.35	2.44	3474.73	4741.91
37320.000	195.00	0.0	0.0	579.10	5500.00	593.41	0.0	593.64	5.00	3.86	1424.86	2458.99
37320.000	195.00	0.0	0.0	579.10	5500.00	593.42	0.0	593.65	4.99	3.86	1425.78	2461.47
37321.000	1.00	597.10	597.50	579.10	5500.00	593.41	0.0	593.64	11.25	3.86	1424.92	1639.44
37321.000	1.00	597.10	597.50	579.10	5500.00	593.42	0.0	593.65	11.23	3.86	1425.78	1640.98
37322.000	19.00	597.10	597.50	579.10	5500.00	593.43	0.0	593.67	11.21	3.85	1426.82	1642.85
37322.000	19.00	597.10	597.50	579.10	5500.00	593.44	0.0	593.67	11.19	3.85	1427.69	1644.39
37323.000	1.00	0.0	0.0	579.10	5500.00	593.44	0.0	593.67	5.48	3.85	1427.75	2349.29
37323.000	1.00	0.0	0.0	579.10	5500.00	593.44	0.0	593.67	5.47	3.85	1428.61	2351.50
37820.000	450.00	0.0	0.0	578.70	5500.00	593.79	0.0	593.82	0.93	1.63	7582.66	5704.71
37820.000	450.00	0.0	0.0	578.70	5500.00	593.80	0.0	593.83	1.02	1.71	6795.63	5433.90
39020.000	960.00	0.0	0.0	578.20	5500.00	593.86	0.0	593.88	0.53	1.15	4723.94	7541.61
39020.000	960.00	0.0	0.0	578.20	5500.00	593.87	0.0	593.90	0.53	1.15	4731.94	7561.47
44520.000	1705.00	0.0	0.0	582.90	5500.00	593.95	0.0	593.98	0.76	1.09	4802.57	6329.58
44520.000	1705.00	0.0	0.0	582.90	5500.00	593.97	0.0	593.99	0.77	1.10	4733.75	6287.50
45000.000	1205.00	0.0	0.0	582.90	5500.00	594.04	0.0	594.16	11.77	4.34	2730.55	1602.84
45000.000	1205.00	0.0	0.0	582.90	5500.00	594.06	0.0	594.17	11.66	4.33	2730.55	1610.47
45520.000	1130.00	0.0	0.0	581.20	5500.00	595.12	0.0	595.27	7.54	3.95	2067.31	2002.53
45520.000	1130.00	0.0	0.0	581.20	5500.00	595.14	0.0	595.29	7.59	3.97	2045.14	1996.05
46870.000	1415.00	0.0	0.0	582.00	5500.00	595.47	0.0	595.48	0.58	1.34	5792.04	7233.02
46870.000	1415.00	0.0	0.0	582.00	5500.00	595.48	0.0	595.50	0.58	1.34	5770.62	7229.62
47620.000	755.00	0.0	0.0	582.00	5500.00	595.53	0.0	595.58	2.16	2.31	3554.35	3744.87
47620.000	755.00	0.0	0.0	582.00	5500.00	595.54	0.0	595.59	2.19	2.33	3438.57	3718.10
48570.000	1010.00	0.0	0.0	582.00	5500.00	595.75	0.0	595.80	2.57	2.56	3949.40	3428.63
48570.000	1010.00	0.0	0.0	582.00	5500.00	595.77	0.0	595.82	2.64	2.59	3797.34	3386.19
48600.000	945.00	0.0	0.0	582.00	5500.00	595.96	0.0	596.46	14.73	6.24	1559.48	1432.81
48600.000	945.00	0.0	0.0	582.00	5500.00	595.99	0.0	596.49	14.61	6.23	1565.87	1439.07
48820.000	425.00	0.0	0.0	581.00	4900.00	596.72	0.0	596.89	4.46	3.31	1479.61	2321.43
48820.000	425.00	0.0	0.0	581.00	4900.00	596.74	0.0	596.91	4.43	3.31	1482.16	2327.60
48821.000	29.40	599.20	595.20	581.00	4900.00	596.91	0.0	597.07	4.26	3.26	1501.71	2375.27
48821.000	29.40	599.20	595.20	581.00	4900.00	596.93	0.0	597.10	4.23	3.26	1504.33	2381.69
48920.000	100.00	0.0	0.0	582.40	4900.00	597.07	0.0	597.13	1.25	2.77	3116.27	4380.42
48920.000	100.00	0.0	0.0	582.40	4900.00	597.09	0.0	597.15	1.24	2.76	3125.13	4398.68

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRTWS	EG	TOK*S	VCH	AREA	.01K
49220.000	250.00	0.0	0.0	581.60	4900.00	597.14	0.0	597.17	1.14	1.79	4076.90	4590.67
49220.000	250.00	0.0	0.0	581.60	4900.00	597.16	0.0	597.19	1.13	1.78	4090.68	4613.60
49870.000	695.00	0.0	0.0	583.60	4900.00	597.23	0.0	597.27	2.06	2.63	5344.37	3415.39
49870.000	695.00	0.0	0.0	583.60	4900.00	597.25	0.0	597.29	2.04	2.62	5360.05	3429.88
51270.000	1965.00	0.0	0.0	583.60	4900.00	597.57	0.0	597.68	2.38	3.36	2195.63	3174.62
51270.000	1965.00	0.0	0.0	583.60	4900.00	597.59	0.0	597.69	2.36	3.35	2202.28	3188.45
51370.000	90.00	0.0	0.0	584.30	4900.00	597.45	0.0	597.86	8.61	5.11	958.13	1669.73
51370.000	90.00	0.0	0.0	584.30	4900.00	597.47	0.0	597.88	8.56	5.10	959.91	1674.55
51371.000	1.00	597.80	598.30	584.30	4900.00	597.46	0.0	597.86	8.61	5.11	958.14	1669.77
51371.000	1.00	597.80	598.30	584.30	4900.00	597.47	0.0	597.88	8.56	5.10	959.95	1674.67
51372.000	18.00	597.80	598.30	584.30	4900.00	597.47	0.0	597.88	8.57	5.11	959.66	1673.89
51372.000	18.00	597.80	598.30	584.30	4900.00	597.49	0.0	597.89	8.52	5.10	961.47	1678.80
51373.000	1.00	0.0	0.0	584.30	4900.00	597.47	0.0	597.88	8.56	5.10	959.88	1674.47
51373.000	1.00	0.0	0.0	584.30	4900.00	597.49	0.0	597.90	8.51	5.10	961.71	1679.44
51470.000	90.00	0.0	0.0	583.50	4900.00	597.95	0.0	598.01	1.21	2.53	2806.67	4454.95
51470.000	90.00	0.0	0.0	583.50	4900.00	597.96	0.0	598.02	1.20	2.52	2812.48	4468.95
52470.000	925.00	0.0	0.0	584.30	4900.00	598.10	0.0	598.16	2.36	2.74	3025.83	3189.69
52470.000	925.00	0.0	0.0	584.30	4900.00	598.12	0.0	598.18	2.34	2.73	3035.56	3203.55
53120.000	650.00	0.0	0.0	584.30	4900.00	597.96	0.0	598.65	17.23	7.73	1308.22	1180.56
53120.000	650.00	0.0	0.0	584.30	4900.00	597.97	0.0	598.67	17.15	7.72	1311.02	1183.18
53270.000	440.00	0.0	0.0	584.60	4050.00	598.97	0.0	599.04	3.49	3.20	4060.18	2169.21
53270.000	440.00	0.0	0.0	584.60	4050.00	598.98	0.0	599.05	3.47	3.19	4066.20	2173.71
54770.000	1270.00	0.0	0.0	584.20	4050.00	599.40	0.0	599.52	3.93	3.59	2209.89	2043.40
54770.000	1270.00	0.0	0.0	584.20	4050.00	599.41	0.0	599.54	4.05	3.64	2140.65	2013.65
55590.000	925.00	0.0	0.0	584.30	4050.00	599.71	0.0	599.79	2.31	3.10	2024.05	2663.12
55590.000	925.00	0.0	0.0	584.30	4050.00	599.73	0.0	599.82	2.29	3.09	2030.20	2675.08
56170.000	840.00	0.0	0.0	585.80	4050.00	599.78	0.0	600.31	15.46	6.62	1185.24	1029.95
56170.000	840.00	0.0	0.0	585.80	4050.00	599.80	0.0	600.33	15.37	6.61	1189.08	1033.18
56270.000	280.00	0.0	0.0	585.90	4050.00	600.50	0.0	600.70	7.08	3.58	1131.79	1522.05
56270.000	280.00	0.0	0.0	585.90	4050.00	600.51	0.0	600.71	7.05	3.57	1133.42	1525.42
56271.000	1.00	602.80	604.20	585.90	4050.00	600.50	0.0	600.70	7.08	3.58	1131.89	1522.25
56271.000	1.00	602.80	604.20	585.90	4050.00	600.51	0.0	600.71	7.05	3.57	1133.47	1525.52
56272.000	18.00	602.80	604.20	585.90	4050.00	600.51	0.0	600.71	7.06	3.57	1133.11	1524.77
56272.000	18.00	602.80	604.20	585.90	4050.00	600.53	0.0	600.72	7.02	3.57	1134.69	1528.04
56273.000	1.00	0.0	0.0	585.90	4050.00	600.51	0.0	600.71	7.05	3.57	1133.20	1524.97
56273.000	1.00	0.0	0.0	585.90	4050.00	600.53	0.0	600.72	7.02	3.57	1134.79	1528.24

MOORE BUSINESS FORMS INC 27

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
14520.000	5500.00	590.40	0.0	0.0	0.0	788.39	0.0
14520.000	5500.00	590.40	0.0	0.0	0.0	788.39	0.0
17540.000	5500.00	590.74	0.0	0.34	0.0	839.44	3050.00
17540.000	5500.00	590.74	0.0	0.34	0.0	807.58	3050.00
19335.000	5500.00	591.10	0.0	0.36	0.0	779.66	1875.00
19335.000	5500.00	591.10	0.0	0.36	0.0	394.01	1875.00
21420.000	5500.00	591.90	0.0	0.80	0.0	626.40	2095.00
21420.000	5500.00	591.91	0.01	0.81	0.01	576.34	2095.00
22680.000	5500.00	592.10	0.0	0.20	0.0	300.00	1280.00
22680.000	5500.00	592.11	0.01	0.20	0.01	300.00	1280.00
22870.000	5500.00	592.08	0.0	-0.02	0.0	161.00	245.00
22870.000	5500.00	592.09	0.01	-0.02	0.01	161.00	245.00
22871.000	5500.00	592.09	0.0	0.01	0.0	161.00	31.00
22871.000	5500.00	592.10	0.01	0.01	0.01	161.00	31.00
23000.000	5500.00	592.07	0.0	-0.02	0.0	131.89	100.00
23000.000	5500.00	592.08	0.01	-0.02	0.01	131.95	100.00
23001.000	5500.00	592.13	0.0	0.06	0.0	132.25	14.50
23001.000	5500.00	592.14	0.01	0.06	0.01	132.30	14.50
23285.000	5500.00	592.45	0.0	0.32	0.0	597.82	280.00
23285.000	5500.00	592.45	0.01	0.32	0.01	598.05	280.00
25000.000	5500.00	592.67	0.0	0.23	0.0	906.73	1750.00
25000.000	5500.00	592.68	0.01	0.23	0.01	909.01	1750.00
25800.000	5500.00	592.74	0.0	0.07	0.0	881.86	1160.00
25800.000	5500.00	592.75	0.01	0.07	0.01	881.88	1160.00
25900.000	5500.00	592.75	0.0	0.01	0.0	944.78	90.00
25900.000	5500.00	592.76	0.01	0.01	0.01	944.84	90.00
25901.000	5500.00	592.75	0.0	-0.00	0.0	944.80	1.00
25901.000	5500.00	592.76	0.01	-0.00	0.01	944.86	1.00
25902.000	5500.00	592.75	0.0	0.00	0.0	944.80	12.50
25902.000	5500.00	592.76	0.01	0.00	0.01	944.86	12.50
25903.000	5500.00	592.75	0.0	0.00	0.0	944.80	1.00
25903.000	5500.00	592.76	0.01	0.00	0.01	944.86	1.00
26000.000	5500.00	592.76	0.0	0.01	0.0	977.02	80.00
26000.000	5500.00	592.77	0.01	0.01	0.01	950.00	80.00
26320.000	5500.00	592.77	0.0	0.01	0.0	1049.38	290.00
26320.000	5500.00	592.77	0.01	0.01	0.01	1050.65	290.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
26720.000	5500.00	592.78	0.0	0.01	0.0	1116.12	465.00
26720.000	5500.00	592.79	0.01	0.01	0.01	1117.45	465.00
26721.000	5500.00	592.78	0.0	-0.00	0.0	1116.17	1.00
26721.000	5500.00	592.78	0.01	-0.00	0.01	1117.49	1.00
26722.000	5500.00	592.78	0.0	0.00	0.0	1116.12	20.00
26722.000	5500.00	592.79	0.01	0.00	0.01	1117.40	20.00
26723.000	5500.00	592.78	0.0	0.00	0.0	1116.12	1.00
26723.000	5500.00	592.79	0.01	0.00	0.01	1117.40	1.00
26820.000	5500.00	592.78	0.0	0.00	0.0	973.44	85.00
26820.000	5500.00	592.79	0.01	0.00	0.01	974.05	85.00
27920.000	5500.00	592.81	0.0	0.03	0.0	764.08	1385.00
27920.000	5500.00	592.82	0.01	0.03	0.01	764.17	1385.00
29520.000	5500.00	592.91	0.0	0.10	0.0	556.35	1545.00
29520.000	5500.00	592.92	0.01	0.10	0.01	540.00	1545.00
29920.000	5500.00	592.93	0.0	0.02	0.0	154.80	480.00
29920.000	5500.00	592.94	0.01	0.02	0.01	154.80	480.00
29921.000	5500.00	592.93	0.0	0.00	0.0	154.80	105.40
29921.000	5500.00	592.94	0.01	0.00	0.01	154.80	105.40
30200.000	5500.00	593.07	0.0	0.14	0.0	600.00	185.00
30200.000	5500.00	593.08	0.01	0.14	0.01	600.00	185.00
30920.000	5500.00	593.09	0.0	0.01	0.0	849.71	500.00
30920.000	5500.00	593.09	0.01	0.01	0.01	765.00	500.00
31720.000	5500.00	593.11	0.0	0.02	0.0	552.80	1100.00
31720.000	5500.00	593.12	0.01	0.02	0.01	515.04	1100.00
33120.000	5500.00	593.25	0.0	0.15	0.0	596.35	1405.00
33120.000	5500.00	593.26	0.01	0.15	0.01	545.00	1405.00
34720.000	5500.00	593.33	0.0	0.08	0.0	750.00	1385.00
34720.000	5500.00	593.34	0.01	0.08	0.01	750.00	1385.00
35720.000	5500.00	593.39	0.0	0.05	0.0	959.95	995.00
35720.000	5500.00	593.39	0.01	0.05	0.01	936.66	995.00
36450.000	5500.00	593.40	0.0	0.01	0.0	704.65	735.00
36450.000	5500.00	593.40	0.01	0.01	0.01	704.80	735.00
36550.000	5500.00	593.40	0.0	0.00	0.0	596.72	75.00
36550.000	5500.00	593.41	0.01	0.00	0.01	582.85	75.00
36551.000	5500.00	593.40	0.0	0.00	0.0	596.74	7.70
36551.000	5500.00	593.41	0.01	0.00	0.01	582.86	7.70
36800.000	5500.00	593.40	0.0	-0.00	0.0	545.13	180.00
36800.000	5500.00	593.40	0.01	-0.00	0.01	526.04	180.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
37000.000	5500.00	593.45	0.0	0.05	0.0	477.72	230.00
37000.000	5500.00	593.46	0.01	0.05	0.01	470.03	230.00
37001.000	5500.00	593.45	0.0	0.00	0.0	477.74	7.70
37001.000	5500.00	593.46	0.01	0.00	0.01	470.04	7.70
37220.000	5500.00	593.45	0.0	0.00	0.0	454.59	110.00
37220.000	5500.00	593.46	0.01	0.00	0.01	454.66	110.00
37320.000	5500.00	593.41	0.0	-0.04	0.0	121.86	195.00
37320.000	5500.00	593.42	0.01	-0.04	0.01	121.86	195.00
37321.000	5500.00	593.41	0.0	0.00	0.0	121.86	1.00
37321.000	5500.00	593.42	0.01	0.00	0.01	121.86	1.00
37322.000	5500.00	593.43	0.0	0.02	0.0	121.86	19.00
37322.000	5500.00	593.44	0.01	0.02	0.01	121.86	19.00
37323.000	5500.00	593.44	0.0	0.00	0.0	121.86	1.00
37323.000	5500.00	593.44	0.01	0.00	0.01	121.86	1.00
37820.000	5500.00	593.79	0.0	0.36	0.0	1034.30	450.00
37820.000	5500.00	593.80	0.01	0.36	0.01	850.00	450.00
39020.000	5500.00	593.86	0.0	0.07	0.0	585.00	960.00
39020.000	5500.00	593.87	0.01	0.07	0.01	585.00	960.00
44520.000	5500.00	593.95	0.0	0.10	0.0	844.33	1705.00
44520.000	5500.00	593.97	0.01	0.10	0.01	800.00	1705.00
45000.000	5500.00	594.04	0.0	0.09	0.0	620.22	1205.00
45000.000	5500.00	594.06	0.02	0.09	0.02	605.00	1205.00
45520.000	5500.00	595.12	0.0	1.08	0.0	393.05	1130.00
45520.000	5500.00	595.14	0.01	1.08	0.01	376.22	1130.00
46870.000	5500.00	595.47	0.0	0.35	0.0	720.32	1415.00
46870.000	5500.00	595.48	0.01	0.35	0.01	700.00	1415.00
47620.000	5500.00	595.53	0.0	0.06	0.0	580.02	755.00
47620.000	5500.00	595.54	0.01	0.06	0.01	530.00	755.00
48570.000	5500.00	595.75	0.0	0.22	0.0	609.06	1010.00
48570.000	5500.00	595.77	0.02	0.22	0.02	540.00	1010.00
48600.000	5500.00	595.96	0.0	0.21	0.0	229.51	945.00
48600.000	5500.00	595.99	0.03	0.22	0.03	229.93	945.00
48820.000	4900.00	596.72	0.0	0.76	0.0	115.70	425.00
48820.000	4900.00	596.74	0.02	0.75	0.02	115.70	425.00
48821.000	4900.00	596.91	0.0	0.19	0.0	115.70	29.40
48821.000	4900.00	596.93	0.02	0.19	0.02	115.70	29.40
48920.000	4900.00	597.07	0.0	0.16	0.0	390.00	100.00
48920.000	4900.00	597.09	0.02	0.16	0.02	390.00	100.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
49220.000	4900.00	597.14	0.0	0.07	0.0	619.95	250.00
49220.000	4900.00	597.16	0.02	0.07	0.02	620.25	250.00
49870.000	4900.00	597.23	0.0	0.09	0.0	730.00	695.00
49870.000	4900.00	597.25	0.02	0.09	0.02	730.00	695.00
51270.000	4900.00	597.57	0.0	0.34	0.0	350.00	1965.00
51270.000	4900.00	597.59	0.02	0.34	0.02	350.00	1965.00
51370.000	4900.00	597.45	0.0	-0.11	0.0	97.50	90.00
51370.000	4900.00	597.47	0.02	-0.11	0.02	97.50	90.00
51371.000	4900.00	597.46	0.0	0.00	0.0	97.50	1.00
51371.000	4900.00	597.47	0.02	0.00	0.02	97.50	1.00
51372.000	4900.00	597.47	0.0	0.02	0.0	97.50	18.00
51372.000	4900.00	597.49	0.02	0.02	0.02	97.50	18.00
51373.000	4900.00	597.47	0.0	0.00	0.0	97.50	1.00
51373.000	4900.00	597.49	0.02	0.00	0.02	97.50	1.00
51470.000	4900.00	597.95	0.0	0.47	0.0	350.00	90.00
51470.000	4900.00	597.96	0.02	0.47	0.02	350.00	90.00
52470.000	4900.00	598.10	0.0	0.16	0.0	603.55	925.00
52470.000	4900.00	598.12	0.02	0.16	0.02	604.16	925.00
53120.000	4900.00	597.96	0.0	-0.15	0.0	194.34	650.00
53120.000	4900.00	597.97	0.01	-0.15	0.01	194.56	650.00
53270.000	4050.00	598.97	0.0	1.01	0.0	560.00	440.00
53270.000	4050.00	598.98	0.01	1.01	0.01	560.00	440.00
54770.000	4050.00	599.40	0.0	0.43	0.0	396.98	1270.00
54770.000	4050.00	599.41	0.01	0.44	0.01	360.00	1270.00
55590.000	4050.00	599.71	0.0	0.31	0.0	289.26	925.00
55590.000	4050.00	599.73	0.02	0.32	0.02	289.31	925.00
56170.000	4050.00	599.78	0.0	0.06	0.0	195.00	840.00
56170.000	4050.00	599.80	0.02	0.06	0.02	195.00	840.00
56270.000	4050.00	600.50	0.0	0.72	0.0	99.68	280.00
56270.000	4050.00	600.51	0.02	0.72	0.02	99.68	280.00
56271.000	4050.00	600.50	0.0	0.00	0.0	99.68	1.00
56271.000	4050.00	600.51	0.02	0.00	0.02	99.68	1.00
56272.000	4050.00	600.51	0.0	0.01	0.0	99.68	18.00
56272.000	4050.00	600.53	0.02	0.01	0.02	99.68	18.00
56273.000	4050.00	600.51	0.0	0.00	0.0	99.68	1.00
56273.000	4050.00	600.53	0.02	0.00	0.02	99.68	1.00

SUMMARY OF ERRORS

MOORE BUSINESS FORMS INC 27

FLOODWAY DATA, SWAN CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
14520.000	788.	5841.	0.9	590.4	590.4	0.0
17540.000	808.	4695.	1.2	590.7	590.7	0.0
19335.000	394.	2249.	2.4	591.1	591.1	0.0
21420.000	576.	3899.	1.4	591.9	591.9	0.0
22680.000	300.	3423.	1.6	592.1	592.1	0.0
22870.000	161.	1731.	3.2	592.1	592.1	0.0
22871.000	161.	1732.	3.2	592.1	592.1	0.0
23000.000	132.	1360.	4.0	592.1	592.1	0.0
23001.000	132.	1368.	4.0	592.1	592.1	0.0
23285.000	598.	4375.	1.3	592.4	592.4	0.0
25000.000	909.	6023.	0.9	592.7	592.7	0.0
25800.000	882.	5911.	0.9	592.7	592.7	0.0
25900.000	945.	5571.	1.0	592.8	592.8	0.0
25901.000	945.	5451.	1.0	592.8	592.8	0.0
25902.000	945.	5451.	1.0	592.8	592.8	0.0
25903.000	945.	5573.	1.0	592.8	592.8	0.0
26000.000	950.	6220.	0.9	592.8	592.8	0.0
26320.000	1051.	7034.	0.8	592.8	592.8	0.0
26720.000	1117.	7284.	0.8	592.8	592.8	0.0
26721.000	1117.	7215.	0.8	592.8	592.8	0.0
26722.000	1117.	7214.	0.8	592.8	592.8	0.0
26723.000	1117.	7284.	0.8	592.8	592.8	0.0
26820.000	974.	6980.	0.8	592.8	592.8	0.0
27920.000	764.	6377.	0.9	592.8	592.8	0.0
29520.000	540.	4710.	1.2	592.9	592.9	0.0
29920.000	155.	1994.	2.8	592.9	592.9	0.0
29921.000	155.	1994.	2.8	592.9	592.9	0.0
30200.000	600.	5033.	1.1	593.1	593.1	0.0
30920.000	765.	5374.	1.0	593.1	593.1	0.0
31720.000	515.	4330.	1.3	593.1	593.1	0.0
33120.000	545.	4509.	1.2	593.3	593.3	0.0
34720.000	750.	5554.	1.0	593.3	593.3	0.0
35720.000	937.	6433.	0.9	593.4	593.4	0.0
36450.000	705.	4332.	1.3	593.4	593.4	0.0
36550.000	583.	3584.	1.5	593.4	593.4	0.0
36551.000	583.	3584.	1.5	593.4	593.4	0.0
36800.000	526.	3144.	1.7	593.4	593.4	0.0
37000.000	470.	3308.	1.7	593.4	593.4	0.0
37001.000	470.	3309.	1.7	593.5	593.5	0.0
37220.000	455.	3475.	1.6	593.5	593.5	0.0
37320.000	122.	1426.	3.9	593.4	593.4	0.0
37321.000	122.	1426.	3.9	593.4	593.4	0.0
37322.000	122.	1428.	3.9	593.4	593.4	0.0
37323.000	122.	1429.	3.8	593.4	593.4	0.0
37820.000	850.	6796.	0.8	593.8	593.8	0.0
39020.000	585.	4732.	1.2	593.9	593.9	0.0
44520.000	800.	4734.	1.2	594.0	594.0	0.0
45000.000	605.	2731.	2.0	594.0	594.0	0.0
45520.000	377.	2045.	2.7	595.1	595.1	0.0
46870.000	700.	5771.	1.0	595.5	595.5	0.0

