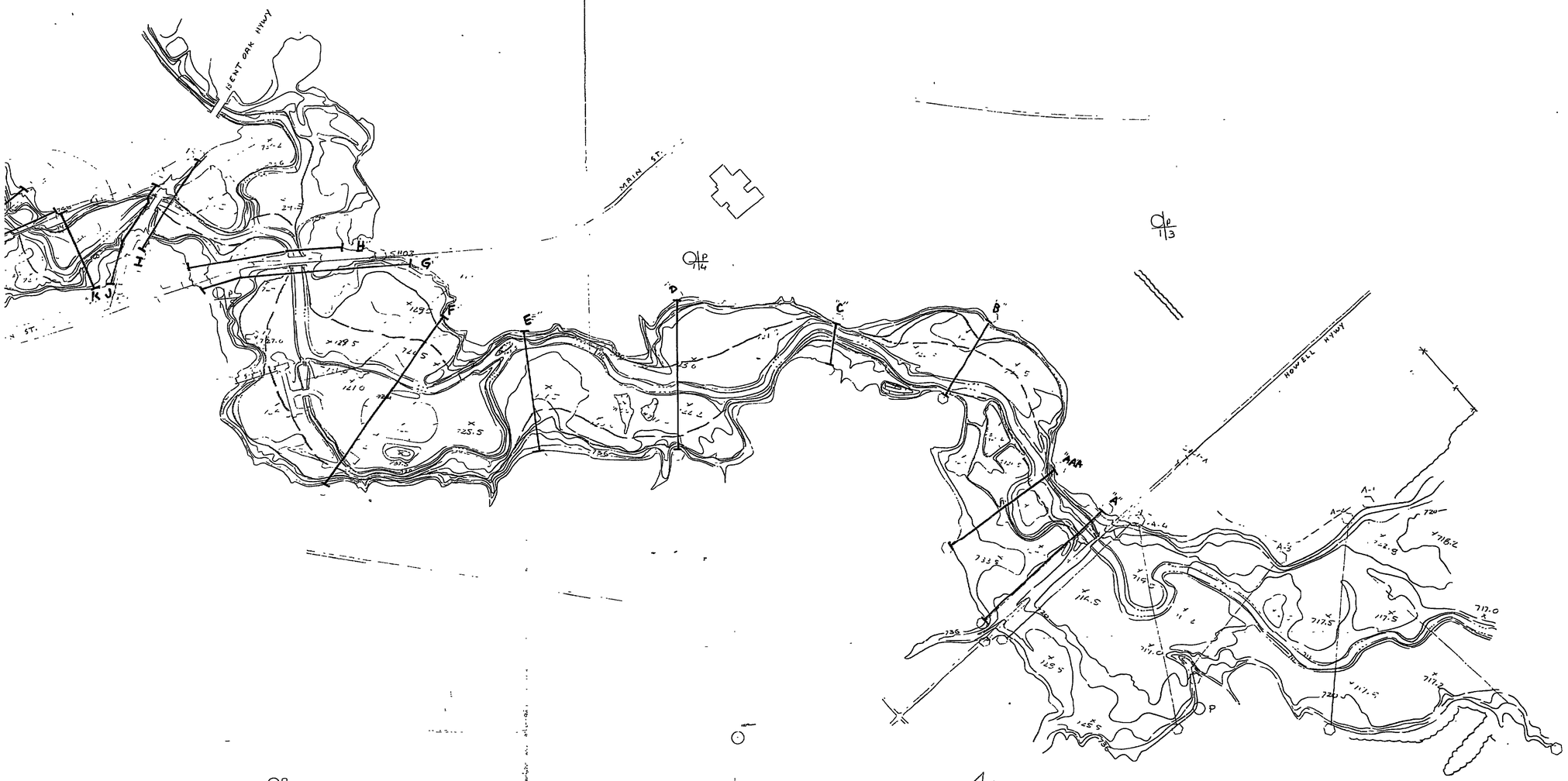
MDNR Submittal Copy
Adrian F.I.S. (H-3970)
11-7-80

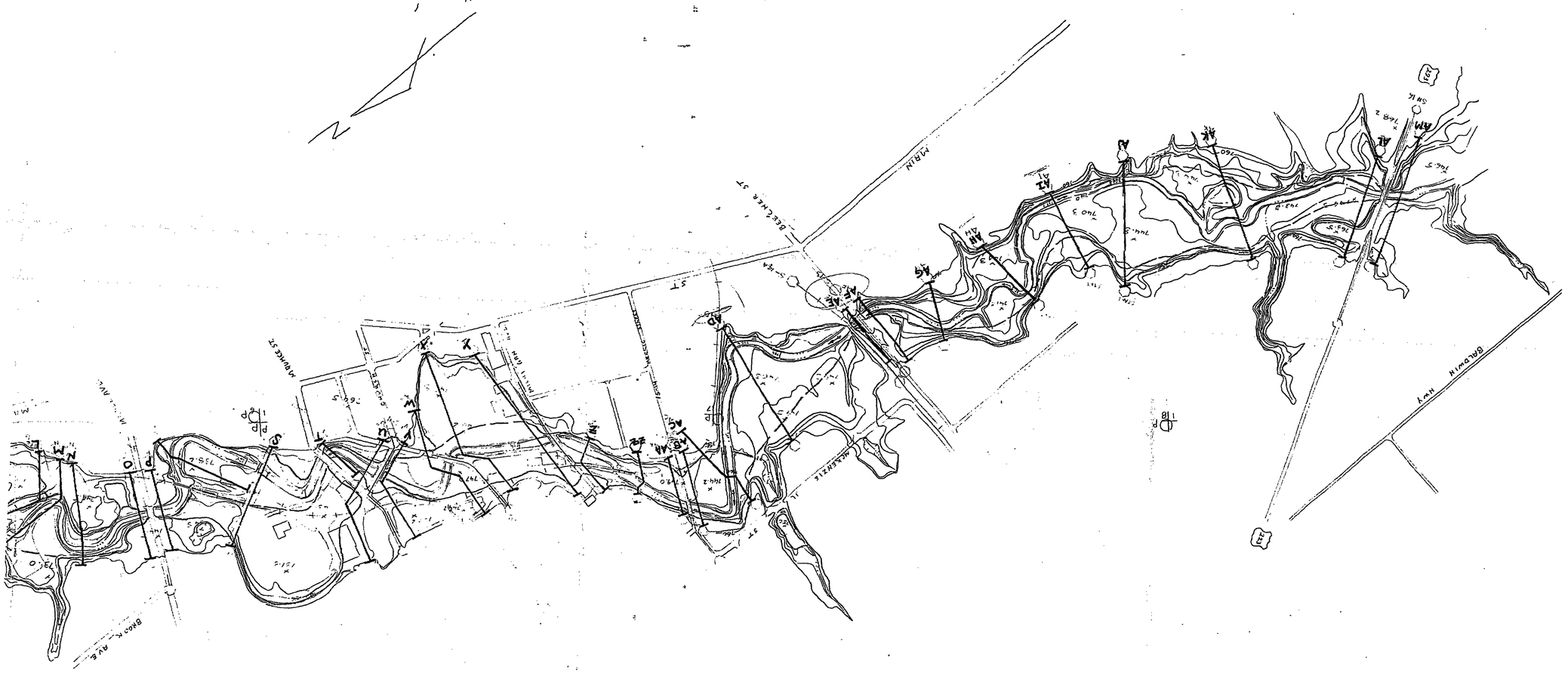


Williams & Work
W.O. 485E
Adrian, Michigan
Map Scale: 1" = 400'
Contour Interval = 4'
Date of Photography: 11-19-78

1 OF 2

2 OF 2

1"= 400'


MAIN
BEECHER ST
MACKENZIE
BALDWIN HWY
HOWARD ST
BROOKLYN AVE
MONTICELLO AVE
S 55° 55' E
S 52° 55' E
S 5° 45' W
S 5° 45' E
S 5° 45' W
S 5° 45' E
S 5° 45' W
S 5° 45

FLOOD PROFILES

S. BRANCH RAISIN

CITY OF ADRIAN

(LENAWEE COUNTY, MICHIGAN)

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/GEOLOGISTS
GRAND RAPIDS, MICHIGAN 49506

ELEVATION IN FEET (NGVD)

CITY LIMIT

HOVEL HWY.

MAIN ST. (M-52)

BENT OAK AVE.

PT. & L. RR.

GRAND AVE. EXTENDED

CONFLUENCE WITH WOLF CREEK

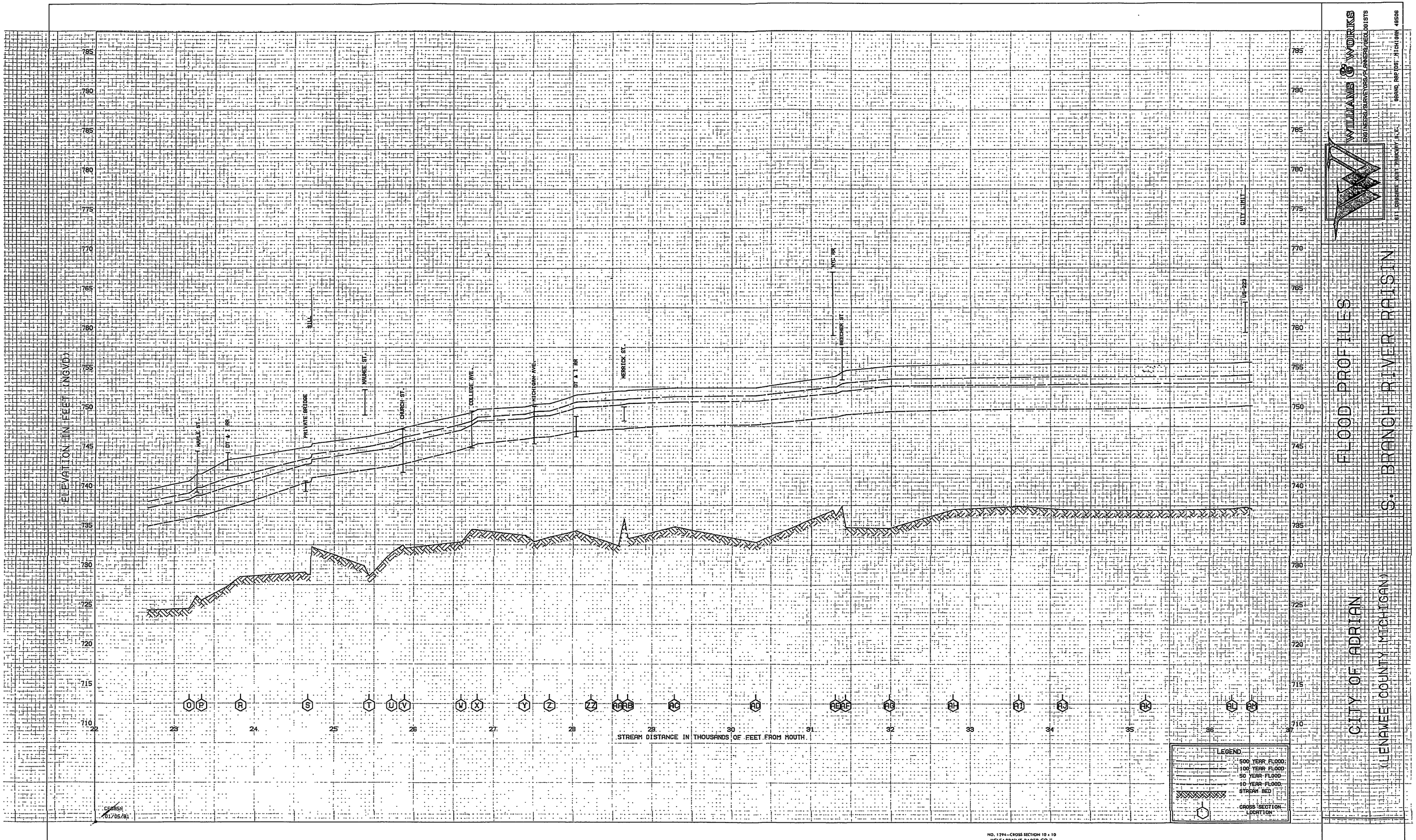
STREAM DISTANCE IN THOUSANDS OF FEET FROM MOUTH

LEGEND

- 500 YEAR FLOOD
- 100 YEAR FLOOD
- 50 YEAR FLOOD
- 10 YEAR FLOOD
- STREAM BED
- CROSS SECTION LOCATION

CED96H
01/05/81

NO 1294—CROSS SECTION 10 x 10
"CLEARPRINT PAPER CO."



NO. 1294—CROSS SECTION 10 x 10
"CLEARPRINT PAPER CO."

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/GEOLOGISTS
811 GRANDE VERT PARKWAY S.E. GRAND RAPIDS, MICHIGAN 49506

FLOOD PROFILES

S. BRANCH RIVER RAISIN

CITY OF ADRIAN
(LENAWEE COUNTY MICHIGAN)

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN, CITY OF

3) WATERCOURSE: S. BR. RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR CALIBRATION AND CONVERGENCE RUNS.

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**************************************************

C
T1 HUD-FIA FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS  PRS MARCH,1980
T2 CITY OF ADRIAN  SOUTH BRANCH RIVER RAISIN
T3      S.BR.RIVER RAISIN-ADRIAN  STAFF GAGE RATING CURVE CALIBRATION RUN

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.      8.        0.        0.   .001330       .00       .0        0.   720.000      .000
J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    1.000      .000      .000      .000      .000    1.400      .000      .000      .000      .000
J3  VARIABLE CODES FOR SUMMARY PRINTOUT
   38.000    42.000    43.000     1.000    34.000     3.000     4.000    27.000    28.000     9.000
   50.000      .000      .000      .000      .000      .000      .000      .000      .000      .000
NC     .080      .080      .035      .100      .300      .000      .000      .000      .000      .000
QT    5.000  2960.000  4620.000  5230.000  6510.000  5230.000      .000  1300.000      .000      .000
NH    5.000      .100   878.900      .120  1045.100      .069  1082.100      .120  1137.000      .100
NH 2303.600      .000      .000      .000      .000      .000      .000      .000      .000      .000

        CROSS SECTION A1

X1    8.610   25.000  1045.100  1082.100      .000      .000      .000      .000      .000      .000
GR  732.100     .000   724.900    69.100   723.100   188.500   722.300   329.400   716.600   454.200
GR  716.000  652.500   716.000   878.900   710.500  1040.100   708.100  1045.100   707.200  1050.100
GR  707.500 1055.100   706.200  1060.100   705.600  1065.100   705.600  1070.100   706.500  1075.100
GR  709.500 1080.100   710.500  1082.100   718.500  1137.000   716.200  1280.500   716.200  1453.100
GR  716.200 1610.100   718.400  1789.400   723.500  1951.900   724.500  2183.600   731.900  2303.600
NH    5.000      .100   900.800      .120  1007.000      .069  1039.000      .120  1138.200      .100
NH 1471.700      .000      .000      .000      .000      .000      .000      .000      .000      .000

        CROSS SECTION A2

X1    9.400   19.000  1007.000  1039.000   520.000   880.000   790.000      .000      .000      .000
GR  732.000     .000   724.600    47.300   719.000   212.000   717.100   356.400   716.700   534.900
GR  716.300  687.600   715.000   900.800   710.900  1002.000   709.700  1007.000   709.500  1012.000
GR  708.900 1017.000   708.200  1022.000   708.200  1027.000   708.800  1032.000   710.600  1037.000
GR  710.900 1039.000   717.000  1138.200   718.000  1291.500   732.000  1471.700      .000      .000
NH    5.000      .090   357.700      .110   381.900      .069   406.900      .120   470.500      .100
NH 1069.500      .000      .000      .000      .000      .000      .000      .000      .000      .000

        CROSS SECTION A3
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X1	10.240	22.000	381.900	406.900	760.000	900.000	840.000	.000	.000	.000
GR	732.000	.000	724.600	30.200	716.700	137.500	716.200	245.400	715.600	357.700
GR	711.500	376.900	710.300	381.900	710.000	386.900	709.200	391.900	709.400	396.900
GR	709.600	401.900	709.700	406.900	709.400	411.900	709.300	416.900	709.700	421.900
GR	711.500	422.900	714.500	470.500	716.200	582.000	715.500	811.600	720.800	934.000
GR	732.900	1018.300	732.900	1069.500	.000	.000	.000	.000	.000	.000
NH	5.000	.090	566.600	.110	628.000	.069	657.900	.110	716.700	.100
NH	1501.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION A4

X1	11.290	21.000	628.000	657.900	840.000	500.000	1050.000	.000	.000	.000
X3	.000	.000	.000	200.000	.000	950.000	.000	.000	.000	.000
GR	735.700	.000	726.200	71.200	718.800	188.200	718.200	278.400	718.200	447.600
GR	718.200	566.600	711.300	627.900	710.800	628.000	709.900	632.900	709.300	637.900
GR	707.800	642.900	707.500	647.900	708.500	652.900	711.300	657.900	719.900	716.700
GR	719.200	877.200	719.100	1042.300	720.500	1242.600	722.300	1369.900	727.500	1456.700
GR	735.700	1501.800	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.080	179.900	.100	259.900	.069	324.900	.100	403.100	.090
NH	1225.900	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION A5 DOWNSTREAM OF HOWELL HWY

X1	11.930	23.000	259.900	324.900	270.000	750.000	640.000	.000	.000	.000
X3	.000	.000	.000	210.000	.000	380.000	.000	.000	.000	.000
GR	736.000	.000	728.900	38.900	720.800	179.900	712.000	259.900	710.000	264.900
GR	710.700	269.900	710.500	274.900	710.000	279.900	710.400	284.900	710.900	289.900
GR	710.300	294.900	710.300	299.900	710.400	304.900	710.300	309.900	710.000	314.900
GR	710.500	319.900	712.000	324.900	718.900	403.100	719.000	557.900	718.000	777.000
GR	725.600	990.100	728.500	1113.900	735.700	1225.900	.000	.000	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000

X1	11.980	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
X3	.000	.000	.000	225.000	.000	365.000	.000	.000	.000	.000

HOWELL HWY BRIDGE -ADJACENT DOWNSTREAM SECTION

X1	12.000	23.000	820.000	946.000	20.000	20.000	20.000	.000	.000	.000
X2	.000	.000	.000	724.700	723.100	.000	.000	.000	.000	.000
GR	756.200	.000	752.400	95.000	750.900	186.000	749.900	290.000	745.300	412.000
GR	738.800	517.000	734.500	596.000	729.500	695.000	728.600	820.000	722.600	820.000
GR	712.300	860.000	710.000	880.000	708.300	900.000	711.000	920.000	720.200	946.000
GR	725.600	946.000	724.600	969.000	723.100	1124.000	723.400	1214.000	723.300	1335.000
GR	724.000	1501.000	727.300	1651.000	736.100	1866.000	.000	.000	.000	.000
BT	23.000	.000	756.200	756.200	95.000	752.400	752.400	186.000	750.900	750.900
BT	290.000	749.900	749.900	412.000	745.300	745.300	517.000	738.800	738.800	596.000
BT	734.500	734.500	695.000	729.500	729.500	820.000	728.600	728.600	820.000	728.600
BT	725.900	860.000	727.600	724.900	880.000	727.100	724.400	900.000	726.600	723.900
BT	920.000	726.100	723.400	946.000	725.600	722.900	946.000	725.600	725.600	969.000
BT	724.600	724.600	1124.000	723.100	723.100	1214.000	723.400	723.400	1335.000	723.300
BT	723.300	1501.000	724.000	724.000	1651.000	727.300	727.300	1866.000	736.100	736.100

HOWELL HWY BRIDGE -ADJACENT UPSTREAM SECTION

X1	12.030	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
X2	.000	.000	.000	724.700	723.100	.000	1.000	.000	.000	.000
NH	5.000	.090	89.900	.080	181.700	.063	234.700	.090	316.400	.100
NH	1162.500	.000	.000	.000	.000	.000	.000	.000	.000	.000

X1	12.050	20.000	181.700	234.700	20.000	20.000	20.000	.000	.000	.000
X3	.000	.000	.000	125.000	.000	285.000	.000	.000	.000	.000
GR	735.600	.000	728.000	89.900	712.000	181.700	710.300	186.700	709.700	191.700
GR	709.200	196.700	708.700	201.700	708.600	206.700	708.500	211.700	708.400	216.700
GR	708.500	221.700	709.800	226.700	710.100	231.700	712.000	234.700	729.600	316.400
GR	725.000	494.900	725.300	648.000	728.400	848.200	728.300	1006.700	736.000	1162.500
ET	.000	.000	.000	.000	.000	7.100	150.000	260.000	.000	.000

CROSS SECTION A UPSTREAM OF HOWELL HWY

X1	12.130	.000	.000	.000	80.000	80.000	80.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*PROF 1

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.610

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
	CROSS SECTION A1								
8.61	10.70	716.30	.00	720.00	716.36	.06	.00	.00	708.10
1300.	385.	837.	78.	611.	346.	151.	0.	0.	710.50
.00	.63	2.42	.52	.167	.097	.167	.000	705.60	551.99
.001318	0.	0.	0.	0	0	6	.00	914.52	1618.58

1490 NH CARD USED
*SECNO 9.400

CROSS SECTION A2

9.40	8.98	717.18	.00	.00	717.21	.03	.84	.00	709.70
1300.	550.	505.	245.	944.	260.	323.	20.	13.	710.90
.17	.58	1.94	.76	.158	.168	.140	.055	708.20	350.20
.001086	520.	790.	880.	2	0	0	.00	815.82	1166.03

1490 NH CARD USED
*SECNO 10.240

CROSS SECTION A3

10.24	8.72	717.92	.00	.00	717.94	.02	.73	.00	710.30
1300.	271.	348.	682.	515.	207.	1198.	52.	27.	709.70
.44	.53	1.68	.57	.135	.097	.152	.052	709.20	120.92
.000714	760.	840.	900.	2	0	0	.00	746.57	867.50

1490 NH CARD USED
*SECNO 11.290

3470 ENCROACHMENT STATIONS= 200.0 950.0 TYPE= 1 TARGET= 750.000

CROSS SECTION A4

11.29	11.24	718.74	.00	.00	718.82	.08	.86	.02	710.80
1300.	299.	821.	180.	423.	291.	189.	76.	38.	711.30
.55	.71	2.82	.95	.149	.097	.154	.056	707.50	200.00
.001702	840.	1050.	500.	2	0	0	.00	508.77	708.77

1490 NH CARD USED
*SECNO 11.930

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= 210.0 380.0 TYPE= 1 TARGET= 170.000

CROSS SECTION A5 DOWNSTREAM OF HOWELL HWY

11.93	9.36	719.36	.00	.00	719.39	.03	.57	.01	712.00
1300.	163.	936.	201.	230.	577.	272.	88.	41.	712.00
.67	.71	1.62	.74	.140	.097	.140	.055	710.00	210.00
.000615	270.	640.	750.	2	0	0	.00	170.00	380.00

CCHV= .300 CEHV= .500
*SECNO 11.980

3470 ENCROACHMENT STATIONS= 225.0 365.0 TYPE= 1 TARGET= 140.000

11.98	9.37	719.37	.00	.00	719.42	.04	.02	.01	712.00
1300.	105.	1069.	127.	190.	578.	225.	89.	41.	712.00
.68	.55	1.85	.56	.112	.049	.112	.055	710.00	225.00
.000205	50.	50.	50.	2	0	0	.00	140.00	365.00

*SECNO 12.000

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT DOWNSTREAM SECTION

12.00	11.08	719.38	.00	.00	719.42	.05	.00	.00	728.60
1300.	0.	1300.	0.	0.	760.	0.	89.	41.	725.60
.68	.00	1.71	.00	.112	.049	.112	.055	708.30	832.50
.000253	20.	20.	20.	0	0	0	.00	111.18	943.68

*SECNO 12.030

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT UPSTREAM SECTION

12.03	11.08	719.38	.00	.00	719.43	.05	.01	.00	728.60
1300.	0.	1300.	0.	0.	761.	0.	90.	41.	725.60
.69	.00	1.71	.00	.112	.049	.112	.055	708.30	832.49
.000253	30.	30.	30.	0	0	0	.00	111.20	943.69

1490 NH CARD USED
*SECNO 12.050

3470 ENCROACHMENT STATIONS= 125.0 285.0 TYPE= 1 TARGET= 160.000

12.05	10.99	719.39	.00	.00	719.44	.05	.01	.00	712.00
1300.	129.	1078.	93.	157.	531.	127.	90.	41.	712.00
.69	.83	2.03	.73	.112	.088	.126	.055	708.40	139.31
.000692	20.	20.	20.	0	0	0	.00	129.69	269.00

*SECNO 12.130

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
CROSS SECTION A			UPSTREAM OF HOWELL HWY						
12.13	11.04	719.44	.00	.00	719.50	.05	.05	.00	712.00
1300.	130.	1076.	93.	159.	533.	128.	92.	41.	712.00
.70	.82	2.02	.73	.112	.088	.126	.055	708.40	139.05
.000680	80.	80.	80.	1	0	0	.00	130.16	269.21

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**********************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**********************************************************

T1 HUD-FIA FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS  PRS MARCH,1980
T2 CITY OF ADRIAN  SOUTH BRANCH RIVER RAISIN
T3      S.BR.RIVER RAISIN-ADRIAN 100-YEAR FLOOD + STWSEL BY SLOPE-AREA METHOD

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.       4.        0.        0.   .001330       .00       .0        0.   720.000      .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    2.000      .000      .000      .000      .000    1.400      .000      .000      .000      .000
```

*PROF 2

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.610

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
			CROSS SECTION A1						
8.61	13.80	719.40	.00	720.00	719.44	.04	.00	.00	708.10
5230.	2342.	1343.	1545.	2509.	461.	2007.	0.	0.	710.50
.00	.93	2.91	.77	.154	.097	.144	.000	705.60	393.00
.001309	0.	0.	0.	0	0	4	.00	1428.10	1821.10

1490 NH CARD USED
*SECNO 9.400

CROSS SECTION A2

9.40	12.08	720.28	.00	.00	720.31	.03	.87	.00	709.70
5230.	3145.	935.	1150.	3304.	359.	1087.	73.	20.	710.90
.15	.95	2.61	1.06	.154	.168	.140	.058	708.20	174.40
.001284	520.	790.	880.	2	0	0	.00	1146.42	1320.83

1490 NH CARD USED
*SECNO 10.240

CROSS SECTION A3

10.24	12.02	721.22	.00	.00	721.24	.03	.93	.00	710.30
5230.	1555.	719.	2956.	1448.	289.	2840.	162.	39.	709.70
.33	1.07	2.48	1.04	.130	.097	.147	.053	709.20	76.16
.001000	760.	840.	900.	2	0	0	.00	860.73	936.90

1490 NH CARD USED
*SECNO 11.290

3470 ENCROACHMENT STATIONS= 200.0 950.0 TYPE= 1 TARGET= 750.000

CROSS SECTION A4

11.29	14.70	722.20	.00	.00	722.28	.08	1.02	.01	710.80
5230.	2606.	1457.	1167.	1903.	395.	1033.	224.	51.	711.30
.44	1.37	3.69	1.13	.134	.097	.147	.058	707.50	200.00
.001946	840.	1050.	500.	2	0	0	.00	750.00	950.00

1490 NH CARD USED
*SECNO 11.930

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= 210.0 380.0 TYPE= 1 TARGET= 170.000

CROSS SECTION A5 DOWNSTREAM OF HOWELL HWY

11.93	13.28	723.28	.00	.00	723.47	.19	1.16	.03	712.00
5230.	851.	3380.	999.	426.	832.	488.	254.	56.	712.00
.48	2.00	4.06	2.05	.140	.097	.140	.058	710.00	210.00
.002370	270.	640.	750.	2	0	0	.00	170.00	380.00

CCHV= .300 CEHV= .500
*SECNO 11.980

3470 ENCROACHMENT STATIONS= 225.0 365.0 TYPE= 1 TARGET= 140.000

11.98	13.29	723.29	.00	.00	723.60	.31	.07	.06	712.00
5230.	507.	4116.	606.	327.	832.	382.	256.	56.	712.00
.49	1.55	4.95	1.59	.112	.049	.112	.058	710.00	225.00
.000902	50.	50.	50.	2	0	0	.00	140.00	365.00

*SECNO 12.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT DOWNSTREAM SECTION

12.00	15.05	723.35	.00	.00	723.62	.28	.02	.01	728.60
5230.	0.	5229.	1.	0.	1239.	14.	256.	57.	725.60
.49	.00	4.22	.10	.112	.049	.112	.058	708.30	820.00
.000989	20.	20.	20.	2	0	0	.00	294.76	1346.29

*SECNO 12.030

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT UPSTREAM SECTION

12.03	15.08	723.38	.00	.00	723.65	.27	.03	.00	728.60
5230.	0.	5228.	2.	0.	1243.	20.	257.	57.	725.60
.49	.00	4.21	.10	.112	.049	.112	.058	708.30	820.00
.000980	30.	30.	30.	0	0	0	.00	347.26	1353.02

1490 NH CARD USED
*SECNO 12.050

3470 ENCROACHMENT STATIONS= 125.0 285.0 TYPE= 1 TARGET= 160.000

12.05	14.99	723.39	.00	.00	723.70	.31	.03	.02	712.00
5230.	860.	3770.	600.	366.	743.	301.	258.	57.	712.00
.49	2.35	5.07	1.99	.112	.088	.126	.058	708.40	125.00

.002754	20.	20.	20.	0	0	0	.00	160.00	285.00

*SECNO 12.130

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

CROSS SECTION A UPSTREAM OF HOWELL HWY

12.13	15.22	723.62	.00	.00	723.92	.30	.22	.00	712.00
5230.	844.	3783.	604.	387.	755.	313.	260.	57.	712.00
.49	2.18	5.01	1.93	.112	.088	.126	.058	708.40	115.03
.002632	80.	80.	80.	2	0	0	.00	173.60	288.64

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**********************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  ERROR CORR -  01,02,03
  MODIFICATION -  50,51,52,53
**********************************************************

T1 HUD-FIA FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS  PRS MARCH,1980
T2 CITY OF ADRIAN  SOUTH BRANCH RIVER RAISIN
T3      S.BR.RIVER RAISIN-ADRIAN  PROFILE CONVERGENCE ANALYSIS (100-YR FLOOD)

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       0.       4.        0.        0.   .000000       .00       .0        0.   716.000      .000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    6.000       .000      .000      .000      .000    1.400      .000      .000      .000      .000
```