FLOODWAY DATA, SWAN CREEK
PROFILE NO. 2

STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
47620.000	530.	3439.	1.6	595.5	595.5	0.0
48570.000	540.	3797.	1.4	595.7	595.7	0.0
48600.000	230.	1566.	3.5	596.0	596.0	0.0
48820.000	116.	1482.	3.3	596.7	596.7	0.0
48821.000	116.	1504.	3.3	596.9	596.9	0.0
48920.000	390.	3125.	1.6	597.1	597.1	0.0
49220.000	620.	4091.	1.2	597.1	597.1	0.0
49870.000	730.	5360.	0.9	597.2	597.2	0.0
51270.000	350.	2202.	2.2	597.6	597.6	0.0
51370.000	98.	960.	5.1	597.5	597.5	0.0
51371.000	98.	960.	5.1	597.5	597.5	0.0
51372.000	98.	961.	5.1	597.5	597.5	0.0
51373.000	98.	962.	5.1	597.5	597.5	0.0
51470.000	350.	2812.	1.7	597.9	597.9	0.0
52470.000	630.	3036.	1.6	598.1	598.1	0.0
53120.000	195.	1311.	3.7	598.0	598.0	0.0
53270.000	560.	4066.	1.0	599.0	599.0	0.0
54770.000	360.	2141.	1.9	599.4	599.4	0.0
55590.000	289.	2030.	2.0	599.7	599.7	0.0
56170.000	195.	1189.	3.4	599.8	599.8	0.0
56270.000	100.	1133.	3.6	600.5	600.5	0.0
56271.000	100.	1133.	3.6	600.5	600.5	0.0
56272.000	100.	1135.	3.6	600.5	600.5	0.0
56273.000	100.	1135.	3.6	600.5	600.5	0.0

MOORE BUSINESS FORMS INC 27

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOK*S	VCH	AREA	.01K
14520.000	0.0	0.0	0.0	574.50	3700.00	587.65	0.0	587.69	1.14	1.68	3848.20	3461.38
14520.000	0.0	0.0	0.0	574.50	5200.00	589.60	0.0	589.64	1.09	1.84	5235.76	4980.81
14520.000	0.0	0.0	0.0	574.50	5500.00	590.40	0.0	590.44	0.93	1.78	5841.05	5688.88
14520.000	0.0	0.0	0.0	574.50	5900.00	592.70	0.0	592.72	0.54	1.50	7908.32	8036.98
17540.000	3050.00	0.0	0.0	574.90	3700.00	588.07	0.0	588.13	1.89	2.16	3052.85	2694.22
17540.000	3050.00	0.0	0.0	574.90	5200.00	590.00	0.0	590.06	1.80	2.36	4188.20	3871.71
17540.000	3050.00	0.0	0.0	574.90	5500.00	590.74	0.0	590.80	1.56	2.29	4730.64	4400.42
17540.000	3050.00	0.0	0.0	574.90	5900.00	592.89	0.0	592.93	0.88	1.90	7223.58	6285.07
19335.000	1875.00	0.0	0.0	575.40	3700.00	588.54	0.0	588.77	7.13	4.17	1444.33	1385.18
19335.000	1875.00	0.0	0.0	575.40	5200.00	590.42	0.0	590.69	7.12	4.65	2005.78	1948.44
19335.000	1875.00	0.0	0.0	575.40	5500.00	591.10	0.0	591.34	6.24	4.51	2432.20	2201.73
19335.000	1875.00	0.0	0.0	575.40	5900.00	593.09	0.0	593.21	3.18	3.54	4621.08	3307.74
21420.000	2095.00	0.0	0.0	575.70	3700.00	589.40	0.0	589.47	1.92	2.25	2576.96	2673.68
21420.000	2095.00	0.0	0.0	575.70	5200.00	591.31	0.0	591.39	1.93	2.51	3602.31	3740.77
21420.000	2095.00	0.0	0.0	575.70	5500.00	591.90	0.0	591.98	1.78	2.48	3966.29	4126.84
21420.000	2095.00	0.0	0.0	575.70	5900.00	593.54	0.0	593.60	1.23	2.23	5071.64	5313.02
22680.000	1280.00	0.0	0.0	575.80	3700.00	589.61	0.0	589.65	0.93	1.58	2685.02	3838.47
22680.000	1280.00	0.0	0.0	575.80	5200.00	591.53	0.0	591.58	1.06	1.88	3248.50	5050.31
22680.000	1280.00	0.0	0.0	575.80	5500.00	592.10	0.0	592.15	1.02	1.90	3420.48	5440.43
22680.000	1280.00	0.0	0.0	575.80	5900.00	593.68	0.0	593.73	0.80	1.81	3895.69	6580.36
22870.000	245.00	0.0	0.0	577.50	3700.00	589.60	0.0	589.72	1.78	2.76	1339.29	2774.26
22870.000	245.00	0.0	0.0	577.50	5200.00	591.51	0.0	591.66	1.96	3.18	1637.29	3710.46
22870.000	245.00	0.0	0.0	577.50	5500.00	592.08	0.0	592.24	1.86	3.18	1729.12	4033.08
22870.000	245.00	0.0	0.0	577.50	5900.00	593.66	0.0	593.80	1.39	2.97	1984.14	5010.13
22871.000	31.00	595.10	593.60	577.50	3700.00	589.60	0.0	589.72	1.78	2.76	1340.28	2777.17
22871.000	31.00	595.10	593.60	577.50	5200.00	591.52	0.0	591.67	1.96	3.17	1638.70	3715.16
22871.000	31.00	595.10	593.60	577.50	5500.00	592.09	0.0	592.25	1.85	3.18	1730.61	4038.61
22871.000	31.00	595.10	593.60	577.50	5900.00	593.80	0.0	593.93	1.34	2.94	2006.18	5097.84
23000.000	100.00	0.0	0.0	577.20	3700.00	589.60	0.0	589.79	6.72	3.53	1048.56	1427.14
23000.000	100.00	0.0	0.0	577.20	5200.00	591.50	0.0	591.76	7.37	4.05	1284.70	1916.07
23000.000	100.00	0.0	0.0	577.20	5500.00	592.07	0.0	592.33	7.09	4.05	1358.91	2065.23
23000.000	100.00	0.0	0.0	577.20	5900.00	593.78	0.0	594.00	5.33	3.70	1594.08	2555.57

MOORE BUSINESS FORMS INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
23001.000	14.50	599.50	596.90	577.20	3700.00	589.64	0.0	589.83	6.62	3.51	1053.78	1437.71
23001.000	14.50	599.50	596.90	577.20	5200.00	591.56	0.0	591.81	7.25	4.02	1292.11	1930.83
23001.000	14.50	599.50	596.90	577.20	5500.00	592.13	0.0	592.38	6.99	4.03	1366.32	2080.29
23001.000	14.50	599.50	596.90	577.20	5900.00	593.83	0.0	594.04	5.28	3.69	1600.00	2568.25
23285.000	280.00	0.0	0.0	576.40	3700.00	589.90	0.0	589.95	1.56	2.02	2928.71	2964.35
23285.000	280.00	0.0	0.0	576.40	5200.00	591.88	0.0	591.95	1.58	2.27	4035.76	4142.53
23285.000	280.00	0.0	0.0	576.40	5500.00	592.45	0.0	592.51	1.48	2.26	4369.73	4520.07
23285.000	280.00	0.0	0.0	576.40	5900.00	594.09	0.0	594.14	1.07	2.08	5354.75	5709.88
25000.000	1750.00	0.0	0.0	576.40	3700.00	590.14	0.0	590.16	0.99	1.73	4200.69	3720.48
25000.000	1750.00	0.0	0.0	576.40	5200.00	592.12	0.0	592.15	0.91	1.86	5560.01	5443.48
25000.000	1750.00	0.0	0.0	576.40	5500.00	592.67	0.0	592.70	0.84	1.83	6016.04	5993.38
25000.000	1750.00	0.0	0.0	576.40	5900.00	594.25	0.0	594.27	0.57	1.62	7790.57	7820.26
25800.000	1160.00	0.0	0.0	577.80	3700.00	590.22	0.0	590.25	0.59	1.57	3847.77	4835.25
25800.000	1160.00	0.0	0.0	577.80	5200.00	592.20	0.0	592.22	0.48	1.60	5425.28	7470.58
25800.000	1160.00	0.0	0.0	577.80	5500.00	592.74	0.0	592.77	0.44	1.56	5904.41	8332.19
25800.000	1160.00	0.0	0.0	577.80	5900.00	594.30	0.0	594.32	0.28	1.36	7279.32	11067.62
25900.000	90.00	0.0	0.0	577.60	3700.00	590.23	0.0	590.25	0.51	1.49	3448.30	5164.75
25900.000	90.00	0.0	0.0	577.60	5200.00	592.21	0.0	592.23	0.36	1.40	5049.33	8636.47
25900.000	90.00	0.0	0.0	577.60	5500.00	592.75	0.0	592.77	0.31	1.34	5563.52	9829.08
25900.000	90.00	0.0	0.0	577.60	5900.00	594.31	0.0	594.32	0.19	1.11	7040.19	13707.35
25901.000	1.00	583.10	586.20	577.60	3700.00	590.23	0.0	590.25	0.87	0.88	3327.64	3964.49
25901.000	1.00	583.10	586.20	577.60	5200.00	592.21	0.0	592.23	0.55	0.79	4929.64	7043.56
25901.000	1.00	583.10	586.20	577.60	5500.00	592.75	0.0	592.77	0.46	0.74	5443.84	8120.03
25901.000	1.00	583.10	586.20	577.60	5900.00	594.30	0.0	594.32	0.26	0.60	6920.08	11648.67
25902.000	12.50	583.10	586.20	577.60	3700.00	590.23	0.0	590.25	0.87	0.88	3327.64	3964.49
25902.000	12.50	583.10	586.20	577.60	5200.00	592.21	0.0	592.23	0.55	0.79	4929.41	7043.10
25902.000	12.50	583.10	586.20	577.60	5500.00	592.75	0.0	592.77	0.46	0.74	5443.38	8119.03
25902.000	12.50	583.10	586.20	577.60	5900.00	594.31	0.0	594.32	0.26	0.60	6919.61	11647.46
25903.000	1.00	0.0	0.0	577.60	3700.00	590.23	0.0	590.25	0.51	1.49	3450.27	5168.75
25903.000	1.00	0.0	0.0	577.60	5200.00	592.21	0.0	592.23	0.36	1.40	5051.86	8642.10
25903.000	1.00	0.0	0.0	577.60	5500.00	592.75	0.0	592.77	0.31	1.34	5566.05	9835.17
25903.000	1.00	0.0	0.0	577.60	5900.00	594.31	0.0	594.32	0.19	1.11	7042.06	13712.65
26000.000	80.00	0.0	0.0	578.00	3700.00	590.24	0.0	590.26	0.37	1.22	3942.01	6072.44
26000.000	80.00	0.0	0.0	578.00	5200.00	592.22	0.0	592.23	0.27	1.16	5717.29	10042.60
26000.000	80.00	0.0	0.0	578.00	5500.00	592.76	0.0	592.77	0.23	1.12	6246.35	11383.87
26000.000	80.00	0.0	0.0	578.00	5900.00	594.31	0.0	594.32	0.14	0.94	7789.05	15683.55
26320.000	290.00	0.0	0.0	578.00	3700.00	590.25	0.0	590.26	0.31	0.97	4720.09	6601.26
26320.000	290.00	0.0	0.0	578.00	5200.00	592.22	0.0	592.23	0.24	0.96	6480.49	10532.48
26320.000	290.00	0.0	0.0	578.00	5500.00	592.77	0.0	592.78	0.22	0.93	7025.86	11798.53
26320.000	290.00	0.0	0.0	578.00	5900.00	594.31	0.0	594.32	0.14	0.80	8726.53	15912.16
26720.000	465.00	0.0	0.0	577.40	3700.00	590.27	0.0	590.28	0.37	0.71	4826.84	6116.37
26720.000	465.00	0.0	0.0	577.40	5200.00	592.24	0.0	592.25	0.26	0.67	6696.77	10126.81
26720.000	465.00	0.0	0.0	577.40	5500.00	592.78	0.0	592.79	0.23	0.65	7276.00	11424.32
26720.000	465.00	0.0	0.0	577.40	5900.00	594.32	0.0	594.33	0.14	0.55	9073.55	15654.41

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOK*S	VCH	AREA	.01K
26721.000	1.00	584.50	591.90	577.40	3700.00	590.27	0.0	590.28	0.42	0.47	4791.68	5725.06
26721.000	1.00	584.50	591.90	577.40	5200.00	592.24	0.0	592.25	0.30	0.36	6627.37	9447.68
26721.000	1.00	584.50	591.90	577.40	5500.00	592.78	0.0	592.79	0.26	0.34	7206.37	10699.03
26721.000	1.00	584.50	591.90	577.40	5900.00	594.32	0.0	594.33	0.16	0.29	9004.21	14793.53
26722.000	20.00	584.50	591.90	577.40	3700.00	590.27	0.0	590.28	0.42	0.47	4791.88	5725.46
26722.000	20.00	584.50	591.90	577.40	5200.00	592.24	0.0	592.25	0.30	0.36	6626.62	9446.05
26722.000	20.00	584.50	591.90	577.40	5500.00	592.78	0.0	592.79	0.26	0.34	7206.09	10698.44
26722.000	20.00	584.50	591.90	577.40	5900.00	594.32	0.0	594.33	0.16	0.29	9003.64	14792.12
26723.000	1.00	0.0	0.0	577.40	3700.00	590.27	0.0	590.28	0.37	0.71	4827.06	6116.81
26723.000	1.00	0.0	0.0	577.40	5200.00	592.24	0.0	592.25	0.26	0.67	6696.52	10126.24
26723.000	1.00	0.0	0.0	577.40	5500.00	592.78	0.0	592.79	0.23	0.65	7275.00	11424.32
26723.000	1.00	0.0	0.0	577.40	5900.00	594.32	0.0	594.33	0.14	0.55	9073.55	15654.41
26820.000	85.00	0.0	0.0	576.80	3700.00	590.27	0.0	590.28	0.34	1.09	4688.51	6320.50
26820.000	85.00	0.0	0.0	576.80	5200.00	592.24	0.0	592.25	0.26	1.05	6457.69	10259.54
26820.000	85.00	0.0	0.0	576.80	5500.00	592.78	0.0	592.79	0.23	1.01	6972.90	11511.73
26820.000	85.00	0.0	0.0	576.80	5900.00	594.32	0.0	594.33	0.14	0.87	8570.80	15504.23
27920.000	1385.00	0.0	0.0	577.50	3700.00	590.32	0.0	590.34	0.68	1.50	4552.15	4502.59
27920.000	1385.00	0.0	0.0	577.50	5200.00	592.27	0.0	592.30	0.61	1.59	5964.30	6656.66
27920.000	1385.00	0.0	0.0	577.50	5500.00	592.81	0.0	592.84	0.56	1.57	6371.17	7334.20
27920.000	1385.00	0.0	0.0	577.50	5900.00	594.34	0.0	594.36	0.39	1.40	7543.29	9446.14
29520.000	1545.00	0.0	0.0	578.30	3700.00	590.44	0.0	590.48	1.26	2.05	3388.07	3300.45
29520.000	1545.00	0.0	0.0	578.30	5200.00	592.38	0.0	592.42	1.15	2.19	4424.80	4840.68
29520.000	1545.00	0.0	0.0	578.30	5500.00	592.91	0.0	592.95	1.07	2.17	4717.11	5316.55
29520.000	1545.00	0.0	0.0	578.30	5900.00	594.41	0.0	594.44	0.76	1.95	5565.43	6786.45
29920.000	480.00	0.0	0.0	577.00	3700.00	590.48	0.0	590.57	1.82	2.29	1613.23	2745.98
29920.000	480.00	0.0	0.0	577.00	5200.00	592.41	0.0	592.52	2.10	2.72	1912.89	3591.60
29920.000	480.00	0.0	0.0	577.00	5500.00	592.93	0.0	593.05	2.06	2.76	1993.33	3831.10
29920.000	480.00	0.0	0.0	577.00	5900.00	594.42	0.0	594.53	1.69	2.65	2223.34	4542.91
29921.000	105.40	602.00	598.50	577.00	3700.00	590.49	0.0	590.57	1.81	2.29	1613.57	2746.90
29921.000	105.40	602.00	598.50	577.00	5200.00	592.41	0.0	592.53	2.10	2.72	1911.76	3588.26
29921.000	105.40	602.00	598.50	577.00	5500.00	592.93	0.0	593.05	2.06	2.76	1992.71	3829.22
29921.000	105.40	602.00	598.50	577.00	5900.00	594.42	0.0	594.53	1.69	2.65	2222.34	4539.72
30200.000	185.00	0.0	0.0	578.30	3700.00	590.58	0.0	590.60	0.37	1.50	3538.06	6063.35
30200.000	185.00	0.0	0.0	578.30	5200.00	592.54	0.0	592.57	0.32	1.54	4712.07	9256.59
30200.000	185.00	0.0	0.0	578.30	5500.00	593.07	0.0	593.09	0.29	1.52	5028.62	10223.75
30200.000	185.00	0.0	0.0	578.30	5900.00	594.55	0.0	594.56	0.20	1.36	5912.95	13148.66
30920.000	500.00	0.0	0.0	578.10	3700.00	590.59	0.0	590.62	0.42	1.60	3537.78	5703.48
30920.000	500.00	0.0	0.0	578.10	5200.00	592.56	0.0	592.58	0.34	1.61	5038.82	8862.69
30920.000	500.00	0.0	0.0	578.10	5500.00	593.09	0.0	593.11	0.31	1.57	5478.27	9881.91
30920.000	500.00	0.0	0.0	578.10	5900.00	594.56	0.0	594.57	0.20	1.36	6787.89	13090.03
31720.000	1100.00	0.0	0.0	578.10	3700.00	590.64	0.0	590.70	1.19	2.21	3080.18	3391.47
31720.000	1100.00	0.0	0.0	578.10	5200.00	592.59	0.0	592.66	1.19	2.48	4070.43	4764.44
31720.000	1100.00	0.0	0.0	578.10	5500.00	593.11	0.0	593.18	1.13	2.48	4352.82	5173.18
31720.000	1100.00	0.0	0.0	578.10	5900.00	594.57	0.0	594.63	0.84	2.30	5193.39	6424.14

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
33120.000	1405.00	0.0	0.0	578.10	3700.00	590.79	0.0	590.82	0.63	1.69	3171.62	4666.42
33120.000	1405.00	0.0	0.0	578.10	5200.00	592.74	0.0	592.77	0.52	1.71	4261.00	7181.89
33120.000	1405.00	0.0	0.0	578.10	5500.00	593.25	0.0	593.28	0.48	1.68	4563.61	7936.63
33120.000	1405.00	0.0	0.0	578.10	5900.00	594.68	0.0	594.70	0.33	1.50	5436.51	10220.98
34720.000	1385.00	0.0	0.0	577.10	3700.00	590.90	0.0	590.93	1.02	2.16	3756.44	3657.02
34720.000	1385.00	0.0	0.0	577.10	5200.00	592.83	0.0	592.86	0.83	2.17	5168.79	5705.54
34720.000	1385.00	0.0	0.0	577.10	5500.00	593.33	0.0	593.36	0.75	2.11	5549.10	6363.57
34720.000	1385.00	0.0	0.0	577.10	5900.00	594.73	0.0	594.75	0.50	1.84	6597.02	8373.31
35720.000	995.00	0.0	0.0	577.70	3700.00	590.97	0.0	590.98	0.38	1.37	4271.71	5966.82
35720.000	995.00	0.0	0.0	577.70	5200.00	592.88	0.0	592.90	0.28	1.30	6019.38	9751.53
35720.000	995.00	0.0	0.0	577.70	5500.00	593.39	0.0	593.40	0.25	1.26	6496.45	10915.43
35720.000	995.00	0.0	0.0	577.70	5900.00	594.77	0.0	594.78	0.17	1.08	7848.43	14465.16
36450.000	735.00	0.0	0.0	577.70	3700.00	590.99	0.0	591.02	0.80	1.96	2707.69	4131.98
36450.000	735.00	0.0	0.0	577.70	5200.00	592.90	0.0	592.92	0.56	1.80	3977.46	6969.87
36450.000	735.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.42	0.49	1.73	4326.79	7865.46
36450.000	735.00	0.0	0.0	577.70	5900.00	594.77	0.0	594.79	0.31	1.46	5323.48	10642.16
36550.000	75.00	0.0	0.0	577.20	3700.00	591.00	0.0	591.04	2.77	1.90	2235.22	2222.81
36550.000	75.00	0.0	0.0	577.20	5200.00	592.90	0.0	592.94	1.78	1.68	3294.88	3892.62
36550.000	75.00	0.0	0.0	577.20	5500.00	593.40	0.0	593.44	1.55	1.60	3589.53	4424.71
36550.000	75.00	0.0	0.0	577.20	5900.00	594.77	0.0	594.80	0.94	1.33	4435.30	6074.72
36551.000	7.70	0.0	0.0	577.20	3700.00	591.00	0.0	591.04	2.76	1.90	2237.89	2226.48
36551.000	7.70	0.0	0.0	577.20	5200.00	592.90	0.0	592.94	1.78	1.67	3295.59	3893.88
36551.000	7.70	0.0	0.0	577.20	5500.00	593.40	0.0	593.44	1.54	1.60	3589.97	4425.52
36551.000	7.70	0.0	0.0	577.20	5900.00	594.77	0.0	594.80	0.94	1.33	4434.83	6073.77
36800.000	180.00	0.0	0.0	577.70	3700.00	590.99	0.0	591.10	2.13	3.16	1931.45	2532.76
36800.000	180.00	0.0	0.0	577.70	5200.00	592.90	0.0	592.98	1.57	2.99	2885.21	4155.23
36800.000	180.00	0.0	0.0	577.70	5500.00	593.40	0.0	593.47	1.39	2.89	3153.54	4669.93
36800.000	180.00	0.0	0.0	577.70	5900.00	594.77	0.0	594.82	0.88	2.45	3935.56	6278.46
37000.000	230.00	0.0	0.0	578.10	3700.00	591.09	0.0	591.14	1.33	1.38	2242.36	3203.50
37000.000	230.00	0.0	0.0	578.10	5200.00	592.96	0.0	593.01	1.03	1.34	3078.60	5135.30
37000.000	230.00	0.0	0.0	578.10	5500.00	593.45	0.0	593.50	0.92	1.30	3309.64	5729.16
37000.000	230.00	0.0	0.0	578.10	5900.00	594.80	0.0	594.84	0.61	1.13	3971.81	7543.67
37001.000	7.70	0.0	0.0	578.10	3700.00	591.09	0.0	591.14	1.33	1.38	2242.98	3204.79
37001.000	7.70	0.0	0.0	578.10	5200.00	592.96	0.0	593.01	1.03	1.34	3078.94	5136.15
37001.000	7.70	0.0	0.0	578.10	5500.00	593.45	0.0	593.50	0.92	1.30	3310.11	5730.38
37001.000	7.70	0.0	0.0	578.10	5900.00	594.80	0.0	594.84	0.61	1.13	3974.65	7551.79
37220.000	110.00	0.0	0.0	579.30	3700.00	591.10	0.0	591.15	1.63	2.36	2434.82	2899.90
37220.000	110.00	0.0	0.0	579.30	5200.00	592.97	0.0	593.02	1.45	2.47	3250.84	4314.74
37220.000	110.00	0.0	0.0	579.30	5500.00	593.45	0.0	593.51	1.35	2.44	3471.51	4735.66
37220.000	110.00	0.0	0.0	579.30	5900.00	594.80	0.0	594.85	0.97	2.21	4085.24	5997.38
37320.000	195.00	0.0	0.0	579.10	3700.00	591.10	0.0	591.26	4.51	3.24	1143.46	1742.42
37320.000	195.00	0.0	0.0	579.10	5200.00	592.93	0.0	593.16	5.10	3.81	1366.25	2303.21
37320.000	195.00	0.0	0.0	579.10	5500.00	593.41	0.0	593.64	5.00	3.86	1424.86	2458.99
37320.000	195.00	0.0	0.0	579.10	5900.00	594.75	0.0	594.97	4.11	3.71	1588.58	2911.10