*PROF 6

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.610

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

CROSS SECTION A1

8.61	10.40	716.00	.00	716.00	717.21	1.21	.00	.00	708.10
5230.	1405.	3535.	290.	477.	335.	104.	0.	0.	710.50
.00	2.95	10.55	2.79	.168	.097	.168	.000	705.60	878.90
.026231	0.	0.	0.	0	0	0	.00	240.94	1119.84

1490 NH CARD USED
*SECNO 9.400

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION A2

9.40	11.82	720.02	.00	.00	720.06	.04	2.73	.12	709.70
5230.	3107.	983.	1140.	3090.	350.	1015.	39.	10.	710.90
.14	1.01	2.81	1.12	.154	.168	.140	.056	708.20	182.00
.001533	520.	790.	880.	8	0	0	.00	1135.50	1317.50

1490 NH CARD USED
*SECNO 10.240

CROSS SECTION A3

10.24	11.88	721.08	.00	.00	721.11	.03	1.06	.00	710.30
5230.	1547.	732.	2951.	1409.	286.	2771.	123.	28.	709.70
.32	1.10	2.56	1.06	.130	.097	.147	.053	709.20	77.93
.001077	760.	840.	900.	4	0	0	.00	858.06	935.99

1490 NH CARD USED
*SECNO 11.290

3470 ENCROACHMENT STATIONS= 200.0 950.0 TYPE= 1 TARGET= 750.000

CROSS SECTION A4

11.29	14.63	722.13	.00	.00	722.21	.08	1.09	.02	710.80
5230.	2595.	1478.	1157.	1871.	392.	1011.	185.	41.	711.30
.42	1.39	3.77	1.14	.134	.097	.147	.058	707.50	200.00
.002040	840.	1050.	500.	0	0	0	.00	750.00	950.00

1490 NH CARD USED
*SECNO 11.930

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
11.93	13.25	723.25	.00	.00	723.44	.19	1.19	.03	712.00
5230.	850.	3381.	998.	424.	830.	486.	214.	46.	712.00
.47	2.00	4.08	2.05	.140	.097	.140	.058	710.00	210.00
.002391	270.	640.	750.	2	0	0	.00	170.00	380.00

3470 ENCROACHMENT STATIONS= 210.0 380.0 TYPE= 1 TARGET= 170.000

CROSS SECTION A5 DOWNSTREAM OF HOWELL HWY

CCHV= .300 CEHV= .500
*SECNO 11.980

3470 ENCROACHMENT STATIONS= 225.0 365.0 TYPE= 1 TARGET= 140.000

11.98	13.26	723.26	.00	.00	723.57	.31	.07	.06	712.00
5230.	507.	4117.	606.	326.	830.	381.	216.	46.	712.00
.47	1.56	4.96	1.59	.112	.049	.112	.058	710.00	225.00
.000910	50.	50.	50.	2	0	0	.00	140.00	365.00

*SECNO 12.000

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT DOWNSTREAM SECTION

12.00	15.02	723.32	.00	.00	723.60	.28	.02	.01	728.60
5230.	0.	5229.	1.	0.	1235.	10.	216.	46.	725.60
.47	.00	4.23	.09	.112	.049	.112	.058	708.30	820.00
.000998	20.	20.	20.	2	0	0	.00	240.05	1339.28

*SECNO 12.030

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 723.10 MAX ELLC= 724.70

HOWELL HWY BRIDGE -ADJACENT UPSTREAM SECTION

12.03	15.05	723.35	.00	.00	723.63	.28	.03	.00	728.60
5230.	0.	5229.	1.	0.	1239.	14.	217.	47.	725.60
.47	.00	4.22	.10	.112	.049	.112	.058	708.30	820.00
.000989	30.	30.	30.	0	0	0	.00	293.01	1346.07

1490 NH CARD USED
*SECNO 12.050

3470 ENCROACHMENT STATIONS=		125.0	285.0	TYPE=	1	TARGET=	160.000		
12.05	14.96	723.36	.00	.00	723.67	.31	.03	.02	712.00
5230.	858.	3774.	598.	365.	742.	299.	218.	47.	712.00
.47	2.35	5.09	2.00	.112	.088	.126	.057	708.40	125.00
.002779	20.	20.	20.	0	0	0	.00	160.00	285.00

*SECNO 12.130

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	QTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CROSS SECTION A UPSTREAM OF HOWELL HWY

12.13	15.19	723.59	.00	.00	723.89	.30	.22	.00	712.00
5230.	842.	3786.	602.	386.	754.	312.	220.	47.	712.00
.48	2.18	5.02	1.93	.112	.088	.126	.057	708.40	115.19
.002653	80.	80.	80.	2	0	0	.00	173.32	288.51

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN, CITY OF

3) WATERCOURSE: S. Br. RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

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**************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
**************************************************

T1 HUD-FIA FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS  PRS MARCH,1980
T2 CITY OF ADRIAN  SOUTH BRANCH RIVER RAISIN
T3      S.BR.RIVER RAISIN-ADRIAN 100-YEAR FLOOD + FLOODWAY CONDITIONS

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
       0.        6.         0.         0.    .000000        .00         .0         0.    723.600       .000

J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE
    2.000        .000     -1.000        .000       .000       .000       .000       .000       .000       .000
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14112 g.B.

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*PROF 2

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 12.130
   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=      140.0      270.0  TYPE=      1  TARGET=     130.000

         CROSS SECTION A         UPSTREAM OF HOWELL HWY

    12.13     15.20    723.60      .00    723.60    723.91      .31       .00       .00    712.00
    5230.      840.     3787.     604.      332.      754.     275.        0.        0.     712.00
      .00      2.53      5.02     2.19      .080      .063     .090      .000    708.40    140.00
 .001352        0.        0.       0.         0         0        0       .00    130.00    270.00


1490 NH CARD USED
*SECNO 12.650

3470 ENCROACHMENT STATIONS=        .0      230.0  TYPE=      1  TARGET=     229.999

         CROSS SECTION AAA

    12.65     14.92    724.52      .00    724.51    724.76      .25       .85       .01    713.00
    5230.      647.     1524.     3059.      197.      267.     1026.      17.        2.     713.00
      .04      3.28      5.72     2.98      .063      .100     .100      .045    709.60     77.72
 .002009       480.      520.      540.         2         0        0       .00    152.28    230.00


1490 NH CARD USED
*SECNO 13.650

3470 ENCROACHMENT STATIONS=      230.0      565.0  TYPE=      1  TARGET=     335.000

         CROSS SECTION B

    13.65     15.75    726.25      .00    726.08    726.42      .17      1.65       .01    711.20
    5230.     1963.     2065.     1202.     1134.      464.     377.       58.        8.     711.20
      .13      1.73      4.45     3.19      .090      .085     .085      .044    710.50    230.00
 .001317      1070.     1000.     1020.         0         0        0       .00    335.00    565.00


1490 NH CARD USED
*SECNO 14.590

         CROSS SECTION  C

    14.59     16.23    727.63      .00    727.35    728.28      .65      1.72       .14    713.50
    5230.      574.     3973.     683.      192.      546.     283.       91.       12.     715.00
      .17      2.99      7.27     2.41      .100      .063     .100      .044    711.40     12.98
 .002668       950.      940.      950.         2         0        0       .00    114.00    126.98


1490 NH CARD USED
*SECNO 15.950
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3301 HV CHANGED MORE THAN HVINS

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=		450.0	1079.1	TYPE=	1	TARGET=	-450.000		
CROSS SECTION D									
15.95	13.96	729.16	.00	728.99	729.20	.04	.85	.06	716.20
5230.	1023.	1753.	2454.	1053.	792.	2451.	173.	24.	716.40
.44	.97	2.21	1.00	.092	.063	.086	.045	715.20	450.00
.000277	1200.	1360.	1400.	3	0	0	.00	606.21	1056.21
490 NH CARD USED									
*SECNO 17.150									
3470 ENCROACHMENT STATIONS=		65.0	585.0	TYPE=	1	TARGET=	520.000		
CROSS SECTION E									
17.15	12.85	729.55	.00	729.40	729.60	.05	.40	.00	717.90
5230.	79.	1761.	3390.	84.	695.	2854.	282.	39.	717.90
.64	.95	2.53	1.19	.090	.063	.086	.045	716.70	65.00
.000404	1220.	1200.	1200.	2	0	0	.00	520.00	585.00
490 NH CARD USED									
*SECNO 18.130									
3470 ENCROACHMENT STATIONS=		230.0	1360.0	TYPE=	1	TARGET=	1130.000		
CROSS SECTION F									
18.13	10.75	729.85	.00	729.71	729.87	.02	.27	.00	720.20
5230.	374.	348.	4508.	775.	305.	3842.	387.	59.	719.90
.91	.48	1.14	1.17	.087	.085	.053	.044	719.10	230.00
.000174	950.	980.	1100.	2	0	0	.00	1130.00	1360.00
490 NH CARD USED									
*SECNO 19.400									
3301 HV CHANGED MORE THAN HVINS									
CROSS SECTION G DOWNSTREAM OF MAIN STREET									
19.40	9.60	729.50	.00	729.34	730.97	1.46	.66	.43	723.50
5230.	73.	5054.	103.	30.	513.	40.	472.	78.	723.50
.95	2.44	9.86	2.54	.085	.045	.085	.044	719.90	786.79
.005523	1100.	1270.	1400.	3	0	0	.00	86.44	873.23
CCHV= .300 CEHV= .500									
*SECNO 19.450									
19.45	10.10	730.00	.00	729.88	731.27	1.27	.25	.06	723.50

5230.	87.	5022.	121.	35.	544.	47.	473.	78.	723.50
.95	2.46	9.23	2.57	.080	.045	.080	.044	719.90	785.96
.004474	50.	50.	50.	2	0	0	.00	88.38	874.34

*SECNO 19.470

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

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 739.10 MAX ELLC= 735.10

MAIN STREET --M-52-- BRIDGE -ADJACENT DOWNSTREAM SECTION S-03

19.47	11.83	730.93	.00	730.85	731.54	.61	.07	.20	739.60
5230.	0.	5230.	0.	0.	836.	0.	473.	78.	739.10
.95	.00	6.26	.00	.080	.045	.080	.044	719.10	556.39
.002547	20.	20.	20.	3	0	0	.00	111.31	667.69

*SECNO 19.510

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 739.10 MAX ELLC= 735.10

MAIN STREET --M-52-- BRIDGE -ADJACENT UPSTREAM SECTION S-03

19.51	11.92	731.02	.00	730.95	731.62	.59	.07	.01	739.60
5230.	0.	5230.	0.	0.	848.	0.	474.	78.	739.10
.95	.00	6.17	.00	.080	.045	.080	.044	719.10	556.12
.002450	30.	30.	30.	0	0	0	.00	111.96	668.09

490 NH CARD USED

*SECNO 19.530

3301 HV CHANGED MORE THAN HVINS

19.53	13.32	730.72	.00	730.64	732.06	1.34	.07	.37	723.50
5230.	180.	4867.	183.	90.	507.	91.	474.	78.	723.50
.95	2.00	9.60	2.00	.120	.052	.120	.044	717.40	306.62
.004986	20.	20.	20.	2	0	0	.00	97.18	403.80

*SECNO 19.560

CROSS SECTION H UPSTREAM OF MAIN STREET

19.56	13.55	730.95	.00	730.88	732.22	1.27	.14	.02	723.50
5230.	188.	4850.	192.	96.	518.	97.	474.	78.	723.50
.95	1.97	9.37	1.97	.120	.052	.120	.044	717.40	305.82
.004612	30.	30.	30.	2	0	0	.00	98.79	404.62

CCHV= .100 CEHV= .300

1490 NH CARD USED
*SECNO 20.580

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 340.0 460.0 TYPE= 1 TARGET= 120.000

CROSS SECTION I DOWNSTREAM OF BENT OAK AVE

20.58	11.53	734.93	.00	734.92	735.39	.46	3.09	.08	724.60
3650.	270.	2621.	759.	160.	414.	394.	493.	80.	724.60
1.00	1.69	6.34	1.92	.120	.052	.120	.044	723.40	340.00
.001977	1050.	1020.	770.	2	0	0	.00	120.00	460.00

CCHV= .300 CEHV= .500
*SECNO 20.630

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	OLOB	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= 355.0 440.0 TYPE= 1 TARGET= 85.000

20.63	11.60	735.00	.00	734.99	735.48	.48	.09	.01	724.60
3650.	215.	2649.	786.	99.	417.	300.	494.	80.	724.60
1.01	2.16	6.36	2.62	.080	.045	.080	.044	723.40	355.00
.001478	50.	50.	50.	2	0	0	.00	85.00	440.00

*SECNO 20.660

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 743.10 MAX ELLC= 740.30

BENT OAK AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-04

20.66	13.01	735.11	.00	735.10	735.54	.43	.04	.02	744.80
3650.	0.	3650.	0.	0.	693.	0.	494.	80.	744.80
1.01	.00	5.27	.00	.080	.045	.080	.044	722.10	360.00
.001498	30.	30.	30.	2	0	0	.00	65.00	425.00

*SECNO 20.710

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 743.10 MAX ELLC= 740.30

BENT OAK AVE BRIDGE -ADJACENT UPSTREAM SECTION S-04

20.71	13.09	735.19	.00	735.18	735.61	.43	.07	.00	744.80
3650.	0.	3650.	0.	0.	697.	0.	495.	81.	744.80
1.01	.00	5.24	.00	.080	.045	.080	.044	722.10	360.00
.001470	46.	46.	46.	0	0	0	.00	65.00	425.00

1490 NH CARD USED
*SECNO 20.750

3470 ENCROACHMENT STATIONS= 70.0 205.0 TYPE= 1 TARGET= 135.000

CROSS SECTION J UPSTREAM OF BENT OAK AVE

20.75	13.96	735.26	.00	735.25	735.67	.41	.06	.00	724.70
3650.	244.	2943.	463.	144.	517.	313.	496.	81.	724.70
1.01	1.69	5.69	1.48	.100	.052	.120	.044	721.30	82.98
.001383	50.	40.	30.	1	0	0	.00	122.02	205.00

*SECNO 20.800

3470 ENCROACHMENT STATIONS= 40.0 235.0 TYPE= 1 TARGET= 195.000

20.80	14.02	735.32	.00	735.31	735.72	.40	.04	.00	724.70
3650.	244.	2917.	489.	146.	520.	348.	496.	81.	724.70
1.02	1.67	5.61	1.41	.100	.052	.119	.044	721.30	82.80
.001339	30.	30.	30.	1	0	0	.00	152.20	235.00

1490 NH CARD USED

*SECNO 21.390

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

CROSS SECTION K

21.39	12.32	736.22	.00	736.22	736.41	.19	.63	.06	725.20
3650.	1435.	2007.	208.	983.	445.	166.	513.	83.	725.20
1.07	1.46	4.52	1.25	.101	.052	.103	.044	723.90	138.02
.000914	570.	590.	450.	2	0	0	.00	273.38	411.41

*SECNO 21.960

3470 ENCROACHMENT STATIONS= 275.0 425.0 TYPE= 1 TARGET= 150.000

21.96	13.21	736.61	.00	736.61	736.88	.27	.43	.04	724.70
3650.	981.	2380.	288.	525.	478.	206.	525.	85.	724.70
1.10	1.87	4.98	1.40	.110	.052	.101	.045	723.40	275.00
.001013	200.	570.	600.	2	0	0	.00	142.21	417.21

*SECNO 21.990

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-05

21.99	13.57	736.77	.00	736.76	736.93	.17	.02	.03	746.20
3650.	0.	3650.	0.	0.	1113.	0.	526.	85.	744.60
1.10	.00	3.28	.00	.080	.045	.080	.045	723.20	1015.04
.000575	30.	30.	30.	2	0	0	.00	127.73	1142.78

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.80	2.60	176.00	56.30	14.80	1822.00	2.40	723.20	723.20

*SECNO 22.010

CLASS A LOW FLOW

3420 BRIDGE W.S.= 736.70 BRIDGE VELOCITY=, 3.66 CALCULATED CHANNEL AREA=, 998.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	736.96	.03	0.	3650.	1822.	1776.	743.10	745.40

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-05

BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED

22.01	13.59	736.79	.00	736.79	736.96	.17	.03	.00	746.20
3650.	0.	3650.	0.	0.	1116.	0.	526.	85.	744.60
1.10	.00	3.27	.00	.080	.045	.080	.045	723.20	1014.94
.000570	10.	10.	10.	0	0	0	.00	127.90	1142.83

1490 NH CARD USED
*SECNO 22.040

3470 ENCROACHMENT STATIONS= 190.0 370.0 TYPE= 1 TARGET= 180.000

CROSS SECTION L UPSTREAM OF DT&I RR

22.04	13.23	736.73	.00	736.73	737.08	.34	.03	.09	725.90
3650.	826.	2181.	643.	424.	371.	331.	527.	85.	725.90
1.10	1.95	5.88	1.94	.096	.058	.108	.045	723.50	190.00
.001890	30.	30.	30.	2	0	0	.00	180.00	370.00

1490 NH CARD USED
*SECNO 22.120

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= 170.0 300.0 TYPE= 1 TARGET= 130.000

22.12	14.51	737.01	.00	737.01	737.22	.21	.10	.04	726.20
3650.	712.	2729.	209.	448.	662.	167.	529.	86.	726.20
1.11	1.59	4.12	1.25	.110	.058	.110	.045	722.50	170.00
.000848	80.	80.	80.	2	0	0	.00	130.00	300.00

*SECNO 22.160

3470 ENCROACHMENT STATIONS= 200.0 300.0 TYPE= 1 TARGET= 100.000

22.16	14.51	737.01	.00	737.00	737.28	.27	.03	.03	726.20
3650.	409.	2996.	245.	238.	661.	167.	530.	86.	726.20
1.11	1.72	4.53	1.47	.080	.045	.080	.045	722.50	200.00
.000616	40.	40.	40.	2	0	0	.00	100.00	300.00

*SECNO 22.180

GRAND AVE-EXTENDED

22.18	12.51	737.01	.00	737.00	737.31	.30	.01	.01	730.20
3650.	2.	3648.	0.	5.	834.	0.	531.	86.	738.30
1.11	.45	4.37	.00	.080	.045	.080	.045	724.50	258.51

14112 G.B

.000900	20.	20.	20.	1	0	0	.00	83.49	342.00

*SECNO 22.200

GRAND AVE-EXTENDED

22.20	12.53	737.03	.00	737.02	737.32	.30	.02	.00	730.20
3650.	2.	3648.	0.	5.	835.	0.	531.	86.	738.30
1.12	.45	4.37	.00	.080	.045	.080	.045	724.50	258.51
.000898	20.	20.	20.	0	0	0	.00	83.49	342.00

1490 NH CARD USED

*SECNO 22.220

3470 ENCROACHMENT STATIONS= 160.0 300.0 TYPE= 1 TARGET= 140.000

22.22	14.68	737.18	.00	737.17	737.37	.19	.02	.03	726.20
3650.	747.	2693.	210.	494.	670.	172.	531.	86.	726.20
1.12	1.51	4.02	1.23	.110	.058	.110	.045	722.50	160.00
.000792	20.	20.	20.	2	0	0	.00	140.00	300.00

*SECNO 22.260

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= 120.0 300.0 TYPE= 1 TARGET= 180.000

CROSS SECTION M UPSTREAM OF GRAND AVE-EXTENDED

22.26	14.71	737.21	.00	737.21	737.40	.19	.03	.00	726.20
3650.	745.	2694.	211.	519.	672.	172.	533.	86.	726.20
1.12	1.43	4.01	1.22	.110	.058	.110	.045	722.50	144.04
.000786	40.	40.	40.	0	0	0	.00	155.96	300.00

1490 NH CARD USED

*SECNO 22.660

CROSS SECTION N

22.66	13.75	738.05	.00	738.04	738.53	.49	.98	.15	727.00
3650.	394.	2759.	497.	192.	436.	245.	554.	89.	727.00
1.16	2.06	6.33	2.02	.100	.058	.109	.045	724.30	65.61
.002091	870.	800.	830.	2	0	0	.00	122.17	187.79

1490 NH CARD USED

*SECNO 23.180

CROSS SECTION O DOWNSTREAM OF MAPLE STREET

23.18	14.63	739.13	.00	739.12	739.79	.66	1.17	.09	727.60
3650.	339.	3223.	88.	167.	466.	60.	563.	90.	727.60
1.19	2.03	6.92	1.46	.110	.058	.099	.045	724.50	279.16
.002402	550.	520.	500.	2	0	0	.00	149.09	428.26

14112 G.B.

*SECNO 23.240

MAPLE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-07

23.24	13.55	739.65	.00	739.65	739.98	.33	.09	.10	744.40
3650.	0.	3650.	0.	0.	795.	0.	564.	90.	744.40
1.19	.00	4.59	.00	.080	.045	.080	.045	726.10	460.00
.001028	60.	60.	60.	2	0	0	.00	64.00	524.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	58.50	.00	766.00	.00	726.10	726.10

*SECNO 23.280
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
740.18	739.98	.00	0.	3650.	766.	766.	739.20	744.40

MAPLE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-07

23.28	13.76	739.86	.00	739.86	740.18	.32	.20	.00	744.40
3650.	0.	3650.	0.	0.	809.	0.	565.	90.	744.40
1.19	.00	4.51	.00	.080	.045	.080	.045	726.10	460.00
.000978	47.	47.	47.	2	0	0	.00	64.00	524.00

490 NH CARD USED
*SECNO 23.340

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

CROSS SECTION P UPSTREAM OF MAPLE STREET

23.34	14.33	739.83	.00	739.83	740.38	.54	.08	.11	727.90
3650.	181.	3001.	467.	102.	464.	237.	566.	90.	727.90
1.20	1.78	6.47	1.97	.110	.058	.110	.045	725.50	248.78
.002077	60.	60.	60.	2	0	0	.00	91.90	340.68

*SECNO 23.610

23.61	13.32	740.42	.00	740.42	741.09	.67	.65	.06	729.50
3650.	166.	3055.	428.	86.	429.	199.	571.	91.	729.50
1.21	1.94	7.13	2.16	.110	.058	.110	.045	727.10	250.23
.002807	270.	270.	270.	2	0	0	.00	87.06	337.29

*SECNO 23.640

3470 ENCROACHMENT STATIONS= .0 932.5 TYPE= 1 TARGET= 1096.999

14112 G.B.

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-08

23.64	13.79	741.09	.00	741.09	741.27	.18	.03	.15	743.70
3650.	0.	3650.	0.	0.	1066.	0.	572.	91.	744.70
1.21	.00	3.42	.00	.080	.045	.080	.045	727.30	314.50
.000563	30.	30.	30.	2	0	0	.00	101.15	415.65

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	2.10	2.80	.00	45.00	7.80	930.00	1.60	727.30	727.30

*SECNO 23.660

6110 EGLWC OF 741.24 LESS THAN XEG OF 741.27
CLASS A LOW FLOW

3420 BRIDGE W.S.= 741.01 BRIDGE VELOCITY=, 4.50 CALCULATED CHANNEL AREA=, 811.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	741.24	.02	0.	3650.	930.	927.	742.40	742.00

3470 ENCROACHMENT STATIONS= .0 1097.0 TYPE= 1 TARGET= 1096.999

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-08

BRIDGE SKEWED 32 DEGREES; SKEW FACTOR OF 0.85 APPLIED

23.66	13.81	741.11	.00	741.11	741.27	.13	.00	.00	743.70
3650.	0.	3650.	0.	0.	1257.	0.	572.	91.	744.70
1.21	.00	2.90	.00	.080	.045	.080	.045	727.30	370.00
.000393	10.	10.	10.	0	0	0	.00	119.00	489.00

1490 NH CARD USED
*SECNO 23.690

3470 ENCROACHMENT STATIONS= 480.0 630.0 TYPE= 1 TARGET= 150.000

23.69	12.51	741.01	.00	741.01	741.44	.44	.02	.15	730.40
3650.	415.	2946.	289.	257.	504.	152.	573.	91.	730.40
1.21	1.61	5.84	1.91	.095	.058	.110	.045	728.50	480.00
.001948	30.	30.	30.	2	0	0	.00	149.49	629.49

*SECNO 23.830

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

3470 ENCROACHMENT STATIONS= 480.0 630.0 TYPE= 1 TARGET= 150.000

CROSS SECTION R UPSTREAM OF DI&I RR

23.83	12.81	741.31	.00	741.31	741.71	.40	.26	.01	730.40
3650.	451.	2904.	295.	282.	517.	161.	576.	92.	730.40
1.22	1.60	5.62	1.84	.095	.058	.110	.045	728.50	480.00
.001740	120.	140.	170.	2	0	0	.00	150.00	630.00

1490 NH CARD USED
*SECNO 24.560

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 345.0 812.6 TYPE= 1 TARGET= -345.000

24.56	13.94	742.74	.00	742.74	743.40	.66	1.56	.13	732.60
3650.	657.	2795.	199.	406.	377.	98.	589.	94.	732.60
1.25	1.62	7.41	2.03	.084	.058	.110	.045	728.80	345.00
.003059	420.	730.	800.	2	0	0	.00	294.57	645.07

*SECNO 24.590

3301 HV CHANGED MORE THAN HVINS

24.59	14.68	743.48	.00	743.48	743.61	.13	.04	.16	732.60
3650.	1897.	1626.	127.	1689.	399.	113.	590.	95.	732.60
1.26	1.12	4.07	1.13	.087	.058	.110	.045	728.80	37.53
.000856	30.	30.	30.	3	0	0	.00	608.95	646.48

*SECNO 24.620

3470 ENCROACHMENT STATIONS= 260.0 816.0 TYPE= 1 TARGET= -260.000

PRIVATE BRIDGE -ADJACENT DOWNSTREAM SECTION S-08A

24.62	14.40	743.50	.00	743.50	743.62	.13	.02	.00	740.40
3650.	400.	3224.	26.	645.	1059.	57.	591.	95.	740.80
1.26	.62	3.05	.45	.080	.045	.080	.045	729.10	260.00
.000389	30.	30.	30.	2	0	0	.00	452.45	712.45

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.50	2.90	.00	33.00	3.00	529.00	2.14	729.10	729.10

*SECNO 24.640
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
744.60	743.63	.01	2119.	1533.	529.	507.	739.00	739.10

3470 ENCROACHMENT STATIONS= 260.0 816.0 TYPE= 1 TARGET= -260.000

PRIVATE BRIDGE -ADJACENT UPSTREAM SECTION S-08A

24.64	14.47	743.57	.00	743.57	743.69	.12	.07	.00	740.40
3650.	416.	3207.	27.	667.	1065.	60.	592.	95.	740.80
1.26	.62	3.01	.45	.080	.045	.080	.045	729.10	260.00
.000377	10.	10.	10.	2	0	7	.00	453.57	713.57

1490 NH CARD USED
*SECNO 24.670

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= 345.0 812.6 TYPE= 1 TARGET= -345.000

CROSS SECTION S

24.67	14.63	743.43	.00	743.43	743.88	.45	.02	.16	732.60
3650.	921.	2533.	196.	579.	398.	111.	593.	95.	732.60
1.26	1.59	6.37	1.76	.081	.058	.110	.045	728.80	345.00
.002104	30.	30.	30.	2	0	0	.00	301.38	646.38

*SECNO 24.710

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 812.6 TYPE= 1 TARGET= -300.000

24.71	14.81	743.61	.00	743.61	743.98	.37	.08	.02	732.60
3650.	1064.	2396.	190.	720.	403.	115.	594.	96.	732.60
1.26	1.48	5.94	1.65	.082	.058	.110	.045	728.80	300.00
.001800	40.	40.	40.	2	0	0	.00	347.17	660.18