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
37321.000	1.00	597.10	597.50	579.10	3700.00	591.10	0.0	591.26	10.14	3.24	1143.49	1161.66
37321.000	1.00	597.10	597.50	579.10	5200.00	592.93	0.0	593.16	11.47	3.81	1366.28	1535.53
37321.000	1.00	597.10	597.50	579.10	5500.00	593.41	0.0	593.64	11.25	3.86	1424.92	1639.44
37321.000	1.00	597.10	597.50	579.10	5900.00	594.75	0.0	594.97	9.24	3.71	1588.55	1940.68
37322.000	19.00	597.10	597.50	579.10	3700.00	591.12	0.0	591.28	10.10	3.23	1145.21	1164.41
37322.000	19.00	597.10	597.50	579.10	5200.00	592.95	0.0	593.18	11.42	3.80	1368.24	1538.97
37322.000	19.00	597.10	597.50	579.10	5500.00	593.43	0.0	593.67	11.21	3.85	1426.82	1642.85
37322.000	19.00	597.10	597.50	579.10	5900.00	594.77	0.0	594.99	9.21	3.71	1590.10	1943.61
37323.000	1.00	0.0	0.0	579.10	3700.00	591.12	0.0	591.28	4.94	3.23	1146.00	1665.27
37323.000	1.00	0.0	0.0	579.10	5200.00	592.95	0.0	593.18	5.58	3.80	1369.19	2200.91
37323.000	1.00	0.0	0.0	579.10	5500.00	593.44	0.0	593.67	5.48	3.85	1427.75	2349.29
37323.000	1.00	0.0	0.0	579.10	5900.00	594.77	0.0	594.99	4.51	3.71	1590.84	2778.59
37820.000	450.00	0.0	0.0	578.70	3700.00	591.41	0.0	591.43	1.37	1.74	5194.40	3162.69
37820.000	450.00	0.0	0.0	578.70	5200.00	593.31	0.0	593.33	1.03	1.68	7086.37	5123.12
37820.000	450.00	0.0	0.0	578.70	5500.00	593.79	0.0	593.82	0.93	1.63	7582.66	5704.71
37820.000	450.00	0.0	0.0	578.70	5900.00	595.09	0.0	595.11	0.63	1.43	8954.35	7438.76
39020.000	960.00	0.0	0.0	578.20	3700.00	591.50	0.0	591.52	0.69	1.14	3374.53	4461.14
39020.000	960.00	0.0	0.0	578.20	5200.00	593.38	0.0	593.40	0.57	1.17	4446.04	6863.76
39020.000	960.00	0.0	0.0	578.20	5500.00	593.86	0.0	593.88	0.53	1.15	4723.94	7541.61
39020.000	960.00	0.0	0.0	578.20	5900.00	595.13	0.0	595.15	0.39	1.05	5470.20	9485.99
44520.000	1705.00	0.0	0.0	582.90	3700.00	591.65	0.0	591.68	1.74	1.38	2904.29	2806.12
44520.000	1705.00	0.0	0.0	582.90	5200.00	593.49	0.0	593.51	0.89	1.15	4411.27	5520.01
44520.000	1705.00	0.0	0.0	582.90	5500.00	593.95	0.0	593.98	0.76	1.09	4802.57	6329.58
44520.000	1705.00	0.0	0.0	582.90	5900.00	595.20	0.0	595.22	0.46	0.92	5866.48	8722.37
45000.000	1205.00	0.0	0.0	582.90	3700.00	591.85	0.0	592.15	32.31	6.04	1399.19	650.90
45000.000	1205.00	0.0	0.0	582.90	5200.00	593.59	0.0	593.73	14.28	4.63	2458.36	1375.95
45000.000	1205.00	0.0	0.0	582.90	5500.00	594.04	0.0	594.16	11.77	4.34	2730.55	1602.84
45000.000	1205.00	0.0	0.0	582.90	5900.00	595.25	0.0	595.32	6.53	3.50	3489.17	2308.62
45520.000	1130.00	0.0	0.0	581.20	3700.00	593.61	0.0	593.75	7.41	3.67	1511.63	1359.05
45520.000	1130.00	0.0	0.0	581.20	5200.00	594.81	0.0	594.96	7.86	3.98	1945.10	1854.99
45520.000	1130.00	0.0	0.0	581.20	5500.00	595.12	0.0	595.27	7.54	3.95	2067.31	2002.53
45520.000	1130.00	0.0	0.0	581.20	5900.00	595.95	0.0	596.08	5.91	3.62	2405.99	2427.04
46870.000	1415.00	0.0	0.0	582.00	3700.00	593.93	0.0	593.94	0.51	1.15	4697.80	5193.14
46870.000	1415.00	0.0	0.0	582.00	5200.00	595.16	0.0	595.18	0.59	1.32	5569.94	6798.63
46870.000	1415.00	0.0	0.0	582.00	5500.00	595.47	0.0	595.48	0.58	1.34	5792.04	7233.02
46870.000	1415.00	0.0	0.0	582.00	5900.00	596.24	0.0	596.25	0.50	1.29	6352.27	8373.30
47620.000	755.00	0.0	0.0	582.00	3700.00	593.99	0.0	594.03	2.17	2.13	2685.09	2510.16
47620.000	755.00	0.0	0.0	582.00	5200.00	595.22	0.0	595.27	2.23	2.31	3378.05	3480.35
47620.000	755.00	0.0	0.0	582.00	5500.00	595.53	0.0	595.58	2.16	2.31	3554.35	3744.87
47620.000	755.00	0.0	0.0	582.00	5900.00	596.29	0.0	596.33	1.76	2.17	4002.13	4449.18
48570.000	1010.00	0.0	0.0	582.00	3700.00	594.20	0.0	594.25	2.44	2.29	3026.86	2366.76
48570.000	1010.00	0.0	0.0	582.00	5200.00	595.45	0.0	595.50	2.63	2.54	3767.85	3208.11
48570.000	1010.00	0.0	0.0	582.00	5500.00	595.75	0.0	595.80	2.57	2.56	3949.40	3428.63
48570.000	1010.00	0.0	0.0	582.00	5900.00	596.47	0.0	596.52	2.18	2.44	4393.77	3993.48

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
48600.000	945.00	0.0	0.0	582.00	3700.00	594.46	0.0	594.79	11.00	4.97	1229.82	1115.66
48600.000	945.00	0.0	0.0	582.00	5200.00	595.68	0.0	596.16	14.43	6.09	1494.09	1369.03
48600.000	945.00	0.0	0.0	582.00	5500.00	595.96	0.0	596.46	14.73	6.24	1559.48	1432.81
48600.000	945.00	0.0	0.0	582.00	5900.00	596.63	0.0	597.12	13.83	6.25	1711.02	1586.54
48820.000	425.00	0.0	0.0	581.00	3150.00	594.99	0.0	595.09	2.89	2.46	1279.91	1853.04
48820.000	425.00	0.0	0.0	581.00	4450.00	596.42	0.0	596.56	3.96	3.08	1444.67	2237.10
48820.000	425.00	0.0	0.0	581.00	4900.00	596.72	0.0	596.89	4.46	3.31	1479.61	2321.43
48820.000	425.00	0.0	0.0	581.00	5400.00	597.35	0.0	597.53	4.67	3.48	1552.37	2500.14
48821.000	29.40	599.20	595.20	581.00	3150.00	594.99	0.0	595.09	2.89	2.46	1280.01	1853.27
48821.000	29.40	599.20	595.20	581.00	4450.00	596.57	0.0	596.71	3.81	3.04	1462.02	2278.85
48821.000	29.40	599.20	595.20	581.00	4900.00	596.91	0.0	597.07	4.26	3.26	1501.71	2375.27
48821.000	29.40	599.20	595.20	581.00	5400.00	597.60	0.0	597.78	4.40	3.41	1581.54	2572.92
48920.000	100.00	0.0	0.0	582.40	3150.00	595.07	0.0	595.12	1.17	2.40	2337.60	2909.93
48920.000	100.00	0.0	0.0	582.40	4450.00	596.70	0.0	596.76	1.18	2.65	2973.74	4091.20
48920.000	100.00	0.0	0.0	582.40	4900.00	597.07	0.0	597.13	1.25	2.77	3116.27	4380.42
48920.000	100.00	0.0	0.0	582.40	5400.00	597.78	0.0	597.84	1.18	2.79	3392.96	4966.15
49220.000	250.00	0.0	0.0	581.60	3150.00	595.13	0.0	595.16	1.32	1.69	2858.54	2745.87
49220.000	250.00	0.0	0.0	581.60	4450.00	596.77	0.0	596.79	1.11	1.73	3847.00	4214.52
49220.000	250.00	0.0	0.0	581.60	4900.00	597.14	0.0	597.17	1.14	1.79	4076.90	4590.67
49220.000	250.00	0.0	0.0	581.60	5400.00	597.85	0.0	597.87	1.02	1.76	4520.12	5350.12
49870.000	695.00	0.0	0.0	583.60	3150.00	595.23	0.0	595.26	2.04	2.32	3920.40	2206.46
49870.000	695.00	0.0	0.0	583.60	4450.00	596.85	0.0	596.89	1.97	2.52	5076.01	3171.60
49870.000	695.00	0.0	0.0	583.60	4900.00	597.23	0.0	597.27	2.06	2.63	5344.37	3415.39
49870.000	695.00	0.0	0.0	583.60	5400.00	597.93	0.0	597.97	1.91	2.63	5856.76	3903.68
51270.000	1965.00	0.0	0.0	583.60	3150.00	595.60	0.0	595.71	2.75	3.20	1508.23	1990.45
51270.000	1965.00	0.0	0.0	583.60	4450.00	597.19	0.0	597.29	2.35	3.27	2062.33	2903.04
51270.000	1965.00	0.0	0.0	583.60	4900.00	597.57	0.0	597.68	2.38	3.36	2195.63	3174.62
51270.000	1965.00	0.0	0.0	583.60	5400.00	598.23	0.0	598.34	2.16	3.31	2429.45	3677.47
51370.000	90.00	0.0	0.0	584.30	3150.00	595.57	0.0	595.82	6.94	4.07	773.87	1195.95
51370.000	90.00	0.0	0.0	584.30	4450.00	597.09	0.0	597.45	7.98	4.82	922.75	1574.88
51370.000	90.00	0.0	0.0	584.30	4900.00	597.45	0.0	597.86	8.61	5.11	958.13	1669.73
51370.000	90.00	0.0	0.0	584.30	5400.00	598.10	0.0	598.54	8.57	5.28	1029.33	1844.44
51371.000	1.00	597.80	598.30	584.30	3150.00	595.57	0.0	595.82	6.94	4.07	773.90	1196.01
51371.000	1.00	597.80	598.30	584.30	4450.00	597.09	0.0	597.45	7.98	4.82	922.82	1575.04
51371.000	1.00	597.80	598.30	584.30	4900.00	597.46	0.0	597.86	8.61	5.11	958.14	1669.77
51371.000	1.00	597.80	598.30	584.30	5400.00	598.08	0.0	598.57	23.32	5.61	969.21	1118.34
51372.000	18.00	597.80	598.30	584.30	3150.00	595.58	0.0	595.84	6.90	4.06	775.14	1199.02
51372.000	18.00	597.80	598.30	584.30	4450.00	597.11	0.0	597.47	7.94	4.81	924.24	1578.84
51372.000	18.00	597.80	598.30	584.30	4900.00	597.47	0.0	597.88	8.57	5.11	959.66	1673.89
51372.000	18.00	597.80	598.30	584.30	5400.00	598.12	0.0	598.61	23.30	5.61	971.01	1118.59
51373.000	1.00	0.0	0.0	584.30	3150.00	595.58	0.0	595.84	6.90	4.06	775.28	1199.36
51373.000	1.00	0.0	0.0	584.30	4450.00	597.11	0.0	597.47	7.94	4.81	924.46	1579.41
51373.000	1.00	0.0	0.0	584.30	4900.00	597.47	0.0	597.88	8.56	5.10	959.88	1674.47
51373.000	1.00	0.0	0.0	584.30	5400.00	598.20	0.0	598.63	8.32	5.23	1045.16	1872.62

MOORE BUSINESS FORMS INC 27

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	IOK*S	VCH	AREA	.01K
51470.000	90.00	0.0	0.0	583.50	3150.00	595.87	0.0	595.92	1.22	2.25	2081.03	2856.87
51470.000	90.00	0.0	0.0	583.50	4450.00	597.53	0.0	597.58	1.17	2.43	2660.46	4108.27
51470.000	90.00	0.0	0.0	583.50	4900.00	597.95	0.0	598.01	1.21	2.53	2806.67	4454.95
51470.000	90.00	0.0	0.0	583.50	5400.00	598.70	0.0	598.76	1.12	2.52	3070.69	5110.64
52470.000	925.00	0.0	0.0	584.30	3150.00	596.04	0.0	596.12	3.49	2.90	1874.76	1686.66
52470.000	925.00	0.0	0.0	584.30	4450.00	597.68	0.0	597.74	2.46	2.72	2775.43	2839.38
52470.000	925.00	0.0	0.0	584.30	4900.00	598.10	0.0	598.16	2.36	2.74	3025.83	3189.69
52470.000	925.00	0.0	0.0	584.30	5400.00	598.85	0.0	598.90	1.95	2.60	3484.81	3863.60
53120.000	650.00	0.0	0.0	584.30	3150.00	596.14	0.0	596.59	12.89	6.07	980.25	877.43
53120.000	650.00	0.0	0.0	584.30	4450.00	597.59	0.0	598.22	15.94	7.30	1237.60	1114.61
53120.000	650.00	0.0	0.0	584.30	4900.00	597.96	0.0	598.65	17.23	7.73	1308.22	1180.56
53120.000	650.00	0.0	0.0	584.30	5400.00	598.64	0.0	599.36	17.04	7.95	1443.76	1308.10
53270.000	440.00	0.0	0.0	584.60	2600.00	596.86	0.0	596.93	3.61	2.90	2880.53	1368.03
53270.000	440.00	0.0	0.0	584.60	3750.00	598.52	0.0	598.59	3.57	3.16	3807.39	1983.90
53270.000	440.00	0.0	0.0	584.60	4050.00	598.97	0.0	599.04	3.49	3.20	4060.18	2169.21
53270.000	440.00	0.0	0.0	584.60	4500.00	599.66	0.0	599.73	3.32	3.23	4450.52	2469.21
54770.000	1270.00	0.0	0.0	584.20	2600.00	597.32	0.0	597.44	4.33	3.38	1442.93	1250.08
54770.000	1270.00	0.0	0.0	584.20	3750.00	598.96	0.0	599.08	4.09	3.58	2038.16	1855.16
54770.000	1270.00	0.0	0.0	584.20	4050.00	599.40	0.0	599.52	3.93	3.59	2209.89	2043.40
54770.000	1270.00	0.0	0.0	584.20	4500.00	600.07	0.0	600.18	3.62	3.56	2477.99	2363.87
55590.000	925.00	0.0	0.0	584.30	2600.00	597.67	0.0	597.74	2.49	2.92	1441.83	1646.52
55590.000	925.00	0.0	0.0	584.30	3750.00	599.29	0.0	599.37	2.38	3.08	1901.68	2430.26
55590.000	925.00	0.0	0.0	584.30	4050.00	599.71	0.0	599.79	2.31	3.10	2024.05	2663.12
55590.000	925.00	0.0	0.0	584.30	4500.00	600.36	0.0	600.44	2.19	3.10	2211.85	3040.33
56170.000	840.00	0.0	0.0	585.80	2600.00	597.85	0.0	598.21	12.07	5.28	823.75	748.37
56170.000	840.00	0.0	0.0	585.80	3750.00	599.38	0.0	599.88	15.08	6.41	1107.24	965.81
56170.000	840.00	0.0	0.0	585.80	4050.00	599.78	0.0	600.31	15.46	6.62	1185.24	1029.95
56170.000	840.00	0.0	0.0	585.80	4500.00	600.39	0.0	600.95	15.78	6.89	1304.36	1132.80
56270.000	280.00	0.0	0.0	585.90	2600.00	598.37	0.0	598.50	5.53	2.82	920.58	1105.54
56270.000	280.00	0.0	0.0	585.90	3750.00	600.07	0.0	600.26	6.83	3.44	1089.51	1435.38
56270.000	280.00	0.0	0.0	585.90	4050.00	600.50	0.0	600.70	7.08	3.58	1131.79	1522.05
56270.000	280.00	0.0	0.0	585.90	4500.00	601.13	0.0	601.35	7.40	3.77	1195.16	1654.78
56271.000	1.00	602.80	604.20	585.90	2600.00	598.38	0.0	598.50	5.53	2.82	920.62	1105.63
56271.000	1.00	602.80	604.20	585.90	3750.00	600.07	0.0	600.26	6.82	3.44	1089.56	1435.48
56271.000	1.00	602.80	604.20	585.90	4050.00	600.50	0.0	600.70	7.08	3.58	1131.89	1522.25
56271.000	1.00	602.80	604.20	585.90	4500.00	601.13	0.0	601.35	7.39	3.76	1195.23	1654.93
56272.000	18.00	602.80	604.20	585.90	2600.00	598.39	0.0	598.51	5.51	2.82	921.57	1107.40
56272.000	18.00	602.80	604.20	585.90	3750.00	600.08	0.0	600.27	6.80	3.44	1090.72	1437.85
56272.000	18.00	602.80	604.20	585.90	4050.00	600.51	0.0	600.71	7.06	3.57	1133.11	1524.77
56272.000	18.00	602.80	604.20	585.90	4500.00	601.15	0.0	601.37	7.37	3.76	1196.52	1657.67
56273.000	1.00	0.0	0.0	585.90	2600.00	598.39	0.0	598.51	5.51	2.82	921.67	1107.58
56273.000	1.00	0.0	0.0	585.90	3750.00	600.08	0.0	600.27	6.80	3.44	1090.82	1438.05
56273.000	1.00	0.0	0.0	585.90	4050.00	600.51	0.0	600.71	7.05	3.57	1133.20	1524.97
56273.000	1.00	0.0	0.0	585.90	4500.00	601.15	0.0	601.37	7.37	3.76	1196.66	1657.98

MOORE BUSINESS FORMS INC 27

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
14520.000	3700.00	587.65	0.0	0.0	0.0	684.20	0.0
14520.000	5200.00	589.60	1.95	0.0	0.0	738.80	0.0
14520.000	5500.00	590.40	0.80	0.0	0.0	788.39	0.0
14520.000	5900.00	592.70	2.30	0.0	0.0	1009.20	0.0
17540.000	3700.00	588.07	0.0	0.42	0.0	558.25	3050.00
17540.000	5200.00	590.00	1.93	0.40	0.0	619.92	3050.00
17540.000	5500.00	590.74	0.74	0.34	0.0	839.44	3050.00
17540.000	5900.00	592.89	2.15	0.19	0.0	1476.54	3050.00
19335.000	3700.00	588.54	0.0	0.47	0.0	257.93	1875.00
19335.000	5200.00	590.42	1.88	0.42	0.0	477.86	1875.00
19335.000	5500.00	591.10	0.68	0.36	0.0	779.66	1875.00
19335.000	5900.00	593.09	1.99	0.19	0.0	1223.52	1875.00
21420.000	3700.00	589.40	0.0	0.86	0.0	485.36	2095.00
21420.000	5200.00	591.31	1.91	0.89	0.0	592.97	2095.00
21420.000	5500.00	591.90	0.59	0.80	0.0	626.40	2095.00
21420.000	5900.00	593.54	1.64	0.46	0.0	718.46	2095.00
22680.000	3700.00	589.51	0.0	0.21	0.0	278.43	1280.00
22680.000	5200.00	591.53	1.92	0.21	0.0	300.00	1280.00
22680.000	5500.00	592.10	0.57	0.20	0.0	300.00	1280.00
22680.000	5900.00	593.68	1.58	0.14	0.0	300.00	1280.00
22870.000	3700.00	589.50	0.0	0.01	0.0	150.70	245.00
22870.000	5200.00	591.51	1.91	-0.02	0.0	159.98	245.00
22870.000	5500.00	592.08	0.57	-0.02	0.0	161.00	245.00
22870.000	5900.00	593.66	1.58	0.02	0.0	161.00	245.00
22871.000	3700.00	589.60	0.0	0.01	0.0	150.74	31.00
22871.000	5200.00	591.52	1.91	0.01	0.0	160.01	31.00
22871.000	5500.00	592.09	0.57	0.01	0.0	161.00	31.00
22871.000	5900.00	593.80	1.71	0.14	0.0	161.00	31.00
23000.000	3700.00	589.60	0.0	-0.01	0.0	120.76	100.00
23000.000	5200.00	591.50	1.90	-0.02	0.0	128.31	100.00
23000.000	5500.00	592.07	0.57	0.02	0.0	131.89	100.00
23000.000	5900.00	593.78	1.71	-0.02	0.0	142.65	100.00
23001.000	3700.00	589.64	0.0	0.04	0.0	120.90	14.50
23001.000	5200.00	591.56	1.92	0.06	0.0	128.68	14.50
23001.000	5500.00	592.13	0.57	0.06	0.0	132.25	14.50
23001.000	5900.00	593.83	1.70	0.04	0.0	142.91	14.50
23285.000	3700.00	589.90	0.0	0.25	0.0	520.82	280.00
23285.000	5200.00	591.88	1.98	0.32	0.0	583.50	280.00
23285.000	5500.00	592.45	0.57	0.32	0.0	597.82	280.00
23285.000	5900.00	594.09	1.64	0.26	0.0	600.00	280.00
25000.000	3700.00	590.14	0.0	0.24	0.0	654.06	1750.00
25000.000	5200.00	592.12	1.98	0.24	0.0	745.23	1750.00
25000.000	5500.00	592.67	0.55	0.23	0.0	906.73	1750.00
25000.000	5900.00	594.25	1.58	0.16	0.0	1319.75	1750.00

MOORE BUSINESS FORMS, INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
25800.000	3700.00	590.22	0.0	0.09	0.0	744.44	1160.00
25800.000	5200.00	592.20	1.98	0.08	0.0	861.61	1160.00
25800.000	5500.00	592.74	0.55	0.07	0.0	881.86	1160.00
25800.000	5900.00	594.30	1.56	0.05	0.0	885.75	1160.00
25900.000	3700.00	590.23	0.0	0.01	0.0	734.75	90.00
25900.000	5200.00	592.21	1.98	0.01	0.0	940.72	90.00
25900.000	5500.00	592.75	0.55	0.01	0.0	944.78	90.00
25900.000	5900.00	594.31	1.55	0.01	0.0	956.36	90.00
25901.000	3700.00	590.23	0.0	-0.00	0.0	734.92	1.00
25901.000	5200.00	592.21	1.98	-0.00	0.0	940.74	1.00
25901.000	5500.00	592.75	0.55	0.00	0.0	944.80	1.00
25901.000	5900.00	594.30	1.55	-0.00	0.0	956.37	1.00
25902.000	3700.00	590.23	0.0	0.00	0.0	734.92	12.50
25902.000	5200.00	592.21	1.98	0.00	0.0	940.74	12.50
25902.000	5500.00	592.75	0.55	0.00	0.0	944.80	12.50
25902.000	5900.00	594.31	1.55	0.00	0.0	956.37	12.50
25903.000	3700.00	590.23	0.0	0.00	0.0	734.94	1.00
25903.000	5200.00	592.21	1.98	0.00	0.0	940.74	1.00
25903.000	5500.00	592.75	0.55	0.00	0.0	944.80	1.00
25903.000	5900.00	594.31	1.55	0.00	0.0	956.37	1.00
26000.000	3700.00	590.24	0.0	0.01	0.0	823.41	80.00
26000.000	5200.00	592.22	1.97	0.01	0.0	964.76	80.00
26000.000	5500.00	592.76	0.54	0.01	0.0	977.02	80.00
26000.000	5900.00	594.31	1.55	0.00	0.0	1011.93	80.00
26320.000	3700.00	590.25	0.0	0.01	0.0	854.45	290.00
26320.000	5200.00	592.22	1.97	0.01	0.0	957.66	290.00
26320.000	5500.00	592.77	0.54	0.01	0.0	1049.38	290.00
26320.000	5900.00	594.31	1.55	0.00	0.0	1105.00	290.00
26720.000	3700.00	590.27	0.0	0.02	0.0	900.08	465.00
26720.000	5200.00	592.24	1.97	0.01	0.0	1021.27	465.00
26720.000	5500.00	592.78	0.54	0.01	0.0	1116.12	465.00
26720.000	5900.00	594.32	1.54	0.01	0.0	1170.00	465.00
26721.000	3700.00	590.27	0.0	-0.00	0.0	900.08	1.00
26721.000	5200.00	592.24	1.97	-0.00	0.0	1021.36	1.00
26721.000	5500.00	592.78	0.54	-0.00	0.0	1116.17	1.00
26721.000	5900.00	594.32	1.54	-0.00	0.0	1170.00	1.00
26722.000	3700.00	590.27	0.0	0.00	0.0	900.09	20.00
26722.000	5200.00	592.24	1.97	0.00	0.0	1021.23	20.00
26722.000	5500.00	592.78	0.54	0.00	0.0	1116.12	20.00
26722.000	5900.00	594.32	1.54	0.00	0.0	1170.00	20.00
26723.000	3700.00	590.27	0.0	0.00	0.0	900.09	1.00
26723.000	5200.00	592.24	1.97	0.00	0.0	1021.23	1.00
26723.000	5500.00	592.78	0.54	0.00	0.0	1116.12	1.00
26723.000	5900.00	594.32	1.54	0.00	0.0	1170.00	1.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
26820.000	3700.00	590.27	0.0	0.00	0.0	884.10	85.00
26820.000	5200.00	592.24	1.97	0.00	0.0	929.44	85.00
26820.000	5500.00	592.78	0.54	0.00	0.0	973.44	85.00
26820.000	5900.00	594.32	1.54	0.0	0.0	1098.75	85.00
27920.000	3700.00	590.32	0.0	0.05	0.0	697.86	1385.00
27920.000	5200.00	592.27	1.95	0.04	0.0	748.08	1385.00
27920.000	5500.00	592.81	0.54	0.03	0.0	764.08	1385.00
27920.000	5900.00	594.34	1.53	0.02	0.0	765.00	1385.00
29520.000	3700.00	590.44	0.0	0.12	0.0	517.70	1545.00
29520.000	5200.00	592.38	1.94	0.11	0.0	549.75	1545.00
29520.000	5500.00	592.91	0.53	0.10	0.0	556.35	1545.00
29520.000	5900.00	594.41	1.50	0.07	0.0	575.10	1545.00
29920.000	3700.00	590.48	0.0	0.04	0.0	154.80	480.00
29920.000	5200.00	592.41	1.93	0.03	0.0	154.80	480.00
29920.000	5500.00	592.93	0.52	0.02	0.0	154.80	480.00
29920.000	5900.00	594.42	1.48	0.01	0.0	154.80	480.00
29921.000	3700.00	590.49	0.0	0.00	0.0	154.80	105.40
29921.000	5200.00	592.41	1.93	0.00	0.0	154.80	105.40
29921.000	5500.00	592.93	0.52	0.00	0.0	154.80	105.40
29921.000	5900.00	594.42	1.48	0.00	0.0	154.80	105.40
30200.000	3700.00	590.58	0.0	0.09	0.0	585.09	185.00
30200.000	5200.00	592.54	1.97	0.13	0.0	600.00	185.00
30200.000	5500.00	593.07	0.53	0.14	0.0	600.00	185.00
30200.000	5900.00	594.55	1.47	0.13	0.0	600.00	185.00
30920.000	3700.00	590.59	0.0	0.02	0.0	703.87	500.00
30920.000	5200.00	592.56	1.97	0.02	0.0	820.78	500.00
30920.000	5500.00	593.09	0.53	0.01	0.0	849.71	500.00
30920.000	5900.00	594.56	1.47	0.01	0.0	930.63	500.00
31720.000	3700.00	590.64	0.0	0.05	0.0	476.33	1100.00
31720.000	5200.00	592.59	1.95	0.03	0.0	536.07	1100.00
31720.000	5500.00	593.11	0.52	0.02	0.0	552.80	1100.00
31720.000	5900.00	594.57	1.46	0.01	0.0	599.84	1100.00
33120.000	3700.00	590.79	0.0	0.15	0.0	536.37	1405.00
33120.000	5200.00	592.74	1.95	0.15	0.0	583.53	1405.00
33120.000	5500.00	593.25	0.51	0.15	0.0	596.35	1405.00
33120.000	5900.00	594.68	1.42	0.11	0.0	631.89	1405.00
34720.000	3700.00	590.90	0.0	0.10	0.0	674.49	1385.00
34720.000	5200.00	592.83	1.93	0.09	0.0	750.00	1385.00
34720.000	5500.00	593.33	0.51	0.08	0.0	750.00	1385.00
34720.000	5900.00	594.73	1.40	0.06	0.0	750.00	1385.00
35720.000	3700.00	590.97	0.0	0.07	0.0	867.31	995.00
35720.000	5200.00	592.88	1.92	0.06	0.0	945.55	995.00
35720.000	5500.00	593.39	0.50	0.05	0.0	959.95	995.00
35720.000	5900.00	594.77	1.38	0.04	0.0	999.62	995.00

MOORE BUSINESS FORMS INC 27

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     SECNO        Q         CWSEL     DIFWSP     DIFWSX     DIFKWS     TOPWID     XLCH

   36450.000   3700.00     590.99      0.0        0.02       0.0       620.52    735.00
   36450.000   5200.00     592.90      1.91       0.01       0.0       694.03    735.00
   36450.000   5500.00     593.40      0.50       0.01       0.0       704.65    735.00
   36450.000   5900.00     594.77      1.38       0.01       0.0       734.09    735.00

   36550.000   3700.00     591.00      0.0        0.01       0.0       520.11     75.00
   36550.000   5200.00     592.90      1.90       0.00       0.0       583.62     75.00
   36550.000   5500.00     593.40      0.50       0.00       0.0       596.72     75.00
   36550.000   5900.00     594.77      1.37       0.00       0.0       632.83     75.00

   36551.000   3700.00     591.00      0.0        0.00       0.0       520.32      7.70
   36551.000   5200.00     592.90      1.90       0.00       0.0       583.65      7.70
   36551.000   5500.00     593.40      0.50       0.00       0.0       596.74      7.70
   36551.000   5900.00     594.77      1.37       0.00       0.0       632.82      7.70

   36800.000   3700.00     590.99      0.0       -0.00       0.0       467.27    180.00
   36800.000   5200.00     592.90      1.90      -0.00       0.0       530.79    180.00
   36800.000   5500.00     593.40      0.50      -0.00       0.0       545.13    180.00
   36800.000   5900.00     594.77      1.38      -0.00       0.0       584.93    180.00

   37000.000   3700.00     591.09      0.0        0.10       0.0       423.32    230.00
   37000.000   5200.00     592.96      1.87       0.06       0.0       467.70    230.00
   37000.000   5500.00     593.45      0.49       0.05       0.0       477.72    230.00
   37000.000   5900.00     594.80      1.35       0.03       0.0       505.34    230.00

   37001.000   3700.00     591.09      0.0        0.00       0.0       423.37      7.70
   37001.000   5200.00     592.96      1.87       0.00       0.0       467.71      7.70
   37001.000   5500.00     593.45      0.49       0.00       0.0       477.74      7.70
   37001.000   5900.00     594.80      1.35       0.00       0.0       505.45      7.70

   37220.000   3700.00     591.10      0.0        0.01       0.0       419.91    110.00
   37220.000   5200.00     592.97      1.86       0.00       0.0       449.71    110.00
   37220.000   5500.00     593.45      0.49       0.00       0.0       454.59    110.00
   37220.000   5900.00     594.30      1.35       0.00       0.0       455.00    110.00

   37320.000   3700.00     591.10      0.0       -0.00       0.0       121.29    195.00
   37320.000   5200.00     592.93      1.83      -0.04       0.0       121.74    195.00
   37320.000   5500.00     593.41      0.48      -0.04       0.0       121.86    195.00
   37320.000   5900.00     594.75      1.34      -0.05       0.0       122.00    195.00

   37321.000   3700.00     591.10      0.0       -0.00       0.0       121.29      1.00
   37321.000   5200.00     592.93      1.83      -0.00       0.0       121.74      1.00
   37321.000   5500.00     593.41      0.48      -0.00       0.0       121.86      1.00
   37321.000   5900.00     594.75      1.34       0.00       0.0       122.00      1.00

   37322.000   3700.00     591.12      0.0       -0.02       0.0       121.29     19.00
   37322.000   5200.00     592.95      1.84       0.02       0.0       121.74     19.00
   37322.000   5500.00     593.43      0.48      -0.02       0.0       121.86     19.00
   37322.000   5900.00     594.77      1.34      -0.02       0.0       122.00     19.00

   37323.000   3700.00     591.12      0.0        0.00       0.0       121.29      1.00
   37323.000   5200.00     592.95      1.84       0.00       0.0       121.74      1.00
   37323.000   5500.00     593.44      0.48       0.00       0.0       121.86      1.00
   37323.000   5900.00     594.77      1.34       0.00       0.0       122.00      1.00
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MOORE BUSINESS FORMS INC 77

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
37820.000	3700.00	591.41	0.0	0.29	0.0	964.98	450.00
37820.000	5200.00	593.31	1.90	0.35	0.0	1021.02	450.00
37820.000	5500.00	593.79	0.48	0.36	0.0	1034.30	450.00
37820.000	5900.00	595.09	1.30	0.32	0.0	1070.15	450.00
39020.000	3700.00	591.50	0.0	0.09	0.0	559.39	960.00
39020.000	5200.00	593.38	1.88	0.07	0.0	580.54	960.00
39020.000	5500.00	593.86	0.48	0.07	0.0	585.00	960.00
39020.000	5900.00	595.13	1.28	0.04	0.0	585.00	960.00
44520.000	3700.00	591.65	0.0	0.15	0.0	805.31	1705.00
44520.000	5200.00	593.49	1.84	0.11	0.0	836.18	1705.00
44520.000	5500.00	593.95	0.47	0.10	0.0	844.33	1705.00
44520.000	5900.00	595.20	1.25	0.07	0.0	866.10	1705.00
45000.000	3700.00	591.85	0.0	0.20	0.0	584.92	1205.00
45000.000	5200.00	593.59	1.74	0.10	0.0	616.92	1205.00
45000.000	5500.00	594.04	0.45	0.09	0.0	620.22	1205.00
45000.000	5900.00	595.25	1.21	0.05	0.0	629.33	1205.00
45520.000	3700.00	593.61	0.0	1.76	0.0	343.49	1130.00
45520.000	5200.00	594.81	1.19	1.22	0.0	382.70	1130.00
45520.000	5500.00	595.12	0.32	1.08	0.0	393.05	1130.00
45520.000	5900.00	595.95	0.83	0.70	0.0	420.40	1130.00
46870.000	3700.00	593.93	0.0	0.32	0.0	706.91	1415.00
46870.000	5200.00	595.16	1.23	0.35	0.0	717.62	1415.00
46870.000	5500.00	595.47	0.31	0.35	0.0	720.32	1415.00
46870.000	5900.00	596.24	0.77	0.29	0.0	729.19	1415.00
47620.000	3700.00	593.99	0.0	0.06	0.0	547.25	755.00
47620.000	5200.00	595.22	1.24	0.06	0.0	573.53	755.00
47620.000	5500.00	595.53	0.31	0.06	0.0	580.02	755.00
47620.000	5900.00	596.29	0.76	0.05	0.0	595.84	755.00
48570.000	3700.00	594.20	0.0	0.22	0.0	584.72	1010.00
48570.000	5200.00	595.45	1.25	0.23	0.0	604.35	1010.00
48570.000	5500.00	595.75	0.30	0.22	0.0	609.06	1010.00
48570.000	5900.00	596.47	0.72	0.18	0.0	618.56	1010.00
48600.000	3700.00	594.46	0.0	0.25	0.0	206.84	945.00
48600.000	5200.00	595.68	1.22	0.23	0.0	225.19	945.00
48600.000	5500.00	595.96	0.28	0.21	0.0	229.51	945.00
48600.000	5900.00	596.63	0.66	0.15	0.0	230.00	945.00
48820.000	3150.00	594.99	0.0	0.53	0.0	115.70	425.00
48820.000	4450.00	596.42	1.42	0.74	0.0	115.70	425.00
48820.000	4900.00	596.72	0.30	0.76	0.0	115.70	425.00
48820.000	5400.00	597.35	0.63	0.72	0.0	115.70	425.00
48821.000	3150.00	594.99	0.0	0.00	0.0	115.70	29.40
48821.000	4450.00	596.57	1.57	0.15	0.0	115.70	29.40
48821.000	4900.00	596.91	0.34	0.19	0.0	115.70	29.40
48821.000	5400.00	597.60	0.69	0.25	0.0	115.70	29.40

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
48920.000	3150.00	595.07	0.0	0.08	0.0	390.00	100.00
48920.000	4450.00	596.70	1.63	0.14	0.0	390.00	100.00
48920.000	4900.00	597.07	0.37	0.16	0.0	390.00	100.00
48920.000	5400.00	597.78	0.71	0.18	0.0	390.00	100.00
49220.000	3150.00	595.13	0.0	0.06	0.0	584.05	250.00
49220.000	4450.00	596.77	1.64	0.07	0.0	615.07	250.00
49220.000	4900.00	597.14	0.37	0.07	0.0	619.95	250.00
49220.000	5400.00	597.85	0.71	0.07	0.0	626.56	250.00
49870.000	3150.00	595.23	0.0	0.10	0.0	695.43	695.00
49870.000	4450.00	596.85	1.62	0.08	0.0	724.86	695.00
49870.000	4900.00	597.23	0.37	0.09	0.0	730.00	695.00
49870.000	5400.00	597.93	0.70	0.08	0.0	730.00	695.00
51270.000	3150.00	595.60	0.0	0.37	0.0	350.00	1965.00
51270.000	4450.00	597.19	1.58	0.33	0.0	350.00	1965.00
51270.000	4900.00	597.57	0.38	0.34	0.0	350.00	1965.00
51270.000	5400.00	598.23	0.67	0.31	0.0	350.00	1965.00
51370.000	3150.00	595.57	0.0	-0.04	0.0	97.50	90.00
51370.000	4450.00	597.09	1.53	0.09	0.0	97.50	90.00
51370.000	4900.00	597.45	0.36	-0.11	0.0	97.50	90.00
51370.000	5400.00	598.10	0.65	-0.13	0.0	150.01	90.00
51371.000	3150.00	595.57	0.0	0.00	0.0	97.50	1.00
51371.000	4450.00	597.09	1.53	0.00	0.0	97.50	1.00
51371.000	4900.00	597.46	0.36	0.00	0.0	97.50	1.00
51371.000	5400.00	598.08	0.62	0.03	0.0	145.62	1.00
51372.000	3150.00	595.58	0.0	0.01	0.0	97.50	18.00
51372.000	4450.00	597.11	1.53	0.02	0.0	97.50	18.00
51372.000	4900.00	597.47	0.36	0.02	0.0	97.50	18.00
51372.000	5400.00	598.12	0.65	0.04	0.0	151.71	18.00
51373.000	3150.00	595.58	0.0	0.00	0.0	97.50	1.00
51373.000	4450.00	597.11	1.53	0.00	0.0	97.50	1.00
51373.000	4900.00	597.47	0.36	0.00	0.0	97.50	1.00
51373.000	5400.00	598.20	0.73	0.08	0.0	167.28	1.00
51470.000	3150.00	595.87	0.0	0.29	0.0	350.00	90.00
51470.000	4450.00	597.53	1.66	0.42	0.0	350.00	90.00
51470.000	4900.00	597.95	0.42	0.47	0.0	350.00	90.00
51470.000	5400.00	598.70	0.75	0.50	0.0	350.00	90.00
52470.000	3150.00	596.04	0.0	0.17	0.0	501.39	925.00
52470.000	4450.00	597.68	1.64	0.15	0.0	587.57	925.00
52470.000	4900.00	598.10	0.42	0.16	0.0	603.55	925.00
52470.000	5400.00	598.85	0.74	0.14	0.0	630.00	925.00
53120.000	3150.00	596.14	0.0	0.10	0.0	167.12	650.00
53120.000	4450.00	597.59	1.45	0.10	0.0	188.81	650.00
53120.000	4900.00	597.96	0.37	0.15	0.0	194.34	650.00
53120.000	5400.00	598.64	0.68	-0.21	0.0	204.54	650.00

MOORE BUSINESS FORMS INC 27

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
53270.000	2600.00	596.86	0.0	0.72	0.0	560.00	440.00
53270.000	3750.00	598.52	1.66	0.93	0.0	560.00	440.00
53270.000	4050.00	598.97	0.45	1.01	0.0	560.00	440.00
53270.000	4500.00	599.66	0.70	1.03	0.0	560.00	440.00
54770.000	2600.00	597.32	0.0	0.46	0.0	338.71	1270.00
54770.000	3750.00	598.96	1.64	0.45	0.0	387.01	1270.00
54770.000	4050.00	599.40	0.44	0.43	0.0	396.98	1270.00
54770.000	4500.00	600.07	0.67	0.41	0.0	400.78	1270.00
55590.000	2600.00	597.67	0.0	0.35	0.0	280.80	925.00
55590.000	3750.00	599.29	1.62	0.32	0.0	288.16	925.00
55590.000	4050.00	599.71	0.42	0.31	0.0	289.26	925.00
55590.000	4500.00	600.36	0.65	0.28	0.0	293.58	925.00
56170.000	2600.00	597.85	0.0	0.17	0.0	149.15	840.00
56170.000	3750.00	599.38	1.53	0.09	0.0	195.00	840.00
56170.000	4050.00	599.78	0.40	0.06	0.0	195.00	840.00
56170.000	4500.00	600.39	0.61	0.03	0.0	195.00	840.00
56270.000	2600.00	598.37	0.0	0.53	0.0	99.48	280.00
56270.000	3750.00	600.07	1.70	0.70	0.0	99.64	280.00
56270.000	4050.00	600.50	0.42	0.72	0.0	99.68	280.00
56270.000	4500.00	601.13	0.64	0.74	0.0	99.73	280.00
56271.000	2600.00	598.38	0.0	0.00	0.0	99.48	1.00
56271.000	3750.00	600.07	1.70	0.00	0.0	99.64	1.00
56271.000	4050.00	600.50	0.42	0.00	0.0	99.68	1.00
56271.000	4500.30	601.13	0.64	0.00	0.0	99.73	1.00
56272.000	2600.00	598.39	0.0	0.01	0.0	99.49	18.00
56272.000	3750.00	600.08	1.70	0.01	0.0	99.64	18.00
56272.000	4050.00	600.51	0.43	0.01	0.0	99.68	18.00
56272.000	4500.00	601.15	0.64	0.01	0.0	99.73	18.00
56273.000	2600.00	598.39	0.0	0.00	0.0	99.49	1.00
56273.000	3750.00	600.08	1.70	0.00	0.0	99.64	1.00
56273.000	4050.00	600.51	0.43	0.00	0.0	99.68	1.00
56273.000	4500.00	601.15	0.64	0.00	0.0	99.73	1.00

SUMMARY OF ERRORS

MOORE BUSINESS FORMS, INC 27

SWAN CREEK
(A-3) Summary printout

MOORE BUSINESS FORMS, INC. 27

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10<*S	VCH	AREA	.01K
14520.000	0.0	0.0	0.0	574.50	3700.00	589.87	0.0	589.89	0.50	1.27	5436.27	5213.13
14520.000	0.0	0.0	0.0	574.50	5200.00	592.73	0.0	592.75	0.42	1.32	7938.67	8070.87
14520.000	0.0	0.0	0.0	574.50	5500.00	593.86	0.0	593.88	0.34	1.25	9143.75	9410.91
14520.000	0.0	0.0	0.0	574.50	5900.00	596.57	0.0	596.58	0.19	1.05	13388.07	13385.57
17540.000	3050.00	0.0	0.0	574.90	3700.00	590.06	0.0	590.09	0.89	1.57	4225.21	3913.05
17540.000	3050.00	0.0	0.0	574.90	5200.00	592.88	0.0	592.91	0.69	1.58	7202.71	6270.55
17540.000	3050.00	0.0	0.0	574.90	5500.00	593.98	0.0	594.00	0.54	1.55	9003.44	7498.27
17540.000	3050.00	0.0	0.0	574.90	5900.00	596.64	0.0	596.65	0.26	1.19	14596.96	11559.14
19335.000	1875.00	0.0	0.0	575.40	3700.00	590.27	0.0	590.41	3.81	3.37	1933.13	1896.80
19335.000	1875.00	0.0	0.0	575.40	5200.00	593.03	0.0	593.13	2.53	3.15	4552.14	3258.12
19335.000	1875.00	0.0	0.0	575.40	5500.00	594.10	0.0	594.17	1.81	2.79	5875.94	4083.86
19335.000	1875.00	0.0	0.0	575.40	5900.00	596.69	0.0	596.72	0.79	2.04	9216.50	5626.87
21420.000	2095.00	0.0	0.0	575.70	3700.00	590.77	0.0	590.82	1.17	1.90	3294.58	3415.84
21420.000	2095.00	0.0	0.0	575.70	5200.00	593.40	0.0	593.44	1.00	2.00	4966.93	5199.74
21420.000	2095.00	0.0	0.0	575.70	5500.00	594.37	0.0	594.41	0.85	1.92	5686.44	5932.32
21420.000	2095.00	0.0	0.0	575.70	5900.00	596.82	0.0	596.84	0.47	1.58	9266.70	8580.65
22680.000	1280.00	0.0	0.0	575.80	3700.00	590.89	0.0	590.92	0.53	1.28	4438.93	5087.96
22680.000	1280.00	0.0	0.0	575.80	5200.00	593.51	0.0	593.53	0.47	1.38	6625.88	7570.45
22680.000	1280.00	0.0	0.0	575.80	5500.00	594.47	0.0	594.49	0.40	1.33	7590.18	8646.01
22680.000	1280.00	0.0	0.0	575.80	5900.00	596.87	0.0	596.89	0.25	1.15	10221.23	11816.72
22870.000	245.00	0.0	0.0	577.50	3700.00	590.88	0.0	590.97	1.20	2.41	1537.33	3379.99
22870.000	245.00	0.0	0.0	577.50	5200.00	593.48	0.0	593.59	1.13	2.66	1954.78	4894.08
22870.000	245.00	0.0	0.0	577.50	5500.00	594.44	0.0	594.55	1.00	2.51	2109.06	5513.77
22870.000	245.00	0.0	0.0	577.50	5900.00	596.85	0.0	596.93	0.56	2.33	2695.32	7259.57
22871.000	31.00	595.10	593.60	577.50	3700.00	590.88	0.0	590.97	1.20	2.41	1538.02	3382.26
22871.000	31.00	595.10	593.60	577.50	5200.00	593.49	0.0	593.60	1.13	2.66	1955.72	4897.79
22871.000	31.00	595.10	593.60	577.50	5500.00	594.57	0.0	594.68	0.96	2.58	2130.40	5601.39
22871.000	31.00	595.10	593.60	577.50	5900.00	596.99	0.0	597.07	0.64	2.30	2746.70	7402.12
23000.000	100.00	0.0	0.0	577.20	3700.00	590.88	0.0	591.02	4.45	3.07	1205.54	1754.48
23000.000	100.00	0.0	0.0	577.20	5200.00	593.47	0.0	593.65	4.46	3.35	1550.01	2451.74
23000.000	100.00	0.0	0.0	577.20	5500.00	594.56	0.0	594.72	3.76	3.23	1705.43	2834.74
23000.000	100.00	0.0	0.0	577.20	5900.00	596.97	0.0	597.10	2.38	2.87	2055.17	3825.51