1490 NH CARD USED
*SECNO 24.720

3470 ENCROACHMENT STATIONS= 295.0 839.0 TYPE= 1 TARGET= -295.000

PRIVATE SILL

24.72	11.69	743.99	.00	743.99	744.07	.08	.01	.09	742.10
3650.	927.	2723.	0.	951.	1030.	0.	594.	96.	744.50
1.27	.97	2.64	.00	.090	.058	.110	.045	732.30	295.00
.000727	10.	10.	10.	2	0	0	.00	430.88	725.88

1490 NH CARD USED
*SECNO 24.730

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 812.6 TYPE= 1 TARGET= -300.000

24.73	15.08	743.88	.00	743.88	744.20	.32	.01	.12	732.60
3650.	1169.	2293.	188.	803.	412.	124.	594.	96.	732.60

1.27	1.46	5.57	1.52	.081	.058	.110	.045	728.80	300.00
.001540	10.	10.	10.	2	0	0	.00	366.56	676.26

1490 NH CARD USED

*SECNO 25.270

25.27	16.06	744.66	.00	744.66	745.07	.40	.82	.04	732.80
3650.	769.	2868.	14.	371.	508.	17.	608.	99.	732.80
1.30	2.07	5.65	.83	.090	.058	.085	.045	728.60	179.98
.001503	540.	540.	540.	2	0	0	.00	101.65	281.63

*SECNO 25.320

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
25.32	16.14	744.74	.00	744.74	745.14	.40	.07	.00	732.80
3650.	774.	2862.	14.	376.	511.	17.	609.	99.	732.80
1.30	2.06	5.61	.82	.090	.058	.085	.045	728.60	179.58
.001472	50.	50.	50.	0	0	0	.00	102.47	282.04

*SECNO 25.330

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 745.00 MAX ELLC= 749.00

MAUMEE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-09

25.33	14.85	744.75	.00	744.74	745.17	.42	.01	.01	750.80
3650.	0.	3650.	0.	2.	698.	0.	610.	99.	753.30
1.30	.12	5.23	.00	.080	.045	.080	.045	729.90	546.65
.001369	10.	10.	10.	1	0	0	.00	90.42	875.99

*SECNO 25.380

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 745.00 MAX ELLC= 749.00

MAUMEE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-09

25.38	14.93	744.83	.00	744.83	745.25	.42	.08	.00	750.80
3650.	1.	3649.	0.	4.	703.	0.	610.	99.	753.30
1.30	.16	5.19	.00	.080	.045	.080	.045	729.90	538.30
.001341	57.	57.	57.	0	0	0	.00	101.99	876.02

1490 NH CARD USED

*SECNO 25.390

25.39	16.34	744.94	.00	744.94	745.29	.35	.02	.02	732.80
3650.	899.	2735.	16.	388.	518.	18.	611.	99.	732.80
1.30	2.31	5.28	.92	.090	.069	.085	.045	728.60	178.51

.001816	10.	10.	10.	2	0	0	.00	104.64	283.15

*SECNO 25.440

CROSS SECTION T UPSTREAM OF MAUMEE STREET

25.44	16.44	745.04	.00	745.04	745.38	.34	.09	.00	732.80
3650.	905.	2728.	17.	394.	521.	18.	612.	99.	732.80
1.31	2.30	5.24	.91	.090	.069	.085	.045	728.60	178.04
.001772	50.	50.	50.	1	0	0	.00	105.58	283.63

490 NH CARD USED

*SECNO 25.730

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= 600.0 850.0 TYPE= 1 TARGET= 250.000

CROSS SECTION U DOWNSTREAM OF CHURCH STREET

25.73	13.98	745.58	.00	745.58	745.82	.24	.41	.03	732.90
3650.	538.	2676.	436.	516.	600.	176.	618.	100.	732.90
1.33	1.04	4.46	2.48	.122	.069	.070	.045	731.60	600.00
.001354	150.	290.	360.	2	0	0	.00	250.00	850.00

*SECNO 25.810

3265 DIVIDED FLOW

CHURCH STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-10

25.81	13.12	745.62	.00	745.62	745.98	.35	.10	.06	747.10
3650.	31.	3619.	0.	70.	754.	0.	620.	100.	747.30
1.33	.44	4.80	.00	.080	.045	.080	.045	732.50	461.86
.001140	80.	80.	80.	2	0	0	.00	190.05	688.00

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.90	.00	40.00	.00	510.00	1.64	732.50	732.50

*SECNO 25.860

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
746.81	745.98	.00	630.	3054.	510.	514.	741.80	744.60

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CHURCH STREET BRIDGE -ADJACENT UPSTREAM SECTION S-10

25.86	13.64	746.14	.00	746.14	746.46	.31	.48	.00	747.10
3650.	85.	3565.	0.	147.	787.	0.	621.	101.	747.30
1.33	.57	4.53	.00	.080	.045	.080	.045	732.50	435.41
.000975	52.	52.	52.	2	0	2	.00	229.29	688.00

1490 NH CARD USED
*SECNO 25.890

3470 ENCROACHMENT STATIONS= 335.0 595.0 TYPE= 1 TARGET= 260.000

CROSS SECTION V UPSTREAM OF CHURCH STREET

25.89	14.15	746.25	.00	746.25	746.52	.26	.05	.01	733.70
3650.	674.	1882.	1094.	275.	383.	324.	622.	101.	733.70
1.34	2.45	4.91	3.38	.086	.078	.075	.045	732.10	408.14
.002081	80.	30.	30.	2	0	0	.00	186.86	595.00

1490 NH CARD USED
*SECNO 26.600

3470 ENCROACHMENT STATIONS= .0 660.0 TYPE= 1 TARGET= 659.999

CROSS SECTION W DOWNSTREAM OF COLLEGE AVE

26.60	14.94	747.84	.00	747.84	748.36	.52	1.71	.13	735.80
3650.	591.	2866.	192.	403.	442.	257.	636.	106.	735.80
1.37	1.47	6.49	.75	.104	.078	.165	.045	732.90	69.75
.003612	700.	710.	300.	3	0	0	.00	590.25	660.00

*SECNO 26.680

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

COLLEGE AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-11

26.68	13.70	748.20	.00	748.20	748.57	.37	.17	.04	748.50
3650.	99.	3420.	130.	176.	678.	178.	638.	107.	748.50
1.37	.57	5.04	.73	.080	.045	.080	.045	734.50	203.06
.001352	80.	80.	80.	2	0	0	.00	518.72	762.98

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.90	.00	45.00	.00	490.00	.28	734.50	734.50

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*SECNO 26.730

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
749.49	748.57	.00	1624.	2021.	490.	493.	744.80	746.50

COLLEGE AVE BRIDGE -ADJACENT UPSTREAM SECTION S-11

26.73	13.73	748.23	.00	748.23	748.59	.37	.03	.00	748.50
3650.	106.	3409.	135.	185.	680.	184.	639.	108.	748.50
1.38	.57	5.01	.74	.080	.045	.080	.045	734.50	199.05
.001333	56.	56.	56.	2	0	2	.00	527.26	764.27

1490 NH CARD USED

*SECNO 26.800

3470 ENCROACHMENT STATIONS= .0 800.0 TYPE= 1 TARGET= 799.999

CROSS SECTION X UPSTREAM OF COLLEGE AVE

26.80	14.30	748.70	.00	748.70	748.77	.07	.08	.09	736.20
3650.	606.	1854.	1190.	1239.	679.	1070.	644.	109.	736.20
1.39	.49	2.73	1.11	.167	.078	.103	.045	734.40	67.64
.000671	50.	70.	200.	2	0	0	.00	732.36	800.00

1490 NH CARD USED

*SECNO 27.390

CROSS SECTION Y DOWNSTREAM OF MICHIGAN AVE

27.39	15.38	749.08	.00	749.08	749.23	.15	.42	.04	736.10
3650.	938.	2091.	620.	804.	528.	864.	673.	119.	736.10
1.45	1.17	3.96	.72	.098	.069	.107	.045	733.70	82.41
.000964	400.	590.	500.	2	0	0	.00	1151.56	1233.97

*SECNO 27.460

3265 DIVIDED FLOW

MICHIGAN AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-12

27.46	16.20	749.10	.00	749.10	749.32	.21	.05	.03	749.60
3650.	201.	3449.	0.	325.	904.	0.	675.	120.	750.50
1.45	.62	3.81	.00	.080	.045	.080	.045	732.90	178.04
.000609	70.	70.	70.	2	0	0	.00	306.48	531.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD

.00	1.50	2.90	.00	18.00	.00	666.00	2.65	732.90	732.90

*SECNO 27.510

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
749.80	749.32	.00	1209.	2459.	666.	665.	745.70	746.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 749.60 ELREA= 750.50

MICHIGAN AVE BRIDGE -ADJACENT UPSTREAM SECTION S-12

BRIDGE SKEWED 26 DEGREES; SKEW FACTOR OF 0.90 APPLIED

27.51	16.27	749.17	.00	749.17	749.42	.25	.10	.00	749.60
3650.	0.	3650.	0.	0.	908.	0.	677.	121.	750.50
1.46	.00	4.02	.00	.080	.045	.080	.045	732.90	468.00
.000673	55.	55.	55.	2	0	3	.00	63.00	531.00

1490 NH CARD USED

*SECNO 27.560

27.56	16.42	749.42	.00	749.42	749.50	.08	.03	.05	735.70
3650.	1520.	1956.	174.	1059.	690.	138.	678.	121.	735.70
1.46	1.43	2.83	1.26	.077	.069	.075	.045	733.00	97.11
.000460	50.	50.	50.	2	0	0	.00	342.31	439.42

*SECNO 27.710

CROSS SECTION Z UPSTREAM OF MICHIGAN AVE

27.71	15.98	749.48	.00	749.48	749.57	.09	.07	.01	736.20
3650.	1468.	2014.	168.	946.	670.	125.	684.	122.	736.20
1.48	1.55	3.00	1.34	.076	.069	.075	.045	733.50	115.95
.000537	100.	150.	250.	2	0	0	.00	321.17	437.12

*SECNO 27.970

3470 ENCROACHMENT STATIONS= 330.0 486.8 TYPE= 1 TARGET= -330.000

27.97	15.51	749.61	.00	749.61	749.82	.21	.19	.06	736.80
3650.	785.	2659.	206.	309.	649.	112.	692.	123.	736.80
1.50	2.54	4.10	1.84	.075	.069	.075	.045	734.10	330.00
.001042	260.	260.	260.	0	0	0	.00	104.65	434.65

*SECNO 28.020

3280 CROSS SECTION 28.02 EXTENDED .85 FEET

3470 ENCROACHMENT STATIONS= 580.0 1062.2 TYPE= 1 TARGET= 1147.999

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-13

28.02	15.55	749.85	.00	749.85	750.11	.26	.27	.02	748.60
3650.	0.	3650.	0.	0.	889.	0.	699.	124.	100000.00
1.52	.00	4.10	.00	.080	.045	.080	.045	734.30	1000.00
.000721	310.	310.	310.	0	0	0	.00	62.16	1062.16

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.85	2.60	170.00	36.00	6.50	525.00	1.10	734.30	734.30

*SECNO 28.040

3280 CROSS SECTION 28.04 EXTENDED 1.61 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	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
751.24	750.14	.03	906.	2770.	525.	518.	746.40	749.00

3470 ENCROACHMENT STATIONS= .0 1148.0 TYPE= 1 TARGET= 1147.999

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-13

BRIDGE SKEWED 65 DEGREES; SKEW FACTOR OF 0.42 APPLIED

28.04	16.31	750.61	.00	750.61	750.65	.04	.54	.00	748.60
3650.	0.	3650.	0.	0.	2229.	0.	700.	124.	100000.00
1.52	.00	1.64	.00	.080	.045	.080	.045	734.30	1000.00
.000084	14.	14.	14.	2	0	2	.00	148.00	1148.00

1490 NH CARD USED

*SECNO 28.090

3470 ENCROACHMENT STATIONS= .0 200.0 TYPE= 1 TARGET= 199.999

28.09	17.06	750.56	.00	750.56	750.72	.16	.01	.06	735.70
3650.	513.	2648.	489.	226.	742.	398.	702.	124.	735.70
1.53	2.28	3.57	1.23	.069	.085	.085	.045	733.50	18.45
.000888	50.	50.	50.	2	0	0	.00	181.55	200.00

*SECNO 28.230

CROSS SECTION ZZ UPSTREAM OF DI&I RR

28.23	17.16	750.66	.00	750.66	750.83	.17	.11	.01	735.70
3650.	382.	2767.	501.	229.	747.	473.	705.	124.	735.70
1.54	1.67	3.71	1.06	.085	.069	.085	.045	733.50	18.24
.000719	200.	140.	30.	2	0	0	.00	232.13	250.37

490 NH CARD USED
*SECNO 28.570

3470 ENCROACHMENT STATIONS= .0 350.0 TYPE= 1 TARGET= 349.999

CROSS SECTION AA DOWNSTREAM OF MERRICK STREET

28.57	18.52	750.92	.00	750.92	751.05	.13	.21	.01	736.20
3650.	285.	2497.	868.	193.	719.	932.	717.	126.	736.20
1.57	1.47	3.47	.93	.085	.069	.107	.045	732.40	26.05
.000596	370.	340.	230.	0	0	0	.00	323.95	350.00

*SECNO 28.610

MERRICK STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-14

28.61	15.09	750.89	.00	750.89	751.13	.24	.03	.05	750.80
3650.	0.	3320.	330.	0.	809.	424.	718.	126.	749.30
1.57	.00	4.10	.78	.080	.045	.080	.045	735.80	324.41
.000718	40.	40.	40.	2	0	0	.00	287.52	611.92

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	35.20	.00	660.00	1.12	735.80	735.80

*SECNO 28.640

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	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
751.60	751.13	.00	1482.	2173.	660.	660.	749.00	749.10

MERRICK STREET BRIDGE -ADJACENT UPSTREAM SECTION S-14

BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED

28.64	15.10	750.90	.00	750.90	751.14	.24	.01	.00	750.80

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    3650.       0.     3316.      334.       0.      810.      428.      719.      126.     749.30
     1.58      .00      4.10       .78      .080      .045      .080      .045    735.80    324.20
 .000714       30.       30.       30.         2         0         4       .00    288.14    612.35


1490 NH CARD USED
*SECNO 28.690

          CROSS SECTION  AB       UPSTREAM OF MERRICK STREET

    28.69     17.74    751.04       .00    751.04    751.19       .15       .03       .02    736.30
    3650.      388.     2735.      527.      330.      758.      819.      721.      127.    736.30
     1.58      1.18      3.61       .64       .091      .052      .112      .045    733.30     51.42
 .000389       50.       50.       50.         2         0         0       .00    408.07    459.48

CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 29.270

3470 ENCROACHMENT STATIONS=      45.0      460.0  TYPE=      1  TARGET=      415.000

          CROSS SECTION  AC

    29.27     16.49    751.29       .00    751.29    751.32       .03       .11       .01    735.60
    3650.     1742.     1027.      881.      1710.     473.     1137.      748.      130.    735.60
     1.69      1.02      2.17       .78       .075      .052      .078      .046    734.80     45.00
 .000141       550.      580.      270.         0         0         0       .00    415.00    460.00


1490 NH CARD USED
*SECNO 30.290

3470 ENCROACHMENT STATIONS=      140.0      880.0  TYPE=      1  TARGET=      740.000

          CROSS SECTION  AD

    30.29     18.59    751.39       .00    751.38    751.40       .01       .08       .00    737.20
    3650.     2911.     720.      120.      4464.     531.      237.      843.      143.    737.20
     2.04       .63      1.36       .51       .066      .052      .085      .046    732.80    140.00
 .000055       950.     1020.     1050.         2         0         0       .00    740.00    880.00

1490 NH CARD USED
*SECNO 31.150

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=      360.0      415.0  TYPE=      1  TARGET=       55.000
    31.15     14.84    751.04       .00    751.04    751.74       .70       .13       .21    738.10
    3650.      105.     3273.      272.       58.      465.      116.      899.      151.    738.10
     2.08      1.80      7.04      2.36       .085      .052      .085      .046    736.20    360.00
 .001809       820.      860.      870.         2         0         0       .00     55.00    415.00

CCHV=     .300 CEHV=     .500
*SECNO 31.200
   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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31.20	14.94	751.14	.00	751.11	751.82	.68	.08	.00	738.10
3650.	124.	3265.	261.	91.	468.	126.	900.	151.	738.10
2.08	1.37	6.97	2.08	.080	.045	.080	.046	736.20	324.39
.001318	50.	50.	50.	2	0	0	.00	95.66	420.05

*SECNO 31.230

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 767.00 MAX ELLC= 759.00

NYC RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-15A

31.23	15.69	752.59	.00	752.57	752.88	.28	.93	.12	767.00
3650.	0.	3650.	0.	0.	855.	0.	917.	153.	767.00
2.14	.00	4.27	.00	.080	.045	.080	.046	736.90	3.00
.000777	900.	940.	950.	0	0	0	.00	57.00	60.00

*SECNO 31.260

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 767.00 MAX ELLC= 759.00

NYC RR BRIDGE -ADJACENT UPSTREAM SECTION S-15A

31.26	15.72	752.62	.00	752.60	752.90	.28	.02	.00	767.00
3650.	0.	3650.	0.	0.	856.	0.	917.	153.	767.00
2.15	.00	4.26	.00	.080	.045	.080	.046	736.90	3.00
.000773	27.	27.	27.	0	0	0	.00	57.00	60.00

490 NH CARD USED

*SECNO 31.280

31.28	16.32	752.52	.00	752.50	753.03	.50	.02	.11	738.10
3650.	210.	3135.	305.	167.	514.	154.	918.	153.	738.10
2.15	1.26	6.10	1.99	.085	.052	.085	.046	736.20	301.21
.001190	10.	20.	20.	2	0	0	.00	120.88	422.09

*SECNO 31.300

CROSS SECTION AE UPSTREAM OF NYC RR

31.30	16.35	752.55	.00	752.53	753.05	.50	.02	.00	738.10
3650.	211.	3134.	305.	168.	514.	154.	918.	153.	738.10
2.15	1.26	6.09	1.98	.085	.052	.085	.046	736.20	300.89
.001184	20.	20.	20.	0	0	0	.00	121.24	422.12

*SECNO 31.320

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

495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 752.40 ELREA= 754.30

14112 G.B.

BEECHER STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-15

31.32	15.37	752.77	.00	752.76	753.12	.35	.02	.05	756.50
3650.	0.	3650.	0.	0.	773.	0.	918.	153.	758.50
2.15	.00	4.72	.00	.080	.045	.080	.046	737.40	420.00
.001011	20.	20.	20.	2	0	0	.00	52.00	472.00

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	52.00	.00	780.00	.00	737.40	737.40

*SECNO 31.380
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
753.28	753.12	.00	0.	3650.	780.	780.	752.40	754.60

BEECHER STREET BRIDGE -ADJACENT UPSTREAM SECTION S-15

31.38	15.55	752.95	.00	752.93	753.28	.34	.16	.00	756.50
3650.	0.	3650.	0.	0.	782.	0.	919.	153.	758.50
2.15	.00	4.67	.00	.080	.045	.080	.046	737.40	420.00
.000979	51.	51.	51.	2	0	0	.00	52.00	472.00

1490 NH CARD USED
*SECNO 31.430

3265 DIVIDED FLOW

CROSS SECTION AF UPSTREAM OF BEECHER STREET

31.43	18.31	753.01	.00	752.99	753.34	.33	.05	.00	738.20
3650.	393.	2560.	697.	197.	481.	301.	920.	153.	738.20
2.16	1.99	5.32	2.32	.090	.063	.085	.046	734.70	78.63
.001219	50.	50.	50.	1	0	0	.00	116.85	548.96

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 31.980

3470 ENCROACHMENT STATIONS= 80.0 350.0 TYPE= 1 TARGET= 270.000

CROSS SECTION AG

31.98	18.95	753.55	.00	753.53	753.89	.04	.22	.03	738.00
3650.	122.	1508.	2020.	156.	688.	1933.	944.	155.	738.00
2.26	.78	2.19	1.05	.095	.063	.090	.046	734.60	80.00
.000200	550.	550.	550.	2	0	0	.00	270.00	350.00

1490 NH CARD USED

*SECNO 32.780

3470 ENCROACHMENT STATIONS= 40.0 535.0 TYPE= 1 TARGET= 495.000

CROSS SECTION AH

32.78	16.67	753.67	.00	753.65	753.68	.01	.09	.00	739.20
3650.	274.	664.	2712.	429.	486.	4188.	1005.	161.	739.20
2.51	.64	1.37	.65	.095	.063	.100	.046	737.00	40.00
.000087	700.	800.	650.	2	0	0	.00	495.00	535.00

1490 NH CARD USED
*SECNO 33.600

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	OCH	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= 270.0 615.0 TYPE= 1 TARGET= 345.000

CROSS SECTION AI

33.60	16.34	753.74	.00	753.72	753.76	.02	.07	.00	738.70
3650.	2481.	1124.	45.	3124.	707.	100.	1081.	168.	738.70
2.71	.79	1.59	.44	.100	.063	.100	.046	737.40	270.00
.000116	770.	820.	680.	2	0	0	.00	345.00	615.00

1490 NH CARD USED
*SECNO 34.150

3470 ENCROACHMENT STATIONS= 130.0 850.0 TYPE= 1 TARGET= 720.000

CROSS SECTION AJ

34.15	16.80	753.80	.00	753.77	753.80	.01	.04	.00	739.10
3650.	2905.	700.	45.	6404.	640.	120.	1148.	175.	739.10
2.96	.45	1.09	.38	.110	.063	.110	.046	737.00	130.00
.000054	520.	550.	580.	0	0	0	.00	720.00	850.00

1490 NH CARD USED
*SECNO 35.190

3470 ENCROACHMENT STATIONS= 60.0 680.0 TYPE= 1 TARGET= 620.000

CROSS SECTION AK

35.19	16.96	753.86	.00	753.83	753.87	.01	.06	.00	739.90
3650.	1235.	789.	1627.	2165.	584.	3071.	1287.	189.	739.90
3.33	.57	1.35	.53	.110	.063	.110	.046	736.90	60.00
.000086	940.	1040.	880.	1	0	0	.00	620.00	680.00

1490 NH CARD USED
*SECNO 36.270

3470 ENCROACHMENT STATIONS= 440.0 640.0 TYPE= 1 TARGET= 200.000

CROSS SECTION AL DOWNSTREAM OF US-223

14112 G.B

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    36.27     16.87    753.97       .00    753.94    754.05       .08       .16       .02    741.40
    3650.      690.     2199.      761.      650.      789.      689.     1382.      199.    741.40
     3.46      1.06      2.79      1.11      .110      .063      .110      .046    737.10    440.00
 .000372       940.     1080.     1100.         2         0         0       .00    200.00    640.00

CCHV=     .300 CEHV=     .500
*SECNO 36.320

3470 ENCROACHMENT STATIONS=      460.0      620.0  TYPE=       1  TARGET=      160.000
    36.32     16.88    753.98       .00    753.94    754.08       .10       .01       .01    741.40
    3650.      575.     2412.      663.      495.      790.      538.     1384.      199.    741.40
     3.47      1.16      3.05      1.23      .080      .045      .080      .046    737.10    460.00
 .000228       50.       50.       50.         0         0         0       .00    160.00    620.00


*SECNO 36.390
   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=   0 MIN ELTRD=  763.00 MAX ELLC=  759.50


3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      763.00 ELREA=      763.30


        US-223 BRIDGE  -ADJACENT DOWNSTREAM SECTION  S-16

    36.39     16.69    753.99       .00    753.96    754.10       .11       .02       .00    763.00
    3650.         0.    3650.         0.        0.     1374.         0.     1387.      199.    763.30
     3.48       .00      2.66       .00      .080      .045      .080      .046    737.30    973.95
 .000305        70.       70.       70.         0         0         0       .00    134.01   1107.97


*SECNO 36.440

3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=  763.00 MAX ELLC=  759.50


        US-223 BRIDGE  -ADJACENT  UPSTREAM SECTION  S-16

    36.44     16.71    754.01       .00    753.97    754.12       .11       .01       .00    763.00
    3650.         0.    3650.         0.        0.     1375.         0.     1389.      199.    763.30
     3.48       .00      2.66       .00      .080      .045      .080      .046    737.30    973.94
 .000305        47.       47.       47.         0         0         0       .00    134.05   1107.99

490 NH CARD USED
*SECNO 36.500

3470 ENCROACHMENT STATIONS=      430.0      670.0  TYPE=       1  TARGET=      240.000
    36.50     16.93    754.03       .00    753.99    754.14       .12       .02       .00    741.40
    3650.      260.     2523.      867.      286.      791.      753.     1391.      199.    741.40
     3.49       .91      3.19      1.15      .120      .063      .110      .046    737.10    478.25
 .000487        60.       60.       60.         0         0         0       .00    191.75    670.00


*SECNO 36.520
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3470 ENCROACHMENT STATIONS= 410.0 690.0 TYPE= 1 TARGET= 280.000

CROSS SECTION AM UPSTREAM OF US-223

36.52	16.95	754.05	.00	754.02	754.15	.10	.01	.00	741.40
3650.	250.	2417.	984.	286.	792.	886.	1392.	200.	741.40
3.49	.87	3.05	1.11	.120	.063	.110	.046	737.10	478.18
.000445	20.	20.	20.	1	0	0	.00	211.81	690.00

14112 G.S.

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN, CITY OF

3) WATERCOURSE: S. BR. RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

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*****************************************************
 HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
 ERROR CORR -  01,02,03
 MODIFICATION -  50,51,52,53
*****************************************************


C
T1 HUD-FIA FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS  PRS MARCH,1980
T2 CITY OF ADRIAN  SOUTH BRANCH RIVER RAISIN
T3       S.BR.RIVER RAISIN-ADRIAN 100-YEAR FLOOD + EXISTING CONDITIONS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     0.        4.        0.        0..   .000000      .00       .0        0.    723.600     .000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    1.000      .000    -1.000      .000      .000      .000      .000      .000      .000      .000

NC      .080      .080      .045      .100      .300      .000      .000      .000      .000      .000
QT     5.000  2960.000  4620.000  5230.000  6510.000  5230.000      .000      .000  5230.000      .000
NH     5.000      .090    89.900      .080   181.700      .063   234.700      .090   316.400      .100
NH  1162.500      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000      .000      .000      .000     7.100   140.000   270.000      .000      .000


      CROSS SECTION A        UPSTREAM OF HOWELL HWY

X1    12.130    20.000   181.700   234.700      .000      .000      .000      .000      .000      .000
GR   735.600      .000   728.000    89.900   712.000   181.700   710.300   186.700   709.700   191.700
GR   709.200   196.700   708.700   201.700   708.600   206.700   708.500   211.700   708.400   216.700
GR   708.500   221.700   709.800   226.700   710.100   231.700   712.000   234.700   729.600   316.400
GR   725.000   494.900   725.300   648.000   728.400   848.200   728.300  1006.700   736.000  1162.500
NH     5.000      .085    47.400      .100   112.000      .063   131.000      .100   431.200      .080
NH   929.200      .000      .000      .000      .000      .000      .000      .000      .000      .000
ET      .000      .000      .000      .000      .000     7.100   230.000   435.000      .000      .000


      CROSS SECTION AAA

X1    12.650    14.000   112.000   131.000   480.000   540.000   520.000      .000      .000      .000
X3      .000      .000      .000      .000      .000   230.000      .000      .000      .000      .000
GR   736.000      .000   734.700    47.400   713.000   112.000   711.500   112.100   710.600   117.000
GR   710.100   122.000   709.600   127.000   711.700   130.900   713.000   131.000   716.900   297.900
GR   720.000   431.200   730.900   611.600   734.100   795.300   735.600   929.200      .000      .000
NH     4.000      .080   454.900      .095   504.000      .063   534.000      .085   599.600      .000
ET      .000      .000      .000      .000      .000     7.100   230.000   565.000      .000      .000


      CROSS SECTION B

X1    13.650    17.000   504.000   534.000  1070.000  1020.000  1000.000      .000      .000      .000
GR   736.000      .000   726.600    79.700   723.900   259.100   721.900   454.900   714.700   499.000
GR   711.200   504.000   710.500   509.000   710.500   514.000   710.700   519.000   710.900   524.000
GR   710.800   529.000   711.200   534.000   711.300   539.000   711.700   544.000   713.400   549.000
GR   714.700   554.000   736.000   599.600      .000      .000      .000      .000      .000      .000
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NH	4.000	.100	37.800	.063	74.800	.100	128.300	.080	304.700	.000

CROSS SECTION C

X1	14.590	12.000	37.800	74.800	950.000	950.000	940.000	.000	.000	.000
GR	735.900	.000	715.000	32.800	713.500	37.800	712.500	42.800	712.000	47.800
GR	711.400	52.800	712.300	57.800	715.000	74.800	718.000	79.800	727.900	128.300
GR	734.400	234.000	736.100	304.700	.000	.000	.000	.000	.000	.000
NH	5.000	.085	552.700	.100	604.000	.063	662.100	.100	679.100	.085
NH	1079.100	.000	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	450.000	1000.000	.000	.000