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
23001.000	14.50	599.50	596.90	577.20	3700.00	590.90	0.0	591.05	4.41	3.06	1209.15	1752.21
23001.000	14.50	599.50	596.90	577.20	5200.00	593.51	0.0	593.68	4.43	3.34	1554.65	2471.57
23001.000	14.50	599.50	596.90	577.20	5500.00	594.59	0.0	594.75	3.73	3.22	1709.69	2846.18
23001.000	14.50	599.50	596.90	577.20	5900.00	597.13	0.0	597.26	2.30	2.84	2076.58	3889.46
23285.000	280.00	0.0	0.0	576.40	3700.00	591.09	0.0	591.13	1.03	1.76	3579.97	3647.37
23285.000	280.00	0.0	0.0	576.40	5200.00	593.72	0.0	593.77	0.92	1.89	5135.61	5433.58
23285.000	280.00	0.0	0.0	576.40	5500.00	594.79	0.0	594.83	0.77	1.82	5773.25	6255.25
23285.000	280.00	0.0	0.0	576.40	5900.00	597.28	0.0	597.31	0.49	1.61	7270.32	8387.36
25000.000	1750.00	0.0	0.0	576.40	3700.00	591.25	0.0	591.27	0.53	1.48	4948.89	4646.98
25000.000	1750.00	0.0	0.0	576.40	5200.00	593.86	0.0	593.88	0.50	1.50	7296.79	7331.87
25000.000	1750.00	0.0	0.0	576.40	5500.00	594.90	0.0	594.92	0.40	1.40	8594.29	8717.37
25000.000	1750.00	0.0	0.0	576.40	5900.00	597.36	0.0	597.36	0.21	1.12	12150.84	12801.08
25800.000	1160.00	0.0	0.0	577.80	3700.00	591.31	0.0	591.32	0.36	1.31	4685.73	6196.09
25800.000	1160.00	0.0	0.0	577.80	5200.00	593.91	0.0	593.92	0.25	1.26	6930.71	10338.05
25800.000	1160.00	0.0	0.0	577.80	5500.00	594.94	0.0	594.95	0.20	1.17	7844.45	12299.70
25800.000	1160.00	0.0	0.0	577.80	5900.00	597.37	0.0	597.38	0.11	0.97	10155.48	17588.53
25900.000	90.00	0.0	0.0	577.60	3700.00	591.31	0.0	591.32	0.29	1.18	4283.23	6926.96
25900.000	90.00	0.0	0.0	577.60	5200.00	593.91	0.0	593.92	0.17	1.04	6672.16	12663.02
25900.000	90.00	0.0	0.0	577.60	5500.00	594.94	0.0	594.95	0.13	0.94	7665.70	15495.02
25900.000	90.00	0.0	0.0	577.60	5900.00	597.38	0.0	597.38	0.06	0.72	11421.05	23803.16
25901.000	1.00	583.10	586.20	577.60	3700.00	591.31	0.0	591.32	0.45	0.68	4162.36	5515.91
25901.000	1.00	583.10	586.20	577.60	5200.00	593.91	0.0	593.92	0.24	0.57	6551.81	10694.63
25901.000	1.00	583.10	586.20	577.60	5500.00	594.94	0.0	594.95	0.17	0.51	7544.91	13284.11
25901.000	1.00	583.10	586.20	577.60	5900.00	597.38	0.0	597.38	0.08	0.38	11302.40	20981.20
25902.000	12.50	583.10	586.20	577.60	3700.00	591.31	0.0	591.33	0.45	0.68	4162.16	5515.53
25902.000	12.50	583.10	586.20	577.60	5200.00	593.91	0.0	593.92	0.24	0.57	6551.35	10693.47
25902.000	12.50	583.10	586.20	577.60	5500.00	594.94	0.0	594.95	0.17	0.51	7544.20	13282.18
25902.000	12.50	583.10	586.20	577.60	5900.00	597.38	0.0	597.38	0.08	0.38	11301.46	20979.34
25903.000	1.00	0.0	0.0	577.60	3700.00	591.31	0.0	591.33	0.29	1.18	4284.81	5930.43
25903.000	1.00	0.0	0.0	577.60	5200.00	593.91	0.0	593.92	0.17	1.04	6573.79	12657.48
25903.000	1.00	0.0	0.0	577.60	5500.00	594.94	0.0	594.95	0.13	0.94	7566.54	15497.84
25903.000	1.00	0.0	0.0	577.60	5900.00	597.38	0.0	597.38	0.06	0.72	11423.90	23809.14
26000.000	80.00	0.0	0.0	578.00	3700.00	591.32	0.0	591.33	0.21	0.98	4374.12	8086.93
26000.000	80.00	0.0	0.0	578.00	5200.00	593.92	0.0	593.92	0.13	0.88	7391.57	14523.66
26000.000	80.00	0.0	0.0	578.00	5500.00	594.94	0.0	594.95	0.10	0.80	8436.43	17644.61
26000.000	80.00	0.0	0.0	578.00	5900.00	597.38	0.0	597.38	0.05	0.54	11077.99	26249.56
26320.000	290.00	0.0	0.0	578.00	3700.00	591.32	0.0	591.33	0.18	0.79	5557.18	8622.76
26320.000	290.00	0.0	0.0	578.00	5200.00	593.92	0.0	593.93	0.12	0.75	8296.56	14796.42
26320.000	290.00	0.0	0.0	578.00	5500.00	594.95	0.0	594.95	0.10	0.69	9442.61	17802.02
26320.000	290.00	0.0	0.0	578.00	5900.00	597.38	0.0	597.38	0.05	0.56	12227.35	25002.03
26720.000	465.00	0.0	0.0	577.40	3700.00	591.33	0.0	591.33	0.21	0.57	5811.70	8156.51
26720.000	465.00	0.0	0.0	577.40	5200.00	593.92	0.0	593.93	0.13	0.51	8607.95	14491.89
26720.000	465.00	0.0	0.0	577.40	5500.00	594.95	0.0	594.95	0.10	0.47	9810.22	17586.61
26720.000	465.00	0.0	0.0	577.40	5900.00	597.38	0.0	597.38	0.05	0.37	12653.52	26034.20

SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	ES	10K*S	VCH	AREA	.01K
26721.000	20.00	0.0	0.0	577.40	3700.00	591.33	0.0	591.33	0.21	0.57	5808.64	8149.98
26721.000	20.00	0.0	0.0	577.40	5200.00	593.92	0.0	593.93	0.13	0.51	8505.95	14487.00
26721.000	20.00	0.0	0.0	577.40	5500.00	594.95	0.0	594.95	0.10	0.47	9808.23	17581.21
26721.000	20.00	0.0	0.0	577.40	5900.00	597.38	0.0	597.38	0.05	0.37	12552.38	25030.51
26820.000	85.00	0.0	0.0	576.80	3700.00	591.33	0.0	591.34	0.20	0.88	5530.29	8321.37
26820.000	85.00	0.0	0.0	576.80	5200.00	593.92	0.0	593.93	0.13	0.81	8137.39	14404.54
26820.000	85.00	0.0	0.0	576.80	5500.00	594.95	0.0	594.96	0.10	0.74	9265.94	17333.75
26820.000	85.00	0.0	0.0	576.80	5900.00	597.38	0.0	597.38	0.05	0.60	11963.70	25424.95
27920.000	1385.00	0.0	0.0	577.50	3700.00	591.36	0.0	591.37	0.44	1.28	5290.06	5590.62
27920.000	1385.00	0.0	0.0	577.50	5200.00	593.94	0.0	593.96	0.34	1.29	7242.06	8857.77
27920.000	1385.00	0.0	0.0	577.50	5500.00	594.96	0.0	594.98	0.28	1.22	8042.95	10377.23
27920.000	1385.00	0.0	0.0	577.50	5900.00	597.39	0.0	597.40	0.17	1.04	10018.30	14394.10
29520.000	1545.00	0.0	0.0	578.30	3700.00	591.43	0.0	591.46	0.83	1.77	3910.98	4050.27
29520.000	1545.00	0.0	0.0	578.30	5200.00	594.00	0.0	594.02	0.67	1.80	5330.87	6357.34
29520.000	1545.00	0.0	0.0	578.30	5500.00	595.01	0.0	595.03	0.55	1.71	5913.93	7426.21
29520.000	1545.00	0.0	0.0	578.30	5900.00	597.41	0.0	597.43	0.33	1.46	7352.92	10257.44
29920.000	480.00	0.0	0.0	577.00	3700.00	591.46	0.0	591.53	1.37	2.10	1764.71	3153.99
29920.000	480.00	0.0	0.0	577.00	5200.00	594.01	0.0	594.10	1.43	2.41	2159.78	4342.30
29920.000	480.00	0.0	0.0	577.00	5500.00	595.01	0.0	595.10	1.29	2.38	2315.58	4839.05
29920.000	480.00	0.0	0.0	577.00	5900.00	597.41	0.0	597.48	0.94	2.20	2585.40	6086.93
29921.000	105.40	602.00	598.50	577.00	3700.00	591.46	0.0	591.53	1.37	2.10	1764.44	3153.24
29921.000	105.40	602.00	598.50	577.00	5200.00	594.01	0.0	594.10	1.44	2.41	2159.04	4339.98
29921.000	105.40	602.00	598.50	577.00	5500.00	595.01	0.0	595.10	1.29	2.38	2314.63	4835.99
29921.000	105.40	602.00	598.50	577.00	5900.00	597.41	0.0	597.48	0.94	2.20	2585.31	6083.12
30200.000	185.00	0.0	0.0	578.30	3700.00	591.54	0.0	591.55	0.24	1.28	4108.37	7533.98
30200.000	185.00	0.0	0.0	578.30	5200.00	594.11	0.0	594.13	0.18	1.25	5792.64	12353.24
30200.000	185.00	0.0	0.0	578.30	5500.00	595.12	0.0	595.13	0.14	1.17	6474.79	14591.69
30200.000	185.00	0.0	0.0	578.30	5900.00	597.50	0.0	597.51	0.08	0.98	8093.27	20556.59
30920.000	500.00	0.0	0.0	578.10	3700.00	591.55	0.0	591.57	0.27	1.35	4237.96	7114.48
30920.000	500.00	0.0	0.0	578.10	5200.00	594.12	0.0	594.14	0.19	1.27	6389.32	12038.37
30920.000	500.00	0.0	0.0	578.10	5500.00	595.13	0.0	595.14	0.14	1.18	7325.69	14473.94
30920.000	500.00	0.0	0.0	578.10	5900.00	597.50	0.0	597.51	0.08	0.94	9802.94	21271.53
31720.000	1100.00	0.0	0.0	578.10	3700.00	591.58	0.0	591.62	0.85	1.98	3540.79	4017.09
31720.000	1100.00	0.0	0.0	578.10	5200.00	594.13	0.0	594.19	0.74	2.12	4935.82	6035.61
31720.000	1100.00	0.0	0.0	578.10	5500.00	595.13	0.0	595.18	0.63	2.04	5536.20	6948.02
31720.000	1100.00	0.0	0.0	578.10	5900.00	597.50	0.0	597.54	0.39	1.77	7133.40	9426.45
33120.000	1405.00	0.0	0.0	578.10	3700.00	591.69	0.0	591.71	0.41	1.44	3558.59	5747.66
33120.000	1405.00	0.0	0.0	578.10	5200.00	594.23	0.0	594.25	0.30	1.39	5157.14	9473.48
33120.000	1405.00	0.0	0.0	578.10	5500.00	595.21	0.0	595.23	0.24	1.31	5779.04	11157.14
33120.000	1405.00	0.0	0.0	578.10	5900.00	597.55	0.0	597.57	0.14	1.09	7357.57	15756.27
34720.000	1385.00	0.0	0.0	577.10	3700.00	591.75	0.0	591.78	0.69	1.86	4372.11	4457.61
34720.000	1385.00	0.0	0.0	577.10	5200.00	594.28	0.0	594.30	0.46	1.73	6265.41	7707.24
34720.000	1385.00	0.0	0.0	577.10	5500.00	595.25	0.0	595.27	0.36	1.60	6994.44	9206.88
34720.000	1385.00	0.0	0.0	577.10	5900.00	597.58	0.0	597.59	0.20	1.30	8736.23	13289.20

MOORE BUSINESS FORMS INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	ES	10<*S	VCH	AREA	.01K
35720.000	995.00	0.0	0.0	577.70	3700.00	591.80	0.0	591.81	0.25	1.14	5010.41	7468.41
35720.000	995.00	0.0	0.0	577.70	5200.00	594.31	0.0	594.32	0.15	1.02	7396.25	13238.57
35720.000	995.00	0.0	0.0	577.70	5500.00	595.28	0.0	595.29	0.12	0.94	8362.48	15904.83
35720.000	995.00	0.0	0.0	577.70	5900.00	597.59	0.0	597.60	0.06	0.75	10790.71	23333.02
36450.000	735.00	0.0	0.0	577.70	3700.00	591.81	0.0	591.83	0.50	1.61	3244.70	5247.80
36450.000	735.00	0.0	0.0	577.70	5200.00	594.32	0.0	594.33	0.29	1.38	4990.72	9630.61
36450.000	735.00	0.0	0.0	577.70	5500.00	595.28	0.0	595.30	0.22	1.25	5698.81	11765.55
36450.000	735.00	0.0	0.0	577.70	5900.00	597.59	0.0	597.60	0.11	0.98	7519.22	17654.51
36550.000	75.00	0.0	0.0	577.20	3700.00	591.82	0.0	591.85	1.59	1.64	2577.58	2936.91
36550.000	75.00	0.0	0.0	577.20	5200.00	594.32	0.0	594.34	0.86	1.37	4149.87	5597.34
36550.000	75.00	0.0	0.0	577.20	5500.00	595.28	0.0	595.30	0.64	1.23	4761.14	5863.93
36550.000	75.00	0.0	0.0	577.20	5900.00	597.59	0.0	597.61	0.32	0.95	6347.10	10487.29
36551.000	7.70	0.0	0.0	577.20	3700.00	591.82	0.0	591.85	1.59	1.64	2578.53	2938.37
36551.000	7.70	0.0	0.0	577.20	5200.00	594.32	0.0	594.34	0.86	1.37	4149.42	5596.42
36551.000	7.70	0.0	0.0	577.20	5500.00	595.28	0.0	595.30	0.64	1.23	4760.52	6862.58
36551.000	7.70	0.0	0.0	577.20	5900.00	597.59	0.0	597.61	0.32	0.95	6346.38	10485.58
36800.000	180.00	0.0	0.0	577.70	3700.00	591.81	0.0	591.88	1.37	2.65	2327.14	3160.43
36800.000	180.00	0.0	0.0	577.70	5200.00	594.32	0.0	594.36	0.83	2.33	3672.01	5719.48
36800.000	180.00	0.0	0.0	577.70	5500.00	595.28	0.0	595.32	0.53	2.11	4236.09	6935.08
36800.000	180.00	0.0	0.0	577.70	5900.00	597.59	0.0	597.61	0.32	1.65	5708.58	10431.53
37000.000	230.00	0.0	0.0	578.10	3700.00	591.87	0.0	591.91	0.85	1.27	2582.49	4014.52
37000.000	230.00	0.0	0.0	578.10	5200.00	594.35	0.0	594.38	0.55	1.16	3743.43	7001.47
37000.000	230.00	0.0	0.0	578.10	5500.00	595.30	0.0	595.33	0.43	1.06	4226.29	8394.59
37000.000	230.00	0.0	0.0	578.10	5900.00	597.60	0.0	597.62	0.23	0.85	5492.57	12357.07
37001.000	7.70	0.0	0.0	578.10	3700.00	591.87	0.0	591.91	0.85	1.27	2582.92	4015.51
37001.000	7.70	0.0	0.0	578.10	5200.00	594.35	0.0	594.38	0.55	1.16	3746.51	7010.13
37001.000	7.70	0.0	0.0	578.10	5500.00	595.30	0.0	595.33	0.43	1.06	4230.06	8405.79
37001.000	7.70	0.0	0.0	578.10	5900.00	597.60	0.0	597.62	0.23	0.85	5493.73	12350.81
37220.000	110.00	0.0	0.0	579.30	3700.00	591.88	0.0	591.92	1.15	2.08	2767.50	3448.17
37220.000	110.00	0.0	0.0	579.30	5200.00	594.35	0.0	594.39	0.88	2.06	3881.25	5554.88
37220.000	110.00	0.0	0.0	579.30	5500.00	595.30	0.0	595.34	0.72	1.94	4328.39	6500.81
37220.000	110.00	0.0	0.0	579.30	5900.00	597.60	0.0	597.62	0.42	1.53	5451.49	9079.32
37320.000	195.00	0.0	0.0	579.10	3700.00	591.87	0.0	592.01	3.52	2.99	1236.81	1971.12
37320.000	195.00	0.0	0.0	579.10	5200.00	594.31	0.0	594.49	3.55	3.39	1534.25	2758.37
37320.000	195.00	0.0	0.0	579.10	5500.00	595.26	0.0	595.43	3.17	3.33	1650.32	3087.77
37320.000	195.00	0.0	0.0	579.10	5900.00	597.56	0.0	597.70	2.22	3.03	2116.85	3963.61
37321.000	1.00	597.10	597.50	579.10	3700.00	591.87	0.0	592.01	7.93	2.99	1236.84	1314.13
37321.000	1.00	597.10	597.50	579.10	5200.00	594.31	0.0	594.49	8.00	3.39	1534.28	1838.97
37321.000	1.00	597.10	597.50	579.10	5500.00	595.26	0.0	595.43	7.14	3.33	1650.32	2058.51
37321.000	1.00	597.10	597.50	579.10	5900.00	597.55	0.0	597.70	22.09	3.17	1946.33	1255.31
37322.000	19.00	597.10	597.50	579.10	3700.00	591.88	0.0	592.02	7.90	2.99	1238.20	1316.40
37322.000	19.00	597.10	597.50	579.10	5200.00	594.32	0.0	594.50	7.97	3.39	1535.65	1841.52
37322.000	19.00	597.10	597.50	579.10	5500.00	595.27	0.0	595.45	7.12	3.33	1651.54	2060.86
37322.000	19.00	597.10	597.50	579.10	5900.00	597.60	0.0	597.75	21.65	3.14	1966.57	1258.15

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SECNO	XLCH	ELTRO	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
37323.000	1.00	0.0	0.0	579.10	3700.00	591.88	0.0	592.02	3.86	2.99	1238.85	1882.13
37323.000	1.00	0.0	0.0	579.10	5200.00	594.33	0.0	594.50	3.90	3.38	1536.30	2632.48
37323.000	1.00	0.0	0.0	579.10	5500.00	595.27	0.0	595.45	3.49	3.33	1652.08	2945.56
37323.000	1.00	0.0	0.0	579.10	5900.00	597.61	0.0	597.75	2.42	3.03	2138.44	3791.67
37820.000	450.00	0.0	0.0	578.70	3700.00	592.12	0.0	592.14	0.93	1.50	5889.20	3826.93
37820.000	450.00	0.0	0.0	578.70	5200.00	594.59	0.0	594.61	0.59	1.35	8429.54	5753.95
37820.000	450.00	0.0	0.0	578.70	5500.00	595.53	0.0	595.54	0.46	1.25	9418.60	8077.32
37820.000	450.00	0.0	0.0	578.70	5900.00	597.80	0.0	597.81	0.25	1.01	11872.64	11811.27
39020.000	960.00	0.0	0.0	578.20	3700.00	592.18	0.0	592.20	0.49	1.01	3758.48	5230.43
39020.000	960.00	0.0	0.0	578.20	5200.00	594.64	0.0	594.65	0.36	0.98	5182.97	8704.59
39020.000	960.00	0.0	0.0	578.20	5500.00	595.56	0.0	595.58	0.29	0.93	5737.13	10176.59
39020.000	960.00	0.0	0.0	578.20	5900.00	597.82	0.0	597.83	0.17	0.78	7131.80	14187.66
44520.000	1705.00	0.0	0.0	582.90	3700.00	592.28	0.0	592.30	1.03	1.12	3417.41	3651.91
44520.000	1705.00	0.0	0.0	582.90	5200.00	594.70	0.0	594.71	0.45	0.89	5433.11	7715.14
44520.000	1705.00	0.0	0.0	582.90	5500.00	595.61	0.0	595.62	0.33	0.80	6224.57	9586.77
44520.000	1705.00	0.0	0.0	582.90	5900.00	597.85	0.0	597.86	0.16	0.63	8207.56	14923.05
45000.000	1205.00	0.0	0.0	582.90	3700.00	592.40	0.0	592.57	19.21	4.89	1728.91	844.25
45000.000	1205.00	0.0	0.0	582.90	5200.00	594.75	0.0	594.82	6.75	3.45	3172.69	2001.55
45000.000	1205.00	0.0	0.0	582.90	5500.00	595.64	0.0	595.70	4.60	3.01	3739.74	2553.93
45000.000	1205.00	0.0	0.0	582.90	5900.00	597.86	0.0	597.89	1.36	2.22	5166.95	4209.61
45520.000	1130.00	0.0	0.0	581.20	3700.00	593.73	0.0	593.86	6.96	3.58	1551.07	1402.24
45520.000	1130.00	0.0	0.0	581.20	5200.00	595.46	0.0	595.58	5.76	3.50	2200.86	2167.28
45520.000	1130.00	0.0	0.0	581.20	5500.00	596.17	0.0	596.26	4.66	3.24	2495.37	2546.76
45520.000	1130.00	0.0	0.0	581.20	5900.00	598.10	0.0	598.16	2.37	2.52	3357.05	3829.36
46870.000	1415.00	0.0	0.0	582.00	3700.00	594.03	0.0	594.04	0.49	1.13	4759.79	5301.80
46870.000	1415.00	0.0	0.0	582.00	5200.00	595.73	0.0	595.74	0.47	1.22	5981.62	7611.70
46870.000	1415.00	0.0	0.0	582.00	5500.00	596.40	0.0	596.41	0.41	1.18	6466.18	8612.41
46870.000	1415.00	0.0	0.0	582.00	5900.00	598.23	0.0	598.24	0.26	1.02	7941.75	11657.12
47620.000	755.00	0.0	0.0	582.00	3700.00	594.08	0.0	594.12	2.06	2.08	2737.02	2578.74
47620.000	755.00	0.0	0.0	582.00	5200.00	595.78	0.0	595.82	1.72	2.09	3598.88	3956.65
47620.000	755.00	0.0	0.0	582.00	5500.00	596.44	0.0	596.47	1.43	1.98	4089.04	4591.61
47620.000	755.00	0.0	0.0	582.00	5900.00	598.26	0.0	598.28	0.81	1.61	5213.17	6550.82
48570.000	1010.00	0.0	0.0	582.00	3700.00	594.29	0.0	594.33	2.34	2.25	3076.15	2419.62
48570.000	1010.00	0.0	0.0	582.00	5200.00	595.95	0.0	596.00	2.11	2.34	4074.33	3533.44
48570.000	1010.00	0.0	0.0	582.00	5500.00	596.59	0.0	596.62	1.81	2.24	4463.91	4035.81
48570.000	1010.00	0.0	0.0	582.00	5900.00	598.35	0.0	598.37	1.09	1.88	5572.18	5645.15
48600.000	945.00	0.0	0.0	582.00	3700.00	594.53	0.0	594.95	10.73	4.93	1244.61	1129.63
48600.000	945.00	0.0	0.0	582.00	5200.00	596.12	0.0	596.55	12.52	5.30	1596.54	1469.55
48600.000	945.00	0.0	0.0	582.00	5500.00	596.71	0.0	597.13	11.71	5.77	1735.77	1607.00
48600.000	945.00	0.0	0.0	582.00	5900.00	598.38	0.0	598.72	8.34	5.26	2179.19	2042.99
48820.000	425.00	0.0	0.0	581.00	3150.00	595.05	0.0	595.14	2.84	2.45	1285.80	1858.63
48820.000	425.00	0.0	0.0	581.00	4450.00	596.77	0.0	596.91	3.63	2.99	1485.91	2336.73
48820.000	425.00	0.0	0.0	581.00	4900.00	597.33	0.0	597.48	3.86	3.16	1549.94	2494.11
48820.000	425.00	0.0	0.0	581.00	5400.00	598.94	0.0	598.99	3.38	3.13	1728.02	2939.20