CROSS SECTION D

X1	15.950	28.000	604.000	662.100	1200.000	1400.000	1360.000	.000	.000	.000
X3	.000	.000	.000	450.000	.000	.000	.000	.000	.000	.000
GR	744.100	.000	726.300	103.100	723.200	226.700	723.200	372.000	723.300	494.000
GR	723.800	552.700	716.400	603.900	716.200	604.000	715.900	609.000	715.600	614.000
GR	715.600	619.000	715.400	624.000	715.500	629.000	715.400	634.000	715.500	639.000
GR	715.700	644.000	715.500	649.000	715.200	654.000	715.200	659.000	715.400	662.000
GR	716.400	662.100	721.400	679.100	721.800	778.600	723.100	873.500	724.200	973.000
GR	725.000	1027.100	726.300	1051.800	744.000	1079.100	.000	.000	.000	.000
NH	4.000	.090	73.500	.063	129.500	.100	146.300	.085	880.700	.000
ET	.000	.000	.000	.000	.000	7.100	65.000	585.000	.000	.000

CROSS SECTION E

X1	17.150	21.000	73.500	129.500	1220.000	1200.000	1200.000	.000	.000	.000
GR	744.100	.000	731.800	40.900	717.900	73.500	716.800	78.500	716.700	83.500
GR	717.000	98.500	717.300	93.500	717.200	98.500	717.000	103.500	716.800	108.500
GR	716.900	113.500	717.200	118.500	717.600	123.500	717.900	129.500	722.900	146.300
GR	723.100	247.200	723.100	376.000	723.100	496.500	727.100	611.500	737.800	752.300
GR	744.100	880.700	.000	.000	.000	.000	.000	.000	.000	.000
NH	7.000	.090	495.800	.085	537.600	.045	547.200	.085	592.600	.065
NH	1201.400	.040	1356.200	.085	1490.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	230.000	1360.000	.000	.000

CROSS SECTION F

X1	18.130	26.000	537.600	568.000	950.000	1100.000	980.000	.000	.000	.000
GR	744.100	.000	728.100	82.600	728.100	213.100	728.100	378.400	727.200	495.800
GR	720.200	537.600	720.000	540.000	720.100	548.000	719.800	553.000	719.800	558.000
GR	719.100	563.000	719.900	568.000	723.200	580.000	724.800	584.000	726.400	588.000
GR	727.800	592.600	727.800	678.600	723.300	774.200	723.300	883.000	727.000	1019.900
GR	727.000	1201.400	719.500	1281.800	719.300	1302.900	723.400	1356.200	735.300	1442.400
GR	743.500	1490.000	.000	.000	.000	.000	.000	.000	.000	.000
NH	7.000	.100	435.800	.080	776.800	.085	796.800	.045	859.800	.085
NH	875.900	.060	1116.800	.200	1547.500	.000	.000	.000	.000	.000

CROSS SECTION G DOWNSTREAM OF MAIN STREET

X1	19.400	27.000	796.800	859.800	1100.000	1400.000	1270.000	.000	.000	.000
GR	744.100	.000	734.900	71.400	731.600	200.200	730.500	302.300	738.200	435.800
GR	739.100	566.700	736.400	725.900	735.500	776.800	723.500	796.800	721.500	801.800
GR	720.500	806.800	720.300	811.800	720.000	816.800	719.900	821.800	720.000	826.800

GR	720.900	831.800	721.600	836.800	722.100	841.800	722.500	846.200	722.700	851.800
GR	723.000	856.800	723.500	859.800	730.700	875.900	730.400	1002.600	730.400	1116.800
GR	740.000	1243.700	749.300	1547.500	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
X1	19.450	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000

MAIN STREET --M-52-- BRIDGE -ADJACENT DOWNSTREAM SECTION S-03

X1	19.470	23.000	550.000	675.000	20.000	20.000	20.000	.000	.000	.000
X2	.000	.000	.000	735.100	739.100	.000	.000	.000	.000	.000
GR	744.200	.000	743.700	36.000	743.300	111.000	741.400	230.000	740.700	323.000
GR	739.600	432.000	739.600	550.000	733.500	550.000	719.400	585.000	719.100	595.000
GR	719.600	605.000	719.600	615.000	722.400	625.000	722.600	635.000	724.800	645.000
GR	732.900	675.000	739.100	675.000	740.000	754.000	739.300	862.000	741.200	1007.000
GR	744.200	1129.000	745.500	1205.000	747.900	1328.000	.000	.000	.000	.000
BT	23.000	.000	744.200	744.200	36.000	743.700	743.700	111.000	743.300	743.300
BT	230.000	741.400	741.400	323.000	740.700	740.700	432.000	739.600	739.600	550.000
BT	739.600	739.600	550.000	739.600	735.100	585.000	739.500	735.000	595.000	739.400
BT	739.400	605.000	739.400	734.900	615.000	739.300	734.800	625.000	739.300	734.800
BT	635.000	739.200	734.700	645.000	739.200	734.700	675.000	739.100	734.600	675.000
BT	739.100	739.100	754.000	740.000	740.000	862.000	739.300	739.300	1007.000	741.200
BT	741.200	1129.000	744.200	744.200	1205.000	745.500	745.500	1328.000	747.900	747.900

MAIN STREET --M-52-- BRIDGE -ADJACENT UPSTREAM SECTION S-03

X1	19.510	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
X2	.000	.000	.000	735.100	739.100	.000	1.000	.000	.000	.000
NH	6.000	.080	275.000	.120	331.500	.052	378.500	.120	423.700	.075
NH	676.700	.200	1146.000	.000	.000	.000	.000	.000	.000	.000

X1	19.530	18.000	331.500	378.500	20.000	20.000	20.000	.000	.000	.000
GR	743.900	.000	741.600	80.600	740.900	184.400	739.900	275.000	723.500	331.500
GR	721.000	336.500	720.400	341.500	719.100	346.500	718.200	351.500	717.400	356.500
GR	718.000	361.500	723.500	378.500	736.400	423.700	738.800	544.000	739.300	676.700
GR	741.200	794.600	746.800	1017.300	749.700	1146.000	.000	.000	.000	.000

CROSS SECTION H UPSTREAM OF MAIN STREET

X1	19.560	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
QT	5.000	1990.000	3160.000	3650.000	4580.000	3650.000	.000	.000	3650.000	.000
NH	5.000	.090	304.800	.120	366.700	.052	403.700	.120	461.400	.085
NH	711.500	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION I DOWNSTREAM OF BENT OAK AVE

X1	20.580	19.000	366.700	403.700	1050.000	770.000	1020.000	.000	.000	.000
X3	.000	.000	.000	340.000	.000	460.000	.000	.000	.000	.000
GR	748.300	.000	742.500	53.600	742.400	136.000	741.200	217.000	738.900	273.000
GR	744.700	304.800	724.600	366.700	724.100	371.700	723.600	376.700	723.500	381.700
GR	723.400	386.700	723.500	391.700	723.500	396.700	724.100	401.700	724.600	403.700
GR	731.400	461.400	732.400	550.000	733.700	613.800	748.300	711.500	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000

X1	20.630	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
X3	.000	.000	.000	355.000	.000	440.000	.000	.000	.000	.000

BENT OAK AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-04

X1	20.660	22.000	360.000	425.000	30.000	30.000	30.000	.000	.000	.000
X2	.000	.000	.000	740.300	743.100	.000	.000	.000	.000	.000
GR	755.100	.000	751.900	75.000	749.700	147.000	746.900	209.000	744.300	286.000
GR	744.800	360.000	724.300	360.000	723.400	370.000	722.100	380.000	724.100	390.000
GR	723.200	400.000	729.300	425.000	744.800	425.000	743.100	457.000	744.600	566.000
GR	745.200	645.000	746.100	720.000	748.400	810.000	751.800	907.000	753.600	950.000
GR	756.200	1001.000	758.300	1042.000	.000	.000	.000	.000	.000	.000
BT	22.000	.000	755.100	755.100	75.000	751.900	751.900	147.000	749.700	749.700
BT	209.000	746.900	746.900	286.000	744.300	744.300	360.000	744.800	744.800	360.000
BT	744.800	740.300	370.000	744.800	740.300	380.000	744.800	740.300	390.000	744.800
BT	740.300	400.000	744.800	740.300	425.000	744.800	740.300	425.000	744.800	744.800
BT	457.000	743.100	743.100	566.000	744.600	744.600	645.000	745.200	745.200	720.000
BT	746.100	746.100	810.000	748.400	748.400	907.000	751.800	751.800	950.000	753.600
BT	753.600	1001.000	756.200	756.200	1042.000	758.300	758.300	.000	.000	.000

BENT OAK AVE BRIDGE -ADJACENT UPSTREAM SECTION S-04

X1	20.710	.000	.000	.000	46.000	46.000	46.000	.000	.000	.000
X2	.000	.000	.000	740.300	743.100	.000	1.000	.000	.000	.000
NH	5.000	.100	112.100	.052	153.100	.120	205.800	.090	475.600	.080
NH	827.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION J UPSTREAM OF BENT OAK AVE

X1	20.750	21.000	112.100	153.100	50.000	30.000	40.000	.000	.000	.000
X3	.000	.000	.000	70.000	.000	205.000	.000	.000	.000	.000
GR	748.300	.000	746.600	49.000	727.800	105.300	724.700	112.100	723.000	117.100
GR	722.300	122.100	722.100	127.100	721.300	132.100	721.600	137.100	722.100	142.100
GR	723.700	147.100	724.700	153.100	733.900	205.800	735.800	282.800	738.000	350.200
GR	745.500	434.800	747.400	475.600	747.400	572.000	750.500	658.200	754.600	754.400
GR	757.500	827.000	.000	.000	.000	.000	.000	.000	.000	.000

X1	20.800	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	40.000	.000	235.000	.000	.000	.000	.000
NH	5.000	.090	275.800	.110	332.200	.052	369.200	.110	382.000	.085
NH	607.100	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION K

X1	21.390	18.000	332.200	369.200	570.000	450.000	590.000	.000	.000	.000
GR	748.200	.000	746.500	14.700	741.100	90.900	733.200	167.200	730.600	275.800
GR	725.200	332.200	724.100	337.200	724.200	342.200	723.900	347.200	723.900	352.200
GR	723.900	357.200	724.200	362.200	724.700	367.200	725.200	369.200	731.700	382.000
GR	743.000	455.500	743.000	542.900	748.300	607.100	.000	.000	.000	.000

X1	21.960	.000	.000	.000	200.000	600.000	570.000	.000	.500	.000
X3	.000	.000	.000	275.000	.000	425.000	.000	.000	.000	.000

14112 G.B.

NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
	DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-05									
X1	21.990	10.000	1002.000	1170.000	30.000	30.000	30.000	.880	.000	.000
GR	746.200	1002.000	740.000	1002.000	724.300	1074.000	723.200	1086.000	724.400	1098.000
GR	724.400	1110.000	724.700	1120.000	724.700	1132.000	740.000	1170.000	744.600	1170.000
SB	.950	1.800	2.600	176.000	56.300	14.800	1822.000	2.400	.000	.000
	DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-05									
	BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED									
X1	22.010	.000	.000	.000	10.000	10.000	10.000	.000	.000	.000
X2	.000	.000	1.000	743.100	745.400	.000	.000	.000	.000	.000
NH	5.000	.090	263.700	.110	277.800	.058	307.800	.110	348.600	.090
NH	1048.200	.000	.000	.000	.000	.000	.000	.000	.000	.000
	CROSS SECTION L UPSTREAM OF DT&I RR									
X1	22.040	21.000	277.800	307.800	30.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	190.000	.000	370.000	.000	.000	.000	.000
GR	749.400	.000	747.800	45.000	735.800	148.800	731.800	237.500	731.800	263.700
GR	725.900	277.800	724.700	282.800	724.300	287.600	723.900	292.800	723.500	297.800
GR	723.900	302.800	725.900	307.800	734.000	348.600	735.800	446.300	744.000	561.300
GR	740.400	668.100	734.700	748.800	736.500	872.900	739.200	930.400	741.900	1000.500
GP	748.200	1048.200	.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.090	123.300	.110	224.000	.058	274.000	.110	763.200	.090
NH	1004.900	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	22.120	27.000	224.000	274.000	80.000	80.000	80.000	.000	.000	.000
X3	.000	.000	.000	170.000	.000	300.000	.000	.000	.000	.000
GR	750.300	.000	746.600	22.700	740.900	123.300	728.500	193.000	726.200	224.000
GR	724.800	229.000	722.900	234.000	722.600	239.000	722.500	244.000	722.500	249.000
GR	722.700	254.000	723.800	259.000	724.400	264.000	725.400	269.000	726.200	274.000
GR	735.900	302.800	728.300	373.700	728.300	427.800	733.600	450.900	732.700	549.800
GR	728.100	594.300	728.100	663.800	733.000	688.000	744.200	763.200	741.900	828.600
GR	741.900	894.600	748.800	1004.900	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	22.160	.000	.000	.000	40.000	40.000	40.000	.000	.000	.000
X3	.000	.000	.000	200.000	.000	300.000	.000	.000	.000	.000
	GRAND AVE-EXTENDED									
X1	22.180	27.000	260.000	342.000	20.000	20.000	20.000	.000	.000	.000
GR	753.600	.000	752.300	43.000	750.600	91.000	747.500	151.000	745.100	205.000
GR	743.900	257.000	730.200	260.000	730.300	260.000	726.500	280.000	724.500	300.000
GR	726.100	320.000	730.000	342.000	738.300	342.000	742.200	382.000	739.400	502.000
GR	739.200	567.000	739.000	623.000	740.100	685.000	741.200	743.000	744.400	806.000
GR	742.000	852.000	741.500	931.000	742.400	980.000	743.000	1030.000	744.000	1068.000
GR	745.500	1092.000	749.400	1140.000	.000	.000	.000	.000	.000	.000

GRAND AVE-EXTENDED

X1	22.200	.000	.000	.000	20.000	20.000	20.000	.000	.000	.000
NH	5.000	.090	123.300	.110	224.000	.058	274.000	.110	763.200	.090
NH	1004.900	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	22.220	27.000	224.000	274.000	20.000	20.000	20.000	.000	.000	.000
X3	.000	.000	.000	160.000	.000	300.000	.000	.000	.000	.000
GR	750.300	.000	746.600	22.700	740.900	123.300	728.500	193.000	726.200	224.000
GR	724.800	229.000	722.900	234.000	722.600	239.000	722.500	244.000	722.500	249.000
GR	722.700	254.000	723.800	259.000	724.400	264.000	725.400	269.000	726.200	274.000
GR	735.900	302.800	728.300	373.700	728.300	427.800	733.600	450.900	732.700	549.800
GR	728.100	594.300	728.100	663.800	733.000	688.000	744.200	763.200	741.800	828.600
GR	741.900	894.600	748.800	1004.900	.000	.000	.000	.000	.000	.000