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
48821.000	29.40	599.20	595.20	581.00	3150.00	595.05	0.0	595.15	2.84	2.45	1285.93	1858.94
48821.000	29.40	599.20	595.20	581.00	4450.00	596.93	0.0	597.07	3.49	2.96	1504.26	2381.50
48821.000	29.40	599.20	595.20	581.00	4900.00	597.53	0.0	597.68	3.58	3.11	1573.83	2553.62
48821.000	29.40	599.20	595.20	581.00	5400.00	599.12	0.0	599.27	3.18	3.07	1778.89	3026.34
48920.000	100.00	0.0	0.0	582.40	3150.00	595.13	0.0	595.18	1.14	2.38	2360.73	2949.62
48920.000	100.00	0.0	0.0	582.40	4450.00	597.06	0.0	597.11	1.03	2.52	3113.50	4374.93
48920.000	100.00	0.0	0.0	582.40	4900.00	597.68	0.0	597.73	1.01	2.56	3354.87	4883.65
48920.000	100.00	0.0	0.0	582.40	5400.00	599.27	0.0	599.31	0.74	2.36	3975.00	6298.25
49220.000	250.00	0.0	0.0	581.60	3150.00	595.19	0.0	595.21	1.27	1.67	2892.56	2792.61
49220.000	250.00	0.0	0.0	581.60	4450.00	597.12	0.0	597.14	0.95	1.53	4064.80	4570.57
49220.000	250.00	0.0	0.0	581.60	4900.00	597.74	0.0	597.76	0.88	1.52	4452.07	5229.79
49220.000	250.00	0.0	0.0	581.60	5400.00	599.32	0.0	599.33	0.58	1.43	5460.49	7091.47
49870.000	595.00	0.0	0.0	583.60	3150.00	595.29	0.0	595.32	1.98	2.30	3958.80	2236.19
49870.000	595.00	0.0	0.0	583.60	4450.00	597.19	0.0	597.23	1.72	2.40	5320.58	3393.52
49870.000	595.00	0.0	0.0	583.60	4900.00	597.81	0.0	597.84	1.55	2.42	5773.75	3818.62
49870.000	595.00	0.0	0.0	583.60	5400.00	599.36	0.0	599.39	1.16	2.20	6951.11	5003.92
51270.000	1965.00	0.0	0.0	583.60	3150.00	595.65	0.0	595.75	2.58	3.17	1523.93	1925.89
51270.000	1965.00	0.0	0.0	583.60	4450.00	597.48	0.0	597.57	2.04	3.10	2165.43	3112.11
51270.000	1965.00	0.0	0.0	583.60	4900.00	598.07	0.0	598.17	1.90	3.08	2373.54	3554.45
51270.000	1965.00	0.0	0.0	583.60	5400.00	599.54	0.0	599.61	1.29	2.74	2387.15	4754.27
51370.000	90.00	0.0	0.0	584.30	3150.00	595.61	0.0	595.86	6.82	4.05	778.13	1206.31
51370.000	90.00	0.0	0.0	584.30	4450.00	597.39	0.0	597.73	7.25	4.68	951.53	1652.19
51370.000	90.00	0.0	0.0	584.30	4900.00	597.97	0.0	598.33	7.36	4.86	1010.45	1806.71
51370.000	90.00	0.0	0.0	584.30	5400.00	599.45	0.0	599.74	5.17	4.43	1520.36	2375.61
51371.000	1.00	597.80	598.30	584.30	3150.00	595.61	0.0	595.86	6.82	4.05	778.16	1206.37
51371.000	1.00	597.80	598.30	584.30	4450.00	597.39	0.0	597.73	7.25	4.68	951.52	1652.15
51371.000	1.00	597.80	598.30	584.30	4900.00	597.95	0.0	598.35	19.22	5.09	964.70	1117.83
51371.000	1.00	597.80	598.30	584.30	5400.00	599.46	0.0	599.74	22.31	4.54	1423.14	1143.18
51372.000	18.00	597.80	598.30	584.30	3150.00	595.62	0.0	595.88	6.78	4.04	779.38	1209.33
51372.000	18.00	597.80	598.30	584.30	4450.00	597.40	0.0	597.74	7.22	4.67	952.90	1655.61
51372.000	18.00	597.80	598.30	584.30	4900.00	597.98	0.0	598.39	19.21	5.09	965.30	1117.88
51372.000	18.00	597.80	598.30	584.30	5400.00	599.51	0.0	599.79	21.57	4.47	1451.17	1152.71
51373.000	1.00	0.0	0.0	584.30	3150.00	595.62	0.0	595.88	6.78	4.04	779.54	1209.74
51373.000	1.00	0.0	0.0	584.30	4450.00	597.40	0.0	597.74	7.22	4.67	953.07	1656.06
51373.000	1.00	0.0	0.0	584.30	4900.00	598.04	0.0	598.40	7.20	4.83	1019.92	1826.32
51373.000	1.00	0.0	0.0	584.30	5400.00	599.51	0.0	599.79	5.04	4.39	1549.87	2405.07
51470.000	90.00	0.0	0.0	583.50	3150.00	595.93	0.0	595.96	0.76	1.79	2803.18	3619.54
51470.000	90.00	0.0	0.0	583.50	4450.00	597.82	0.0	597.85	0.52	1.79	3784.77	5661.49
51470.000	90.00	0.0	0.0	583.50	4900.00	598.49	0.0	598.51	0.57	1.79	4130.20	6473.66
51470.000	90.00	0.0	0.0	583.50	5400.00	599.85	0.0	599.88	0.42	1.64	4840.50	8285.08
52470.000	925.00	0.0	0.0	584.30	3150.00	596.04	0.0	596.12	3.49	2.90	1874.91	1686.87
52470.000	925.00	0.0	0.0	584.30	4450.00	597.91	0.0	597.96	2.15	2.58	2929.28	3032.63
52470.000	925.00	0.0	0.0	584.30	4900.00	598.57	0.0	598.61	1.83	2.48	3346.87	3619.36
52470.000	925.00	0.0	0.0	584.30	5400.00	599.91	0.0	599.94	1.16	2.12	4238.12	5014.88

MOORE BUSINESS FORMS INC 27

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	ES	10<*S	VCH	AREA	.01K
53120.000	650.00	0.0	0.0	584.30	3150.00	596.22	0.0	596.50	9.13	5.13	1445.44	1042.55
53120.000	650.00	0.0	0.0	584.30	4450.00	597.94	0.0	598.28	9.95	5.87	1943.71	1410.90
53120.000	650.00	0.0	0.0	584.30	4900.00	598.57	0.0	598.91	9.84	6.02	2151.59	1552.02
53120.000	650.00	0.0	0.0	584.30	5400.00	599.86	0.0	600.16	7.96	5.75	2635.13	1913.40
53270.000	440.00	0.0	0.0	584.60	2600.00	596.71	0.0	596.78	3.54	2.88	3085.80	1353.54
53270.000	440.00	0.0	0.0	584.60	3750.00	598.50	0.0	598.56	3.15	2.97	4349.38	2114.21
53270.000	440.00	0.0	0.0	584.60	4050.00	599.12	0.0	599.18	2.82	2.90	4795.41	2412.04
53270.000	440.00	0.0	0.0	584.60	4500.00	600.33	0.0	600.37	2.19	2.70	5677.26	3043.88
54770.000	1270.00	0.0	0.0	584.20	2600.00	597.18	0.0	597.31	4.65	3.48	1396.76	1206.35
54770.000	1270.00	0.0	0.0	584.20	3750.00	598.91	0.0	599.03	4.18	3.62	2017.91	1833.53
54770.000	1270.00	0.0	0.0	584.20	4050.00	599.49	0.0	599.60	3.78	3.53	2245.19	2084.34
54770.000	1270.00	0.0	0.0	584.20	4500.00	600.61	0.0	600.70	2.91	3.26	2695.72	2639.79
55590.000	925.00	0.0	0.0	584.30	2600.00	597.56	0.0	597.64	2.65	3.00	1410.41	1598.34
55590.000	925.00	0.0	0.0	584.30	3750.00	599.24	0.0	599.33	2.42	3.10	1898.51	2409.56
55590.000	925.00	0.0	0.0	584.30	4050.00	599.79	0.0	599.87	2.23	3.05	2064.11	2711.91
55590.000	925.00	0.0	0.0	584.30	4500.00	600.84	0.0	600.91	1.79	2.86	2396.74	3356.25
56170.000	840.00	0.0	0.0	585.80	2600.00	597.75	0.0	598.12	12.45	5.33	814.67	736.84
56170.000	840.00	0.0	0.0	585.80	3750.00	599.34	0.0	599.94	15.16	6.41	1124.03	963.26
56170.000	840.00	0.0	0.0	585.80	4050.00	599.85	0.0	600.37	14.95	6.54	1233.28	1047.30
56170.000	840.00	0.0	0.0	585.80	4500.00	600.85	0.0	601.34	13.50	6.51	1451.04	1224.64
56270.000	280.00	0.0	0.0	585.90	2600.00	598.29	0.0	598.42	5.68	2.85	912.51	1090.49
56270.000	280.00	0.0	0.0	585.90	3750.00	600.03	0.0	600.22	6.90	3.45	1085.64	1427.54
56270.000	280.00	0.0	0.0	585.90	4050.00	600.54	0.0	600.74	6.99	3.56	1136.44	1531.67
56270.000	280.00	0.0	0.0	585.90	4500.00	601.48	0.0	601.69	6.77	3.56	1230.15	1729.51
56271.000	1.00	602.80	604.20	585.90	2600.00	598.29	0.0	598.42	5.68	2.85	912.56	1090.58
56271.000	1.00	602.80	604.20	585.90	3750.00	600.03	0.0	600.22	6.90	3.45	1085.74	1427.73
56271.000	1.00	602.80	604.20	585.90	4050.00	600.54	0.0	600.74	6.99	3.56	1136.54	1531.87
56271.000	1.00	602.80	604.20	585.90	4500.00	601.48	0.0	601.69	6.77	3.56	1230.20	1729.61
56272.000	18.00	602.80	604.20	585.90	2600.00	598.30	0.0	598.43	5.66	2.85	913.53	1092.39
56272.000	18.00	602.80	604.20	585.90	3750.00	600.05	0.0	600.23	6.88	3.45	1086.90	1430.10
56272.000	18.00	602.80	604.20	585.90	4050.00	600.56	0.0	600.75	6.97	3.56	1137.73	1534.34
56272.000	18.00	602.80	604.20	585.90	4500.00	601.50	0.0	601.70	6.75	3.55	1231.37	1732.12
56273.000	1.00	0.0	0.0	585.90	2600.00	598.31	0.0	598.43	5.66	2.85	913.63	1092.57
56273.000	1.00	0.0	0.0	585.90	3750.00	600.05	0.0	600.23	6.87	3.45	1087.00	1430.30
56273.000	1.00	0.0	0.0	585.90	4050.00	600.56	0.0	600.75	6.97	3.56	1137.83	1534.55
56273.000	1.00	0.0	0.0	585.90	4500.00	601.50	0.0	601.70	6.75	3.55	1231.46	1732.33

MOORE BUSINESS FORMS INC 27

SWAN CREEK

SUMMARY PRINTOUT TABLE 150

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
14520.000	3700.00	589.87	0.0	0.0	0.0	746.36	0.0
14520.000	5200.00	592.73	2.86	0.0	0.0	1012.08	0.0
14520.000	5500.00	593.86	1.13	0.0	0.0	1120.57	0.0
14520.000	5900.00	596.57	2.71	0.0	0.0	1850.00	0.0
17540.000	3700.00	590.06	0.0	0.19	0.0	637.21	3050.00
17540.000	5200.00	592.88	2.82	0.15	0.0	1472.45	3050.00
17540.000	5500.00	593.98	1.10	0.12	0.0	1798.37	3050.00
17540.000	5900.00	596.64	2.65	0.07	0.0	2328.10	3050.00
19335.000	3700.00	590.27	0.0	0.21	0.0	410.05	1875.00
19335.000	5200.00	593.03	2.76	0.15	0.0	1221.26	1875.00
19335.000	5500.00	594.10	1.07	0.12	0.0	1263.91	1875.00
19335.000	5900.00	596.69	2.59	0.05	0.0	1300.00	1875.00
21420.000	3700.00	590.77	0.0	0.50	0.0	563.16	2095.00
21420.000	5200.00	593.40	2.63	0.37	0.0	710.25	2095.00
21420.000	5500.00	594.37	0.98	0.28	0.0	764.88	2095.00
21420.000	5900.00	596.32	2.44	0.13	0.0	1700.00	2095.00
22680.000	3700.00	590.89	0.0	0.12	0.0	714.01	1280.00
22680.000	5200.00	593.51	2.61	0.11	0.0	959.67	1280.00
22680.000	5500.00	594.47	0.96	0.09	0.0	1049.88	1280.00
22680.000	5900.00	596.87	2.40	0.05	0.0	1100.00	1280.00
22870.000	3700.00	590.88	0.0	-0.02	0.0	157.78	245.00
22870.000	5200.00	593.48	2.60	-0.03	0.0	161.00	245.00
22870.000	5500.00	594.44	0.96	-0.03	0.0	161.00	245.00
22870.000	5900.00	596.85	2.41	-0.03	0.0	366.00	245.00
22871.000	3700.00	590.88	0.0	0.00	0.0	157.80	31.00
22871.000	5200.00	593.49	2.60	0.01	0.0	161.00	31.00
22871.000	5500.00	594.57	1.08	0.13	0.0	161.00	31.00
22871.000	5900.00	596.99	2.41	0.14	0.0	366.00	31.00
23000.000	3700.00	590.88	0.0	-0.01	0.0	125.04	100.00
23000.000	5200.00	593.47	2.60	-0.01	0.0	140.70	100.00
23000.000	5500.00	594.56	1.09	-0.01	0.0	144.10	100.00
23000.000	5900.00	596.97	2.41	-0.01	0.0	144.51	100.00
23001.000	3700.00	590.90	0.0	0.03	0.0	125.14	14.50
23001.000	5200.00	593.51	2.60	0.03	0.0	140.90	14.50
23001.000	5500.00	594.59	1.08	0.03	0.0	144.10	14.50
23001.000	5900.00	597.13	2.54	0.16	0.0	144.54	14.50
23285.000	3700.00	591.09	0.0	0.19	0.0	568.64	280.00
23285.000	5200.00	593.72	2.63	0.22	0.0	600.00	280.00
23285.000	5500.00	594.79	1.06	0.20	0.0	600.00	280.00
23285.000	5900.00	597.28	2.50	0.15	0.0	600.00	280.00
25000.000	3700.00	591.25	0.0	0.16	0.0	687.52	1750.00
25000.000	5200.00	593.86	2.61	0.14	0.0	1227.66	1750.00
25000.000	5500.00	594.90	1.04	0.12	0.0	1410.00	1750.00
25000.000	5900.00	597.36	2.45	0.08	0.0	1410.00	1750.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
25800.000	3700.00	591.31	0.0	0.05	0.0	802.67	1160.00
25800.000	5200.00	593.91	2.60	0.04	0.0	884.76	1160.00
25800.000	5500.00	594.94	1.03	0.03	0.0	887.34	1160.00
25800.000	5900.00	597.37	2.44	0.02	0.0	1100.57	1160.00
25900.000	3700.00	591.31	0.0	0.01	0.0	809.22	90.00
25900.000	5200.00	593.91	2.60	0.01	0.0	958.89	90.00
25900.000	5500.00	594.94	1.03	0.00	0.0	968.44	90.00
25900.000	5900.00	597.38	2.43	0.00	0.0	1945.88	90.00
25901.000	3700.00	591.31	0.0	-0.00	0.0	809.35	1.00
25901.000	5200.00	593.91	2.60	-0.00	0.0	958.91	1.00
25901.000	5500.00	594.94	1.03	-0.00	0.0	968.46	1.00
25901.000	5900.00	597.38	2.44	-0.00	0.0	1945.95	1.00
25902.000	3700.00	591.31	0.0	0.00	0.0	809.33	12.50
25902.000	5200.00	593.91	2.60	0.00	0.0	958.91	12.50
25902.000	5500.00	594.94	1.03	0.0	0.0	968.45	12.50
25902.000	5900.00	597.38	2.44	0.0	0.0	1945.93	12.50
25903.000	3700.00	591.31	0.0	0.00	0.0	809.35	1.00
25903.000	5200.00	593.91	2.60	0.00	0.0	958.91	1.00
25903.000	5500.00	594.94	1.03	0.00	0.0	968.45	1.00
25903.000	5900.00	597.38	2.43	0.00	0.0	1945.93	1.00
26000.000	3700.00	591.32	0.0	0.01	0.0	906.91	80.00
26000.000	5200.00	593.92	2.60	0.00	0.0	1003.05	80.00
26000.000	5500.00	594.94	1.03	0.00	0.0	1026.22	80.00
26000.000	5900.00	597.38	2.43	0.00	0.0	1198.79	80.00
26320.000	3700.00	591.32	0.0	0.01	0.0	894.63	290.00
26320.000	5200.00	593.92	2.59	0.00	0.0	1112.19	290.00
26320.000	5500.00	594.95	1.03	0.00	0.0	1116.05	290.00
26320.000	5900.00	597.38	2.43	0.00	0.0	1211.93	290.00
26720.000	3700.00	591.33	0.0	0.00	0.0	959.92	465.00
26720.000	5200.00	593.92	2.59	0.00	0.0	1170.00	465.00
26720.000	5500.00	594.95	1.03	0.00	0.0	1170.00	465.00
26720.000	5900.00	597.38	2.43	0.00	0.0	1170.00	465.00
26721.000	3700.00	591.33	0.0	0.0	0.0	959.83	20.00
26721.000	5200.00	593.92	2.59	0.00	0.0	1170.00	20.00
26721.000	5500.00	594.95	1.03	0.0	0.0	1170.00	20.00
26721.000	5900.00	597.38	2.43	0.0	0.0	1170.00	20.00
26820.000	3700.00	591.33	0.0	0.00	0.0	899.93	85.00
26820.000	5200.00	593.92	2.59	0.00	0.0	1066.22	85.00
26820.000	5500.00	594.95	1.03	0.0	0.0	1110.00	85.00
26820.000	5900.00	597.38	2.43	0.0	0.0	1110.00	85.00
27920.000	3700.00	591.36	0.0	0.03	0.0	723.81	1385.00
27920.000	5200.00	593.94	2.58	0.02	0.0	776.80	1385.00
27920.000	5500.00	594.96	1.02	0.01	0.0	788.31	1385.00
27920.000	5900.00	597.39	2.42	0.01	0.0	859.42	1385.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
29520.000	3700.00	591.43	0.0	0.08	0.0	535.08	1545.00
29520.000	5200.00	594.00	2.56	0.06	0.0	569.98	1545.00
29520.000	5500.00	595.01	1.01	0.05	0.0	582.62	1545.00
29520.000	5900.00	597.41	2.40	0.03	0.0	621.39	1545.00
29920.000	3700.00	591.46	0.0	0.03	0.0	154.80	480.00
29920.000	5200.00	594.01	2.55	0.01	0.0	154.80	480.00
29920.000	5500.00	595.01	1.01	0.00	0.0	154.80	480.00
29920.000	5900.00	597.41	2.39	-0.01	0.0	154.80	480.00
29921.000	3700.00	591.46	0.0	0.00	0.0	154.80	105.40
29921.000	5200.00	594.01	2.55	0.00	0.0	154.80	105.40
29921.000	5500.00	595.01	1.01	0.00	0.0	154.80	105.40
29921.000	5900.00	597.41	2.39	0.00	0.0	154.80	105.40
30200.000	3700.00	591.54	0.0	0.08	0.0	601.91	185.00
30200.000	5200.00	594.11	2.58	0.10	0.0	680.00	185.00
30200.000	5500.00	595.12	1.00	0.10	0.0	680.00	185.00
30200.000	5900.00	597.50	2.38	0.09	0.0	680.00	185.00
30920.000	3700.00	591.55	0.0	0.01	0.0	762.37	500.00
30920.000	5200.00	594.12	2.57	0.01	0.0	905.77	500.00
30920.000	5500.00	595.13	1.00	0.01	0.0	961.89	500.00
30920.000	5900.00	597.50	2.38	0.01	0.0	1137.81	500.00
31720.000	3700.00	591.58	0.0	0.03	0.0	504.28	1100.00
31720.000	5200.00	594.13	2.56	0.01	0.0	585.83	1100.00
31720.000	5500.00	595.13	1.00	0.00	0.0	618.00	1100.00
31720.000	5900.00	597.50	2.37	-0.00	0.0	749.08	1100.00
33120.000	3700.00	591.69	0.0	0.11	0.0	557.52	1405.00
33120.000	5200.00	594.23	2.54	0.10	0.0	620.74	1405.00
33120.000	5500.00	595.21	0.98	0.08	0.0	645.30	1405.00
33120.000	5900.00	597.55	2.34	0.05	0.0	701.91	1405.00
34720.000	3700.00	591.75	0.0	0.07	0.0	742.28	1385.00
34720.000	5200.00	594.28	2.53	0.05	0.0	750.00	1385.00
34720.000	5500.00	595.25	0.97	0.04	0.0	750.00	1385.00
34720.000	5900.00	597.58	2.33	0.02	0.0	750.00	1385.00
35720.000	3700.00	591.80	0.0	0.05	0.0	909.92	995.00
35720.000	5200.00	594.31	2.51	0.03	0.0	986.53	995.00
35720.000	5500.00	595.28	0.97	0.03	0.0	1014.29	995.00
35720.000	5900.00	597.59	2.31	0.02	0.0	1086.78	995.00
36450.000	3700.00	591.81	0.0	0.01	0.0	665.41	735.00
36450.000	5200.00	594.32	2.51	0.01	0.0	724.39	735.00
36450.000	5500.00	595.28	0.97	0.00	0.0	744.88	735.00
36450.000	5900.00	597.59	2.31	0.00	0.0	844.11	735.00
36550.000	3700.00	591.82	0.0	0.00	0.0	553.54	75.00
36550.000	5200.00	594.32	2.50	0.00	0.0	620.88	75.00
36550.000	5500.00	595.28	0.96	0.00	0.0	646.21	75.00
36550.000	5900.00	597.59	2.31	-0.00	0.0	734.80	75.00

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
36551.000	3700.00	591.82	0.0	0.00	0.0	553.60	7.70
36551.000	5200.00	594.32	2.50	0.00	0.0	620.86	7.70
36551.000	5500.00	595.28	0.96	0.00	0.0	646.18	7.70
36551.000	5900.00	597.59	2.31	0.00	0.0	734.76	7.70
36800.000	3700.00	591.81	0.0	-0.00	0.0	498.01	180.00
36800.000	5200.00	594.32	2.50	-0.00	0.0	571.82	180.00
36800.000	5500.00	595.28	0.97	-0.00	0.0	599.51	180.00
36800.000	5900.00	597.59	2.31	-0.00	0.0	677.99	180.00
37000.000	3700.00	591.37	0.0	0.06	0.0	445.08	230.00
37000.000	5200.00	594.35	2.47	0.03	0.0	495.98	230.00
37000.000	5500.00	595.30	0.96	0.02	0.0	515.56	230.00
37000.000	5900.00	597.60	2.30	0.01	0.0	592.02	230.00
37001.000	3700.00	591.87	0.0	0.00	0.0	445.10	7.70
37001.000	5200.00	594.35	2.47	0.00	0.0	496.11	7.70
37001.000	5500.00	595.30	0.96	0.00	0.0	515.71	7.70
37001.000	5900.00	597.60	2.30	0.0	0.0	592.10	7.70
37220.000	3700.00	591.88	0.0	0.00	0.0	437.37	110.00
37220.000	5200.00	594.35	2.47	0.00	0.0	463.52	110.00
37220.000	5500.00	595.30	0.96	0.00	0.0	473.07	110.00
37220.000	5900.00	597.60	2.30	-0.00	0.0	508.08	110.00
37320.000	3700.00	591.87	0.0	-0.01	0.0	121.48	195.00
37320.000	5200.00	594.31	2.44	-0.04	0.0	122.00	195.00
37320.000	5500.00	595.26	0.95	-0.04	0.0	122.00	195.00
37320.000	5900.00	597.56	2.30	-0.04	0.0	520.00	195.00
37321.000	3700.00	591.87	0.0	0.00	0.0	121.48	1.00
37321.000	5200.00	594.31	2.44	0.00	0.0	122.00	1.00
37321.000	5500.00	595.26	0.95	0.00	0.0	122.00	1.00
37321.000	5900.00	597.55	2.29	-0.01	0.0	520.00	1.00
37322.000	3700.00	591.88	0.0	0.02	0.0	121.48	19.00
37322.000	5200.00	594.32	2.44	0.02	0.0	122.00	19.00
37322.000	5500.00	595.27	0.95	0.01	0.0	122.00	19.00
37322.000	5900.00	597.60	2.32	0.04	0.0	520.00	19.00
37323.000	3700.00	591.88	0.0	0.00	0.0	121.48	1.00
37323.000	5200.00	594.33	2.44	0.00	0.0	122.00	1.00
37323.000	5500.00	595.27	0.95	0.00	0.0	122.00	1.00
37323.000	5900.00	597.61	2.33	0.01	0.0	520.00	1.00
37820.000	3700.00	592.12	0.0	0.24	0.0	988.25	450.00
37820.000	5200.00	594.59	2.48	0.27	0.0	1056.58	450.00
37820.000	5500.00	595.53	0.93	0.25	0.0	1068.83	450.00
37820.000	5900.00	597.80	2.28	0.20	0.0	1097.03	450.00
39020.000	3700.00	592.18	0.0	0.06	0.0	567.06	960.00
39020.000	5200.00	594.64	2.45	0.04	0.0	594.65	960.00
39020.000	5500.00	595.56	0.92	0.03	0.0	605.04	960.00
39020.000	5900.00	597.82	2.26	0.02	0.0	628.20	960.00

MOORE BUSINESS FORMS INC 27

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
44520.000	3700.00	592.28	0.0	0.10	0.0	815.12	1705.00
44520.000	5200.00	594.70	2.41	0.06	0.0	857.30	1705.00
44520.000	5500.00	595.61	0.91	0.05	0.0	873.31	1705.00
44520.000	5900.00	597.85	2.24	0.03	0.0	898.53	1705.00
45000.000	3700.00	592.40	0.0	0.11	0.0	607.99	1205.00
45000.000	5200.00	594.75	2.35	0.05	0.0	625.55	1205.00
45000.000	5500.00	595.64	0.90	0.04	0.0	632.31	1205.00
45000.000	5900.00	597.86	2.22	0.02	0.0	651.32	1205.00
45520.000	3700.00	593.73	0.0	1.33	0.0	347.24	1130.00
45520.000	5200.00	595.46	1.73	0.71	0.0	404.06	1130.00
45520.000	5500.00	596.17	0.71	0.52	0.0	425.44	1130.00
45520.000	5900.00	598.10	1.93	0.24	0.0	465.57	1130.00
46870.000	3700.00	594.03	0.0	0.30	0.0	707.67	1415.00
46870.000	5200.00	595.73	1.70	0.27	0.0	722.62	1415.00
46870.000	5500.00	596.40	0.67	0.23	0.0	731.91	1415.00
46870.000	5900.00	598.23	1.84	0.13	0.0	764.10	1415.00
47620.000	3700.00	594.08	0.0	0.05	0.0	549.26	755.00
47620.000	5200.00	595.78	1.70	0.05	0.0	585.29	755.00
47620.000	5500.00	596.44	0.66	0.04	0.0	598.75	755.00
47620.000	5900.00	598.26	1.82	0.02	0.0	635.19	755.00
48570.000	3700.00	594.29	0.0	0.21	0.0	586.04	1010.00
48570.000	5200.00	595.95	1.67	0.18	0.0	612.28	1010.00
48570.000	5500.00	596.59	0.63	0.15	0.0	619.89	1010.00
48570.000	5900.00	598.35	1.76	0.09	0.0	640.56	1010.00
48600.000	3700.00	594.53	0.0	0.24	0.0	207.91	945.00
48600.000	5200.00	596.12	1.59	0.17	0.0	232.88	945.00
48600.000	5500.00	596.71	0.59	0.12	0.0	245.96	945.00
48600.000	5900.00	598.38	1.67	0.04	0.0	283.63	945.00
48820.000	3150.00	595.05	0.0	0.52	0.0	115.70	425.00
48820.000	4450.00	596.77	1.72	0.65	0.0	115.70	425.00
48820.000	4900.00	597.33	0.55	0.62	0.0	115.70	425.00
48820.000	5400.00	598.84	1.51	0.45	0.0	150.71	425.00
48821.000	3150.00	595.05	0.0	0.00	0.0	115.70	29.40
48821.000	4450.00	596.93	1.88	0.16	0.0	115.70	29.40
48821.000	4900.00	597.53	0.60	0.21	0.0	115.70	29.40
48821.000	5400.00	599.12	1.59	0.28	0.0	206.37	29.40
48920.000	3150.00	595.13	0.0	0.08	0.0	390.00	100.00
48920.000	4450.00	597.06	1.93	0.13	0.0	390.00	100.00
48920.000	4900.00	597.68	0.62	0.15	0.0	390.00	100.00
48920.000	5400.00	599.27	1.59	0.15	0.0	390.00	100.00
49220.000	3150.00	595.19	0.0	0.06	0.0	585.45	250.00
49220.000	4450.00	597.12	1.93	0.06	0.0	619.70	250.00
49220.000	4900.00	597.74	0.62	0.06	0.0	627.85	250.00
49220.000	5400.00	599.32	1.58	0.05	0.0	648.59	250.00

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
49870.000	3150.00	595.29	0.0	0.09	0.0	696.46	595.00
49870.000	4450.00	597.19	1.91	0.07	0.0	730.75	595.00
49870.000	4900.00	597.81	0.61	0.07	0.0	741.52	595.00
49870.000	5400.00	599.36	1.56	0.05	0.0	768.80	595.00
51270.000	3150.00	595.65	0.0	0.36	0.0	350.00	1965.00
51270.000	4450.00	597.48	1.83	0.29	0.0	350.00	1965.00
51270.000	4900.00	598.07	0.59	0.27	0.0	350.00	1965.00
51270.000	5400.00	599.54	1.47	0.18	0.0	350.00	1965.00
51370.000	3150.00	595.61	0.0	-0.04	0.0	97.50	90.00
51370.000	4450.00	597.39	1.78	-0.09	0.0	97.50	90.00
51370.000	4900.00	597.97	0.58	-0.11	0.0	126.38	90.00
51370.000	5400.00	599.45	1.49	-0.09	0.0	528.62	90.00
51371.000	3150.00	595.61	0.0	0.00	0.0	97.50	1.00
51371.000	4450.00	597.39	1.78	0.00	0.0	97.50	1.00
51371.000	4900.00	597.95	0.56	-0.02	0.0	124.94	1.00
51371.000	5400.00	599.46	1.50	0.00	0.0	528.74	1.00
51372.000	3150.00	595.62	0.0	0.01	0.0	97.50	18.00
51372.000	4450.00	597.40	1.78	0.01	0.0	97.50	18.00
51372.000	4900.00	597.98	0.58	0.03	0.0	128.51	18.00
51372.000	5400.00	599.51	1.52	0.05	0.0	539.90	18.00
51373.000	3150.00	595.62	0.0	0.00	0.0	97.50	1.00
51373.000	4450.00	597.40	1.78	0.00	0.0	97.50	1.00
51373.000	4900.00	598.04	0.64	0.05	0.0	138.73	1.00
51373.000	5400.00	599.51	1.47	-0.00	0.0	540.39	1.00
51470.000	3150.00	595.93	0.0	0.31	0.0	520.00	90.00
51470.000	4450.00	597.82	1.89	0.42	0.0	520.00	90.00
51470.000	4900.00	598.49	0.66	0.45	0.0	520.00	90.00
51470.000	5400.00	599.85	1.37	0.35	0.0	520.00	90.00
52470.000	3150.00	596.04	0.0	0.11	0.0	501.75	925.00
52470.000	4450.00	597.91	1.86	0.09	0.0	620.43	925.00
52470.000	4900.00	598.57	0.66	0.08	0.0	650.34	925.00
52470.000	5400.00	599.91	1.34	0.06	0.0	669.32	925.00
53120.000	3150.00	596.22	0.0	0.17	0.0	254.63	550.00
53120.000	4450.00	597.94	1.73	0.04	0.0	322.80	650.00
53120.000	4900.00	598.57	0.62	0.0	0.0	347.31	650.00
53120.000	5400.00	599.86	1.30	-0.04	0.0	398.62	550.00
53270.000	2600.00	596.71	0.0	0.49	0.0	697.41	440.00
53270.000	3750.00	598.50	1.79	0.56	0.0	716.03	440.00
53270.000	4050.00	599.12	0.62	0.56	0.0	722.51	440.00
53270.000	4500.00	600.33	1.21	0.47	0.0	734.28	440.00
54770.000	2600.00	597.18	0.0	0.47	0.0	335.72	1270.00
54770.000	3750.00	598.91	1.73	0.41	0.0	385.42	1270.00
54770.000	4050.00	599.49	0.58	0.37	0.0	397.49	1270.00
54770.000	4500.00	600.61	1.12	0.28	0.0	403.84	1270.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
55590.000	2600.00	597.56	0.0	0.38	0.0	279.39	925.00
55590.000	3750.00	599.24	1.68	0.33	0.0	300.57	925.00
55590.000	4050.00	599.79	0.55	0.30	0.0	307.42	925.00
55590.000	4500.00	600.84	1.05	0.23	0.0	323.81	925.00
56170.000	2600.00	597.75	0.0	0.19	0.0	150.04	840.00
56170.000	3750.00	599.34	1.59	0.09	0.0	212.03	840.00
56170.000	4050.00	599.85	0.51	0.06	0.0	215.10	840.00
56170.000	4500.00	600.85	1.00	0.01	0.0	221.09	840.00
56270.000	2600.00	598.29	0.0	0.54	0.0	99.48	280.00
56270.000	3750.00	600.03	1.74	0.70	0.0	99.63	280.00
56270.000	4050.00	600.54	0.51	0.69	0.0	99.68	280.00
56270.000	4500.00	601.48	0.94	0.63	0.0	99.76	280.00
56271.000	2600.00	598.29	0.0	0.00	0.0	99.48	1.00
56271.000	3750.00	600.03	1.74	0.00	0.0	99.63	1.00
56271.000	4050.00	600.54	0.51	0.00	0.0	99.68	1.00
56271.000	4500.00	601.48	0.94	0.00	0.0	99.76	1.00
56272.000	2600.00	598.30	0.0	0.01	0.0	99.48	18.00
56272.000	3750.00	600.05	1.74	0.01	0.0	99.63	18.00
56272.000	4050.00	600.56	0.51	0.01	0.0	99.68	18.00
56272.000	4500.00	601.50	0.94	0.01	0.0	99.77	18.00
56273.000	2600.00	598.31	0.0	0.00	0.0	99.48	1.00
56273.000	3750.00	600.05	1.74	0.00	0.0	99.63	1.00
56273.000	4050.00	600.56	0.51	0.00	0.0	99.68	1.00
56273.000	4500.00	601.50	0.94	0.00	0.0	99.77	1.00

SUMMARY OF ERRORS

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**********************************************
  HEC2 RELEASE DATED NOV 75 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION    50,51,52,53
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B-1 Hatch Run - 100-year flood flow distribution & delineation

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C
T1      HATCH RUN, THOMAS TWP, PROJECT NO. 8547, HATCH
T2      HATCH RUN
T3      HATCH RUN

J1  ICHECK    INQ     NINV    IDIR    STRT    METRIC  IVINS   Q       WSEL    FQ
      0.      4.      0.      0.    0.002100  0.0     0.0     0.    593.860   0.0

J2  NPROF     IPLOT   PRFVS   XSECV   XSECH   FN      ALLDC   IBW     CHNIM   ITRACE
    1.000     0.0     1.000   0.0     0.0     0.0     0.0     0.0     0.0     0.0

J3  VARIABLE CODES FOR SUMMARY PRINTOUT
    110.000   200.000 150.000 0.0     0.0     0.0     0.0     0.0     0.0     0.0

QT    5.000   175.000 225.000 250.000 320.000 250.000 0.0     0.0     0.0     0.0
NC    0.060   0.050   0.040   0.100   0.300   0.0     0.0     0.0     0.0     0.0

      A

X1  500.000   13.000  187.000 215.000 0.0     0.0     0.0     0.0     0.0     0.0
GR  608.000   112.000 603.000 140.000 596.000 175.000 593.100 187.000 590.700 190.000
GR  588.000   195.000 587.100 200.000 587.800 205.000 589.100 210.000 593.600 215.000
GR  596.000   290.000 603.000 310.000 604.000 330.000 0.0     0.0     0.0     0.0

      B

X1  1500.000  14.000  295.000 315.000 915.000 915.000 915.000 0.0     0.0     0.0
GR  608.000   195.000 604.000 220.000 600.000 250.000 596.000 280.000 596.300 290.000
GR  593.800   295.000 590.800 300.000 590.100 305.000 591.600 310.000 593.800 315.000
GR  596.400   319.000 600.000 400.000 604.000 470.000 608.000 500.000 0.0     0.0
ET  0.0       0.0     0.0     0.0     0.0     0.100   0.0     0.0     205.000 225.000

      C

X1  2700.000  14.000  205.000 225.000 1035.000 1035.000 1035.000 0.0     0.0     0.0
GR  608.000   35.000  604.000 110.000 600.000 135.000 596.000 190.000 599.500 200.000
GR  596.500   205.000 593.100 210.000 592.000 215.000 593.300 220.000 596.200 225.000
GR  599.300   249.000 600.000 310.000 604.000 335.000 603.000 345.000 0.0     0.0

      D

X1  3300.000  11.000  1609.000 1631.000 540.000 540.000 540.000 0.0     0.0     0.0
GR  608.000   1475.000 604.000 1535.000 601.200 1602.000 597.600 1609.000 593.800 1615.000
GR  593.500   1620.000 593.800 1624.000 597.600 1631.000 600.600 1638.000 604.000 1695.000
GR  608.000   1735.000 0.0     0.0     0.0     0.0     0.0     0.0     0.0     0.0
NC  0.050     0.050   0.035   0.300   0.500   0.0     0.0     0.0     0.0     0.0
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E DICE RD CULVERT, TR 605.5, LC 602.0

X1	3400.000	10.000	1594.000	1606.000	100.000	100.000	100.000	0.0	0.0	0.0
GR	608.000	1495.000	605.500	1594.000	596.800	1594.000	596.800	1595.000	593.800	1595.000
GR	593.800	1605.000	596.800	1605.000	596.800	1606.000	605.500	1606.000	608.000	1790.000
X1	3401.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
BT	4.000	1495.000	608.000	608.000	1594.000	605.500	602.000	1606.000	605.500	602.000
BT	1790.000	608.000	603.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0
X1	3402.000	0.0	0.0	0.0	32.000	32.000	32.000	0.0	0.0	0.0
X2	0.0	0.0	0.0	0.0	0.0	0.0	1.000	0.0	0.0	0.0
X1	3403.000	0.0	0.0	0.0	1.000	1.000	1.000	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	1521.000	1540.000
F										
X1	3500.000	10.000	1521.000	1540.000	95.000	95.000	95.000	0.0	0.0	0.0
GR	608.000	1472.000	602.000	1514.000	598.800	1521.000	594.900	1527.500	594.800	1530.000
GR	594.900	1532.500	597.400	1540.000	600.600	1548.000	604.000	1590.000	608.000	1708.000
NC	0.050	0.050	0.035	0.100	0.300	0.0	0.0	0.0	0.0	0.0
G										
X1	4700.000	13.000	1682.000	1707.000	1035.000	1035.000	1035.000	0.0	0.0	0.0
GR	612.000	1550.000	608.000	1570.000	604.000	1630.000	604.800	1677.000	602.600	1682.000
GR	599.800	1687.000	596.900	1692.000	596.200	1697.000	596.700	1702.000	600.400	1707.000
GR	603.800	1712.000	608.000	1770.000	612.000	1860.000	0.0	0.0	0.0	0.0
ET	0.0	0.0	0.0	0.0	0.0	9.100	0.0	0.0	682.000	707.000
H										
X1	5570.000	12.000	682.000	707.000	885.000	885.000	885.000	0.0	0.0	0.0
GR	612.000	585.000	608.000	620.000	604.000	680.000	602.600	682.000	599.800	687.000
GR	596.900	692.000	596.200	697.000	596.700	702.000	600.400	707.000	604.000	710.000
GR	608.000	780.000	612.000	850.000	0.0	0.0	0.0	0.0	0.0	0.0
I										
X1	6500.000	10.000	1588.000	1608.000	805.000	805.000	805.000	0.0	0.0	0.0
GR	612.000	1450.000	609.000	1573.000	607.700	1583.000	605.400	1588.000	602.200	1593.000
GR	601.100	1598.000	602.800	1603.000	605.100	1608.000	609.000	1613.000	612.000	1745.000
EJ	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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*PROF 1

CCHV    0.100 CEHV    0.300
*SECNO 500.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

         A

   500.00      4.58    591.68       0.0    593.86    591.86      0.18       0.0       0.0    593.10
     250.        0.      250.        0.        0.       74.        0.        0.        0.    593.60
      0.0       0.0      3.38       0.0     0.060     0.040     0.060       0.0    587.10    188.77
 0.002098        0.        0.        0.         0         0         4     -0.00     24.10    212.97

*SECNO 1500.000

         B

  1500.00      4.18    594.28       0.0       0.0    594.61      0.33      2.71      0.05    593.80
     250.        0.      250.        0.        0.       54.        0.       1.         0.    593.80
      0.06      0.60      4.60      0.58     0.060     0.040     0.060     0.040    590.10    294.02
 0.004483      915.      915.      915.         2         0         0      0.00     21.73    315.75

*SECNO 2700.000

3265 DIVIDED FLOW

         C

  2700.00      5.21    597.21       0.0       0.0    597.38      0.17      2.75      0.02    596.50
     250.        9.      238.        3.       13.       71.        4.        3.        1.    596.20
      0.14      0.73      3.38      0.66     0.060     0.040     0.060     0.040    592.00    173.31
 0.001760     1035.     1035.     1035.         3         0         0      0.00     49.19    232.85

*SECNO 3300.000

         D

  3300.00      4.72    598.22       0.0       0.0    598.41      0.19      1.02      0.01    597.60
     250.        0.      250.        0.        0.       72.        0.        4.        2.    597.60
      0.19      0.47      3.48      0.48     0.060     0.040     0.060     0.040    593.50   1607.80
 0.002025       540.      540.      540.         3         0         0     -0.00     24.65   1632.44

CCHV    0.300 CEHV    0.500
*SECNO 3400.000
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS     BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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 3400.00      4.61    598.41      0.0       0.0     599.81      0.40      0.29      0.11    605.50
    250.        0.     250.       0.        0.       49.        0.        4.        2.    605.50
    0.19       0.0      5.07      0.0     0.050     0.035     0.050     0.040    593.80   1594.00
0.004638      100.     100.      100.         3         0         0       0.0     12.00   1606.00

*SECNO 3401.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   605.53 MAX ELLC   608.00

 3401.00      4.61    598.41      0.0       0.0     598.81      0.40      0.00      0.00    605.50
    250.        0.     250.       0.        0.       49.        0.        4.        2.    605.50
    0.19       0.0      5.07      0.0     0.053     0.035     0.050     0.040    593.80   1594.00
0.004633        1.       1.       1.         3         0         0       0.0     12.00   1606.00

*SECNO 3402.000

3370 NORMAL BRIDGE,NRD   4 MIN ELTRD   605.50 MAX ELLC   608.00

 3402.00      4.79    598.59      0.0       0.0     598.96      0.37      0.14      0.01    605.50
    250.        0.     250.       0.        0.       52.        0.        4.        2.    605.50
    0.19       0.0      4.85      0.0     0.050     0.035     0.050     0.040    593.80   1594.00
0.004094       32.      32.       32.         2         0         0      0.00     12.00   1606.00

*SECNO 3403.000
 3403.00      4.80    598.60      0.0       0.0     598.96      0.36      0.00      0.00    605.50
    250.        0.     250.       0.        0.       52.        0.        4.        2.    605.50
    0.19       0.0      4.85      0.0     0.053     0.035     0.050     0.040    593.80   1594.00
0.004084        1.       1.       1.         3         0         0       0.0     12.00   1606.00

*SECNO 3500.000

        F

 3500.00      4.21    599.01      0.0       0.0     599.30      0.29      0.32      0.02    598.80
    250.        0.     246.       4.        0.       56.        3.        4.        2.    597.40
    0.20       0.02      4.37     1.28     0.053     0.035     0.050     0.039    594.80   1520.54
0.002755       95.      95.       95.         2         0         0     -0.00     23.48   1544.02

ECHV     0.100 CEHV     0.303
*SECNO 4700.000
   SECNO      DEPTH     CWSEL     CRIWS     WSELK      EG        HV        HL      DLOSS   BANK ELEV
   Q          QLOB      QCH       QROB      ALOB       ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME       VLOB      VCH       VROB      XNL        XNCH      XNR       WTN      ELMIN      SSTA
   SLOPE      XLOBL     XLCH      XLOBR     ITRIAL     IDC       ICONT     CORAR    TOPWID      ENDST

        G

 4700.00      4.93    601.13      0.0       0.0     601.31      0.17      1.99      0.01    602.60
    250.        0.     250.       0.        0.       75.        0.        6.        2.    600.40
    0.29       0.0      3.34     0.51     0.053     0.035     0.050     0.038    596.20   1684.62
0.001421     1035.    1035.     1035.         3         0         0     -0.00     23.46   1708.08

*SECNO 5570.000

        H

 5570.00      5.35    602.05      0.0       0.0     602.15      0.10      0.84      0.01    602.60
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*SECNO 6500.000

3301 HV CHANGED MORE THAN HVINS

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

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

        I

  6500.00      3.25    604.35    604.35      0.0    605.31      0.96      1.51      0.26    605.40
     250.        0.     250.        0.        0.       32.        0.        9.        3.    605.10
     0.41       0.0      7.87      0.0     0.050     0.035     0.050     0.037    601.10   1589.64
0.016254      805.      805.      805.        20        11         0      0.00     16.74   1606.37
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*PROF 2

CCHV     0.100 CEHV     0.300
*SECNO 500.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST

        A

   500.00      4.58     591.68       0.0      593.85     591.86       0.18       0.0        0.0     593.10
     250.        0.       250.        0.         0.        74.         0.         0.         0.     593.60
      0.0       0.0       3.38       0.0      0.060      0.040      0.060        0.0     587.10     188.77
 0.002098        0.         0.         0.         3          0          4       0.00      24.10     212.87

*SECNO 1500.000

        B

  1500.00      4.18     594.28       0.0        0.0     594.61       0.33       2.71       0.05     593.80
     250.        0.       250.        0.         0.        54.         0.         1.         0.     593.80
      0.06      0.60       4.60      0.58      0.060      0.040      0.060      0.040     590.10     294.02
 0.004483      915.      915.      915.          2          0          0      -0.00      21.73     315.75

*SECNO 2700.000

3470 ENCROACHMENT STATIONS      205.0      225.0  TYPE      1  TARGET      20.000

        C

  2700.00      5.35     597.35       0.0     597.21     597.53       0.18       2.90       0.01     596.50
     250.        0.       250.        0.         0.        73.         0.         3.         1. 100000.00
      0.14      0.0       3.41       0.0      0.060      0.040      0.060      0.040     592.00     205.00
 0.001917     1035.     1035.     1035.          2          0          0       0.00      20.00     225.00

*SECNO 3300.000

        D

  3300.00      4.85     598.35       0.0     598.22     598.52       0.17      -0.99       0.00     597.60
     250.        0.       249.        0.         1.        75.         1.         4.         1.     597.60
      0.18      0.50       3.34      0.51      0.060      0.040      0.060      0.040     593.50    1607.54
 0.001771       540.      540.      540.          3          0          0      -0.00      25.21    1632.75

CCHV     0.300 CEHV     0.500
*SECNO 3400.000
   SECNO      DEPTH      CWSEL      CRIWS      WSELK      EG         HV         HL         OLOSS    BANK ELEV
   Q          QLOB       QCH        QROB       ALOB       ACH        AROB       VOL        TWA    LEFT/RIGHT
   TIME       VLOB       VCH        VROB       XNL        XNCH       XNR        WTN        ELMIN       SSTA
   SLOPE      XLOBL      XLCH       XLOBR      ITRIAL     IDC        ICONT      CORAR      TOPWID      ENDST
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MOORE BUSINESS FORMS INC 27

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      250.        0.      250.        0.        0.       51.        0.        4.        1.    605.50
      0.19       0.0      4.95       0.0     0.050     0.035     0.050     0.040    593.80   1594.00
  0.004327      100.      100.      100.         2         0         0     -0.00     12.00   1606.00

 *SECNO 3401.000

 3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    605.50 MAX ELLC    608.00

   3401.00      4.71    598.51       0.0    598.41    598.89      0.38      0.00      0.00    605.50
      250.        0.      250.        0.        0.       51.        0.        4.        1.    605.50
      0.19       0.0      4.95       0.0     0.050     0.035     0.050     0.040    593.80   1594.00
  0.004318        1.        1.        1.         0         0         0       0.0     12.00   1606.00

 *SECNO 3402.000

 3370 NORMAL BRIDGE,NRD    4 MIN ELTRD    605.50 MAX ELLC    608.00

   3402.00      4.88    598.68       0.0    598.59    599.03      0.35      0.13      0.01    605.50
      250.        0.      250.        0.        0.       53.        0.        4.        1.    605.50
      0.19       0.0      4.75       0.0     0.050     0.035     0.050     0.040    593.80   1594.00
  0.003864       32.       32.       32.         2         0         0     -0.00     12.00   1606.00

 *SECNO 3403.000
   3403.00      4.89    598.69       0.0    598.60    599.04      0.35      0.00      0.00    605.50
      250.        0.      250.        0.        0.       53.        0.        4.        1.    605.50
      0.19       0.0      4.75       0.0     0.050     0.035     0.050     0.040    593.80   1594.00
  0.003855        1.        1.        1.         0         0         0       0.0     12.00   1606.00

 *SECNO 3500.000

 3470 ENCROACHMENT STATIONS      1521.0     1540.0  TYPE        1  TARGET        19.000

          F

   3500.00      4.28    599.08       0.0    599.01    599.37      0.29      0.32      0.02    598.80
      250.        0.      250.        0.        0.       53.        0.        4.        1. 100000.00
      0.20       0.0      4.33       0.0     0.050     0.035     0.050     0.039    594.80   1521.00
  0.002962       95.       95.       95.         2         0         0     -0.00     19.00   1540.00

 CCHV    0.100 CEIV    0.300
 *SECNO 4700.000
    SECNO      DEPTH     CWSEL     CRIWS     WSELK        EG        HV        HL     OLOSS   BANK ELEV
    Q          QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME       VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN     SSTA
    SLOPE      XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID    ENDST

          G

   4700.00      5.00    601.20       0.0    601.13    601.37      0.17      1.98      0.01    602.60
      250.        0.      250.        0.        0.       76.        0.        6.        2.    600.40
      0.29       0.0      3.27       0.52     0.050     0.035     0.050     0.038    596.20   1684.49
  0.001336     1035.     1035.     1035.         3         0         0     -0.00     23.69   1708.18

 *SECNO 5570.000

 3470 ENCROACHMENT STATIONS       682.0      707.0  TYPE        1  TARGET        25.000
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     0.38      0.0      2.56      0.0      0.050     0.035     0.050     0.038    596.20    682.87
 0.000708     885.     885.     885.         3         0         0     -0.00     24.13    707.00

*SECNO 6500.000

3301 HV CHANGED MORE THAN HVINS

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

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

        I

  6500.00     3.25    604.35    604.35    604.35    605.31      0.96      1.56      0.26    605.40
     250.       0.      250.       0.        0.       32.        0.        9.        3.    605.10
     0.41      0.0      7.83      0.0      0.050     0.035     0.050     0.037    601.10   1589.64
 0.016277     805.     805.     805.        20        11         0      0.00     16.73   1606.37
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MOORE BUSINESS FORMS INC 27

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*****************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
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NOTE- ASTERISK - * AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

HATCH RUN

SUMMARY PRINTOUT TABLE 110

SECNO	CWSEL	DIFKWS	EG	TOPWID	QLOB	QCH	QROB	PERENG	STENCL	STCHL	STCHR	STENCR
500.000	591.68	-2.18	591.86	24.10	0.0	250.00	0.0	0.0	0.0	187.00	215.00	0.0
500.000	591.68	-2.13	591.86	24.10	0.0	250.00	0.0	0.0	0.0	187.00	215.00	0.0
1500.000	594.28	0.0	594.61	21.73	0.14	249.75	0.11	0.0	0.0	295.00	315.00	0.0
1500.000	594.28	0.0	594.61	21.73	0.14	249.75	0.11	0.0	0.0	295.00	315.00	0.0
2700.000	597.21	0.0	597.38	49.19	9.24	238.15	2.61	0.0	0.0	205.00	225.00	0.0
2700.000	597.35	0.13	597.53	20.00	0.0	250.00	0.0	20.00	205.00	205.00	225.00	225.00
3300.000	598.22	0.0	598.41	24.65	0.18	249.61	0.21	0.0	0.0	1609.00	1631.00	0.0
3300.000	598.35	0.13	598.52	25.21	0.27	249.39	0.34	0.0	0.0	1609.00	1631.00	0.0
3400.000	598.41	0.0	598.81	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3400.000	598.51	0.10	598.89	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3401.000	598.41	0.0	598.81	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3401.000	598.51	0.10	598.89	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3402.000	598.59	0.0	598.96	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3402.000	598.68	0.09	599.03	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3403.000	598.60	0.0	598.96	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3403.000	593.69	0.09	599.04	12.00	0.0	250.00	0.0	0.0	0.0	1594.00	1606.00	0.0
3500.000	599.01	0.0	599.30	23.48	0.00	245.85	4.15	0.0	0.0	1521.00	1540.00	0.0
3500.000	599.08	0.07	599.37	19.00	0.0	250.00	0.0	19.00	1521.00	1521.00	1540.00	1540.00
4700.000	601.13	0.0	601.31	23.46	0.0	249.80	0.20	0.0	0.0	1682.00	1707.00	0.0
4700.000	601.20	0.07	601.37	23.69	0.0	249.75	0.25	0.0	0.0	1682.00	1707.00	0.0
5570.000	602.05	0.0	602.15	25.39	0.0	249.43	0.57	0.0	0.0	682.00	707.00	0.0
5570.000	602.11	0.06	602.21	24.13	0.0	250.00	0.0	25.00	682.00	682.00	707.00	707.00
* 6500.000	604.35	0.0	605.31	16.74	0.0	250.00	0.0	0.0	0.0	1583.00	1608.00	0.0
* 6500.000	604.35	0.00	605.31	16.73	0.0	250.00	0.0	0.0	0.0	1583.00	1608.00	0.0

MOORE BUSINESS FORMS INC 27

HATCH RUN

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	LOSS	VCH	AREA	.01K
500.000	0.0	0.0	0.0	587.10	250.00	591.68	0.0	591.86	20.98	3.38	73.95	54.57
500.000	0.0	0.0	0.0	587.10	250.00	591.68	0.0	591.86	20.98	3.38	73.95	54.57
1500.000	915.00	0.0	0.0	590.10	250.00	594.28	0.0	594.61	44.83	4.60	54.69	37.34
1500.000	915.00	0.0	0.0	590.10	250.00	594.28	0.0	594.61	44.83	4.60	54.69	37.34
2700.000	1035.00	0.0	0.0	592.00	250.00	597.21	0.0	597.38	17.60	3.38	87.16	59.59
2700.000	1035.00	0.0	0.0	592.00	250.00	597.35	0.0	597.53	19.17	3.41	73.27	57.19
3300.000	540.00	0.0	0.0	593.50	250.00	598.22	0.0	598.41	20.25	3.48	72.52	55.55
3300.000	540.00	0.0	0.0	593.50	250.00	598.35	0.0	598.52	17.71	3.34	75.92	59.41
3400.000	100.00	0.0	0.0	593.80	250.00	598.41	0.0	598.81	46.38	5.07	49.29	36.71
3400.000	100.00	0.0	0.0	593.80	250.00	598.51	0.0	598.89	43.27	4.95	50.52	38.01
3401.000	1.00	605.50	608.00	593.80	250.00	598.41	0.0	598.81	46.33	5.07	49.31	36.73
3401.000	1.00	605.50	608.00	593.80	250.00	598.51	0.0	598.89	43.18	4.95	50.55	38.04
3402.000	32.00	605.50	608.00	593.80	250.00	598.59	0.0	598.96	40.94	4.85	51.53	39.07
3402.000	32.00	605.50	608.00	593.80	250.00	598.68	0.0	597.03	38.64	4.75	52.60	40.22
3403.000	1.00	0.0	0.0	593.80	250.00	598.60	0.0	598.96	40.34	4.85	51.57	39.12
3403.000	1.00	0.0	0.0	593.80	250.00	598.69	0.0	599.04	38.55	4.75	52.64	40.26
3500.000	95.00	0.0	0.0	594.80	250.00	599.01	0.0	599.30	27.55	4.37	59.54	47.63
3500.000	95.00	0.0	0.0	594.80	250.00	599.08	0.0	599.37	29.62	4.33	57.68	45.93
4700.000	1035.00	0.0	0.0	596.20	250.00	601.13	0.0	601.31	14.21	3.34	75.18	56.32
4700.000	1035.00	0.0	0.0	596.20	250.00	601.20	0.0	601.37	13.36	3.27	76.81	58.38
5570.000	885.00	0.0	0.0	596.20	250.00	602.05	0.0	602.15	6.79	2.50	97.11	95.91
5570.000	885.00	0.0	0.0	596.20	250.00	602.11	0.0	602.21	7.08	2.56	97.49	93.95
* 6500.000	805.00	0.0	0.0	601.10	250.00	604.35	604.35	605.31	162.54	7.87	31.76	19.61
* 6500.000	805.00	0.0	0.0	601.10	250.00	604.35	604.35	605.31	162.77	7.88	31.74	19.60

MOORE BUSINESS FORMS, INC 27

HATCH RUN

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
500.000	250.00	591.58	0.0	0.0	-2.18	24.10	0.0
500.000	250.00	591.58	0.0	0.0	2.18	24.10	0.0
1500.000	250.00	594.28	0.0	2.60	0.0	21.73	915.00
1500.000	250.00	594.28	0.0	2.60	0.0	21.73	915.00
2700.000	250.00	597.21	0.0	2.93	0.0	49.19	1035.00
2700.000	250.00	597.35	0.13	3.06	0.13	20.00	1035.00
3300.000	250.00	598.22	0.0	1.01	0.0	24.65	540.00
3300.000	250.00	598.35	0.13	1.00	0.13	25.21	540.00
3400.000	250.00	598.41	0.0	0.19	0.0	12.00	100.00
3400.000	250.00	598.51	0.10	0.16	0.10	12.00	100.00
3401.000	250.00	598.41	0.0	0.00	0.0	12.00	1.00
3401.000	250.00	598.51	0.10	0.00	0.10	12.00	1.00
3402.000	250.00	598.59	0.0	0.18	0.0	12.00	32.00
3402.000	250.00	598.68	0.09	0.17	0.09	12.00	32.00
3403.000	250.00	598.60	0.0	0.00	0.0	12.00	1.00
3403.000	250.00	598.69	0.09	0.00	0.09	12.00	1.00
3500.000	250.00	599.01	0.0	0.41	0.0	23.48	95.00
3500.000	250.00	599.08	0.07	0.40	0.07	19.00	95.00
4700.000	250.00	601.13	0.0	2.12	0.0	23.46	1035.00
4700.000	250.00	601.20	0.07	2.12	0.07	23.59	1035.00
5570.000	250.00	602.05	0.0	0.92	0.0	25.39	885.00
5570.000	250.00	602.11	0.06	0.91	0.06	24.13	885.00
* 6500.000	250.00	604.35	0.0	2.30	0.0	16.74	805.00
* 6500.000	250.00	604.35	0.00	2.24	0.00	16.73	805.00

SUMMARY OF ERRORS

CAUTION SECNO 6500.000 PROFILE 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO 6500.000 PROFILE 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO 6500.000 PROFILE 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO 6500.000 PROFILE 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO 6500.000 PROFILE 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO 6500.000 PROFILE 2 20 TRIALS ATTEMPTED TO BALANCE WSEL

MOORE BUSINESS FORMS INC 27

FLOODWAY DATA. HATCH RJN
PROFILE NO. 2

	STATION	FLOODWAY WIDTH FT	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
A	500.000	24.	74.	3.4	591.7	591.7	0.0
B	1500.000	22.	55.	4.6	594.3	594.3	0.0
C	2700.000	29.	73.	3.4	597.3	597.2	0.1
D	3300.000	25.	76.	3.3	598.3	598.2	0.1
E	3400.000	12.	51.	4.9	598.5	598.4	0.1
	3401.000	12.	51.	4.9	598.5	598.4	0.1
	3402.000	12.	53.	4.8	598.7	598.6	0.1
	3403.000	12.	53.	4.7	598.7	598.6	0.1
F	3500.000	19.	58.	4.3	599.1	599.0	0.1
G	4700.000	24.	77.	3.3	601.2	601.1	0.1
H	5570.000	24.	97.	2.6	602.1	602.0	0.1
I	6500.000	17.	32.	7.9	604.4	604.4	0.0

MOORE BUSINESS FORMS, INC. 27

HATCH RUN B-3 Summary printout

SUMMARY PRINTOUT TABLE 150 HATCH RUN

SECND	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
500.000	175.00	590.98	0.0	0.0	-2.88	22.45	0.0
500.000	225.00	591.47	0.48	0.0	-2.39	23.58	0.0
500.000	250.00	591.58	0.22	0.0	-2.18	24.10	0.0
500.000	320.00	592.25	0.57	0.0	-1.61	25.44	0.0
1500.000	175.00	593.59	0.0	2.71	0.0	19.60	915.00
1500.000	225.00	594.10	0.41	2.64	0.0	21.06	915.00
1500.000	250.00	594.28	0.18	2.60	0.0	21.73	915.00
1500.000	320.00	594.77	0.48	2.52	0.0	23.43	915.00
2700.000	175.00	596.52	0.0	2.93	0.0	33.86	1035.00
2700.000	225.00	597.04	0.41	2.93	0.0	44.60	1035.00
2700.000	250.00	597.21	0.18	2.93	0.0	49.19	1035.00
2700.000	320.00	597.67	0.46	2.90	0.0	61.04	1035.00
3300.000	175.00	597.61	0.0	0.99	0.0	22.05	540.00
3300.000	225.00	598.03	0.42	1.00	0.0	23.85	540.00
3300.000	250.00	598.22	0.19	1.01	0.0	24.65	540.00
3300.000	320.00	598.68	0.46	1.01	0.0	26.61	540.00
3400.000	175.00	597.81	0.0	0.20	0.0	12.00	100.00
3400.000	225.00	598.22	0.42	0.19	0.0	12.00	100.00
3400.000	250.00	598.41	0.18	0.19	0.0	12.00	100.00
3400.000	320.00	598.86	0.45	0.18	0.0	12.00	100.00
3401.000	175.00	597.81	0.0	0.01	0.0	12.00	1.00
3401.000	225.00	598.23	0.42	0.01	0.0	12.00	1.00
3401.000	250.00	598.41	0.18	0.00	0.0	12.00	1.00
3401.000	320.00	598.86	0.45	0.01	0.0	12.00	1.00
3402.000	175.00	597.94	0.0	0.13	0.0	12.00	32.00
3402.000	225.00	598.39	0.45	0.17	0.0	12.00	32.00
3402.000	250.00	598.59	0.20	0.18	0.0	12.00	32.00
3402.000	320.00	599.10	0.50	0.24	0.0	12.00	32.00
3403.000	175.00	597.95	0.0	0.01	0.0	12.00	1.00
3403.000	225.00	598.40	0.45	0.00	0.0	12.00	1.00
3403.000	250.00	598.60	0.20	0.00	0.0	12.00	1.00
3403.000	320.00	599.10	0.50	0.01	0.0	12.00	1.00
3500.000	175.00	598.25	0.0	0.30	0.0	20.22	95.00
3500.000	225.00	598.77	0.52	0.37	0.0	22.35	95.00
3500.000	250.00	599.01	0.24	0.41	0.0	23.48	95.00
3500.000	320.00	599.53	0.62	0.52	0.0	26.38	95.00
4700.000	175.00	600.47	0.0	2.22	0.0	21.30	1035.00
4700.000	225.00	600.93	0.46	2.16	0.0	22.81	1035.00
4700.000	250.00	601.13	0.20	2.12	0.0	23.46	1035.00
4700.000	320.00	601.65	0.52	2.03	0.0	25.16	1035.00
5570.000	175.00	601.29	0.0	0.82	0.0	23.41	885.00
5570.000	225.00	601.82	0.52	0.88	0.0	24.78	885.00
5570.000	250.00	602.05	0.23	0.92	0.0	25.39	885.00
5570.000	320.00	602.64	0.59	0.99	0.0	26.93	885.00

MOORE BUSINESS FORMS INC 27

	SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
*	6500.000	175.00	603.87	0.0	2.57	0.0	14.92	805.00
*	6500.000	225.00	604.20	0.34	2.38	0.0	16.17	805.00
*	6500.000	250.00	604.35	0.15	2.30	0.0	16.74	805.00
*	6500.000	320.00	604.74	0.39	2.10	0.0	18.20	805.00

SUMMARY OF ERRORS

```
CAUTION  SECNO  6500.000  PROFILE  1  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  6500.000  PROFILE  1  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO  6500.000  PROFILE  1  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO  6500.000  PROFILE  2  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  6500.000  PROFILE  2  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO  6500.000  PROFILE  2  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO  6500.000  PROFILE  3  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  6500.000  PROFILE  3  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO  6500.000  PROFILE  3  20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION  SECNO  6500.000  PROFILE  4  CRITICAL DEPTH ASSUMED
CAUTION  SECNO  6500.000  PROFILE  4  PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION  SECNO  6500.000  PROFILE  4  20 TRIALS ATTEMPTED TO BALANCE WSEL
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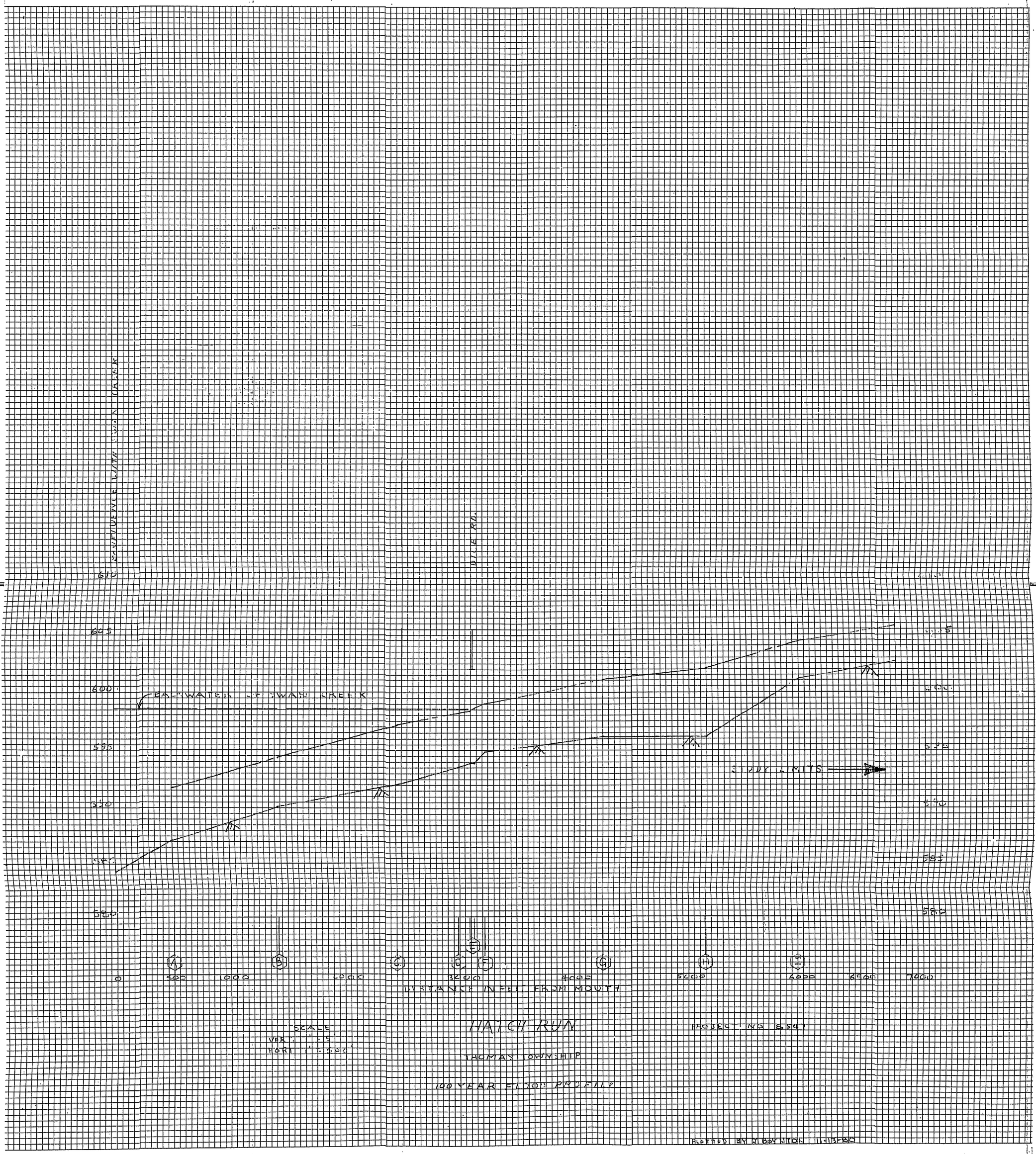
K+E
10 X 10 TO THE INCH
KEUFFEL & ESSER CO.
PRINTED IN U.S.A.
DICE RD.
BASEWATER OF SWAN CREEK
STUDY LIMITS
610
605
600
595
590
585
580
A
B
C
D
E
F
G
H
I
0
500
1000
1500
2000
3000
4000
5000
6000
7000
DISTANCE IN FEET FROM MOUTH
SCALE
VERT. 1" = 5'
HORZ. 1" = 500'
HATCH RUN
THOMAS TOWNSHIP
100 YEAR FLOOD PROFILE
PROJECT NO. 6541
PLOTTED BY M. BOWMAN 11-13-80
THOMAS TWP.
HATCH RUN