CROSS SECTION M UPSTREAM OF GRAND AVE-EXTENDED

X1	22.260	.000	.000	.000	40.000	40.000	40.000	.000	.000	.000
X3	.000	.000	.000	120.000	.000	300.000	.000	.000	.000	.000
NH	5.000	.100	100.300	.058	134.300	.110	166.400	.090	274.700	.070
NH	809.400	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION N

X1	22.660	21.000	100.300	134.300	870.000	830.000	800.000	.000	.000	.000
GR	748.300	.000	745.600	41.900	727.000	100.300	724.800	105.300	724.700	110.300
GR	724.300	115.300	725.000	120.300	725.200	125.300	725.800	130.300	727.000	134.300
GR	735.500	166.400	741.300	215.100	747.000	258.100	751.100	274.700	749.300	297.800
GR	745.800	370.700	745.400	464.000	743.500	562.000	743.500	624.100	743.500	689.100
GR	748.000	809.400	.000	.000	.000	.000	.000	.000	.000	.000
NH	6.000	.075	262.100	.110	308.200	.058	343.200	.100	351.900	.070
NH	431.000	.200	665.300	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION O DOWNSTREAM OF MAPLE STREET

X1	23.180	19.000	308.200	343.200	550.000	500.000	520.000	.000	.000	.000
GR	748.100	.000	747.300	58.900	747.300	97.500	746.500	198.500	745.900	262.100
GR	727.600	308.200	727.100	313.200	726.400	318.200	725.700	323.200	724.800	328.200
GR	724.500	333.200	724.600	338.200	727.600	343.200	739.000	351.900	739.000	428.200
GR	745.000	431.000	746.500	509.900	744.600	552.600	748.300	665.300	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

MAPLE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-07

X1	23.240	24.000	460.000	524.000	60.000	60.000	60.000	.000	.000	.000
GR	760.900	.000	758.400	51.000	756.200	96.000	753.800	150.000	751.200	199.000
GR	748.400	257.000	746.500	338.000	745.300	426.000	744.400	460.000	726.100	460.000
GR	726.100	470.000	726.700	480.000	727.200	490.000	727.100	500.000	729.300	524.000
GR	744.400	524.000	745.300	565.000	746.700	625.000	745.900	676.000	747.100	774.000
GR	747.800	852.000	749.300	909.000	752.100	1000.000	761.400	1079.000	.000	.000
SB	.000	1.500	2.800	.000	58.500	.000	766.000	.000	.000	.000

MAPLE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-07

14112 G.B.

X1	23.280	.000	.000	.000	47.000	47.000	47.000	.000	.000	.000
X2	.000	.000	1.000	739.200	744.400	.000	.000	.000	.000	.000
NH	5.000	.085	240.500	.110	265.900	.058	300.900	.110	360.900	.085
NH	627.700	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION P UPSTREAM OF MAPLE STREET

X1	23.340	17.000	265.900	300.900	60.000	60.000	60.000	.000	.000	.000
GR	748.100	.000	745.100	62.400	745.200	137.700	745.600	189.700	745.600	240.500
GR	727.900	265.900	725.800	270.900	725.800	275.900	725.500	280.900	726.100	285.900
GR	727.300	290.900	727.900	300.900	745.900	360.900	745.900	433.000	745.800	515.100
GR	747.300	604.000	748.200	627.700	.000	.000	.000	.000	.000	.000
X1	23.610	.000	.000	.000	270.000	270.000	270.000	.000	1.600	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-08

X1	23.640	15.000	370.000	489.000	30.000	30.000	30.000	.850	.000	.000
X3	.000	.000	.000	.000	.000	1097.000	.000	.000	.000	.000
GR	742.000	.000	743.000	45.000	743.000	109.000	743.200	155.000	743.800	209.000
GR	744.100	260.000	743.700	370.000	728.600	370.000	727.800	383.000	727.300	407.000
GR	727.800	431.000	739.300	489.000	744.700	489.000	745.800	587.000	746.200	653.000
SB	.950	2.100	2.800	.000	45.000	7.800	930.000	1.600	.000	.000

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-08

BRIDGE SKEWED 32 DEGREES; SKEW FACTOR OF 0.85 APPLIED

X1	23.660	.000	.000	.000	10.000	10.000	10.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	1097.000	.000	.000	.000	.000
X2	.000	.000	1.000	742.400	742.000	.000	.000	.000	.850	.000
BT	15.000	.000	742.000	742.000	45.000	743.000	743.000	109.000	743.000	743.000
BT	155.000	743.200	743.200	209.000	743.800	743.800	260.000	744.100	744.100	370.000
BT	743.700	743.700	370.000	743.700	741.500	383.000	743.800	741.600	407.000	744.000
BT	741.800	431.000	744.200	742.000	489.000	744.700	742.400	489.000	744.700	744.700
BT	587.000	745.800	745.800	653.000	746.200	746.200	.000	.000	.000	.000
NH	5.000	.085	547.300	.110	559.300	.058	601.300	.110	631.300	.085
NH	816.500	.000	.000	.000	.000	.000	.000	.000	.000	.000
X1	23.690	22.000	559.300	601.300	30.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	480.000	.000	630.000	.000	.000	.000	.000
GR	743.700	.000	745.100	64.900	743.500	154.600	740.400	264.700	739.400	361.300
GR	739.500	480.000	737.400	547.300	730.400	559.300	729.200	564.300	729.100	569.300
GR	729.200	574.300	728.800	579.300	728.600	584.300	728.700	589.300	728.800	594.300
GR	728.500	599.300	730.400	601.300	732.500	607.300	741.700	631.300	738.600	688.600
GR	739.700	764.200	748.200	816.500	.000	.000	.000	.000	.000	.000

CROSS SECTION R UPSTREAM OF DT&I RR

X1	23.830	.000	.000	.000	120.000	170.000	140.000	.000	.000	.000
X3	.000	.000	.000	480.000	.000	630.000	.000	.000	.000	.000
NH	6.000	.090	345.400	.075	582.100	.110	595.800	.058	625.300	.110
NH	648.800	.090	812.600	.000	.000	.000	.000	.000	.000	.000

X1	24.560	20.000	595.800	625.800	420.000	800.000	730.000	.000	.000	.000
X3	.000	.000	.000	345.000	.000	.000	.000	.000	.000	.000
GR	748.000	.000	740.100	65.600	738.300	150.200	739.700	222.100	740.000	281.900
GR	742.300	345.400	739.300	392.000	742.800	502.300	741.400	582.100	732.600	595.800
GR	731.700	600.800	729.500	605.800	729.000	610.800	728.800	615.800	729.400	620.800
GR	732.600	625.800	744.700	648.800	743.600	659.800	744.800	729.100	757.600	812.600
X1	24.590	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

PRIVATE BRIDGE -ADJACENT DOWNSTREAM SECTION S-08A

X1	24.620	22.000	575.000	670.000	30.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	260.000	.000	.000	.000	.000	.000	.000
GR	749.000	.000	743.500	78.000	739.100	152.000	742.600	261.000	739.500	378.000
GR	743.000	488.000	743.000	523.000	740.400	575.000	734.700	575.000	730.400	585.000
GR	729.100	595.000	729.100	605.000	729.800	615.000	731.000	625.000	732.500	635.000
GR	734.000	645.000	736.100	655.000	737.100	660.000	738.400	670.000	740.800	670.000
GR	745.500	744.000	756.500	816.000	.000	.000	.000	.000	.000	.000
SB	1.050	1.500	2.900	.000	33.000	3.000	529.000	2.140	.000	.000

PRIVATE BRIDGE -ADJACENT UPSTREAM SECTION S-08A

X1	24.640	.000	.000	.000	10.000	10.000	10.000	.000	.000	.000
X2	.000	.000	1.000	739.000	739.100	.000	.000	.000	.000	.000
X3	.000	.000	.000	260.000	.000	.000	.000	.000	.000	.000
BT	22.000	.000	750.000	749.000	78.000	750.000	743.500	152.000	750.000	739.100
BT	261.000	750.000	742.600	378.000	739.500	739.500	488.000	743.000	743.000	523.000
BT	743.000	743.000	575.000	740.400	740.400	575.000	740.400	738.900	585.000	740.400
BT	738.000	595.000	740.500	738.000	605.000	740.500	738.000	615.000	740.600	739.300
BT	625.000	740.600	739.300	635.000	740.700	738.100	645.000	740.700	738.100	655.000
BT	740.700	738.100	660.000	740.800	739.300	670.000	740.800	739.300	670.000	740.800
BT	740.800	744.000	745.500	745.500	816.000	756.500	756.500	.000	.000	.000
NH	6.000	.090	345.400	.075	582.100	.110	595.800	.058	625.800	.110
NH	648.800	.090	812.600	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION S

X1	24.670	20.000	595.800	625.800	30.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	345.000	.000	.000	.000	.000	.000	.000
GR	748.000	.000	740.100	65.600	738.300	150.200	739.700	222.100	740.000	281.900
GR	742.300	345.400	739.300	392.000	742.800	502.300	741.400	582.100	732.600	595.800
GR	731.700	600.800	729.500	605.800	729.000	610.800	728.800	615.800	729.400	620.800
GR	732.600	625.800	744.700	648.800	743.600	659.800	744.800	729.100	757.600	812.600
X1	24.710	.000	.000	.000	40.000	40.000	40.000	.000	.000	.000
X3	.000	.000	.000	300.000	.000	.000	.000	.000	.000	.000
NH	3.000	.090	591.000	.058	729.000	.090	839.000	.000	.000	.000

PRIVATE SILL

X1	24.720	15.000	591.000	729.000	10.000	10.000	10.000	.000	.000	.000

14112 G.B.

X3	.000	.000	.000	295.000	.000	.000	.000	.000	.000	.000
GR	748.000	.000	736.000	52.000	737.100	84.000	738.200	113.000	739.000	205.000
GR	739.900	273.000	741.600	378.000	739.500	430.000	741.000	526.000	742.100	591.000
GR	732.300	616.000	732.300	644.000	733.400	661.000	744.500	729.000	755.900	839.000
NH	6.000	.090	345.400	.075	582.100	.110	595.800	.058	625.800	.110
NH	648.800	.090	812.600	.000	.000	.000	.000	.000	.000	.000
X1	24.730	20.000	595.800	625.800	10.000	10.000	10.000	.000	.000	.000
X3	.000	.000	.000	300.000	.000	.000	.000	.000	.000	.000
GR	748.000	.000	740.100	65.600	738.300	150.200	739.700	222.100	740.000	281.900
GR	742.300	345.400	739.300	392.000	742.800	502.300	741.400	582.100	732.600	595.800
GR	731.700	600.800	729.500	605.800	729.000	610.800	728.800	615.800	729.400	620.800
GR	732.600	625.800	744.700	648.800	743.600	659.800	744.800	729.100	757.600	812.600
NH	4.000	.200	152.900	.090	242.500	.058	277.500	.085	345.600	.000
X1	23.270	15.000	242.500	277.500	540.000	540.000	540.000	.000	.000	.000
GR	765.100	.000	745.800	40.000	747.900	94.900	749.800	152.900	732.800	242.500
GR	730.200	247.500	728.800	252.500	728.600	257.500	729.600	262.500	730.500	267.500
GR	731.300	272.500	731.300	277.400	732.800	277.500	744.400	280.200	756.400	345.600
X1	25.320	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

MAUMEE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-09

X1	25.330	28.000	805.000	880.000	10.000	10.000	10.000	.000	.000	.000
X2	.000	.000	.000	749.000	745.000	.000	.000	.000	.000	.000
GR	756.000	.000	753.600	65.000	751.400	185.000	749.400	280.000	747.600	362.000
GR	745.400	473.000	744.600	564.000	745.000	581.000	746.000	625.000	746.800	666.000
GR	749.000	733.000	750.800	805.000	739.800	813.000	739.400	815.000	737.300	825.000
GR	733.700	835.000	731.900	840.000	729.900	850.000	730.000	860.000	732.000	870.000
GR	753.300	880.000	754.200	898.000	755.500	933.000	757.100	970.000	758.900	1005.000
GR	761.500	1049.000	763.300	1094.000	764.900	1156.000	.000	.000	.000	.000
BT	28.000	.000	756.000	756.000	65.000	753.600	753.600	185.000	751.400	751.400
BT	280.000	749.400	749.400	362.000	747.600	747.600	473.000	745.400	745.400	564.000
BT	744.600	744.600	581.000	745.000	745.000	625.000	746.000	746.000	666.000	746.800
BT	746.800	733.000	749.000	749.000	805.000	750.800	750.800	813.000	751.200	739.800
BT	815.000	751.300	739.400	825.000	751.700	737.300	835.000	752.000	733.700	840.000
BT	752.200	731.900	850.000	752.600	729.900	860.000	753.000	730.000	870.000	753.400
BT	732.000	880.000	753.300	753.300	898.000	754.200	754.200	933.000	755.300	755.300
BT	970.000	757.100	757.100	1005.000	758.900	758.900	1049.000	761.500	761.500	1094.000
BT	763.300	763.300	1156.000	764.900	764.900	.000	.000	.000	.000	.000

MAUMEE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-09

K1	25.380	.000	.000	.000	57.000	57.000	57.000	.000	.000	.000
X2	.000	.000	.000	749.000	745.000	.000	1.000	.000	.000	.000
NH	4.000	.200	152.900	.090	242.500	.069	277.500	.085	345.600	.000
K1	25.390	15.000	242.500	277.500	10.000	10.000	10.000	.000	.000	.000
GR	765.100	.000	745.800	40.000	747.900	94.900	749.800	152.900	732.800	242.500
GR	730.200	247.500	728.800	252.500	728.600	257.500	729.600	262.500	730.500	267.500
GR	731.300	272.500	731.300	277.400	732.800	277.500	744.400	280.200	756.400	345.600

CROSS SECTION T UPSTREAM OF MAUMEE STREET

X1	25.440	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
NH	5.000	.085	467.800	.200	752.500	.085	773.100	.069	817.100	.070
NH	1029.900	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION U DOWNSTREAM OF CHURCH STREET

X1	25.730	25.000	773.100	817.100	150.000	360.000	290.000	.000	.000	.000
X3	.000	.000	.000	600.000	.000	850.000	.000	.000	.000	.000
GR	756.000	.000	745.800	53.500	746.200	144.500	746.200	272.300	744.800	363.300
GR	743.200	420.000	739.100	467.800	743.700	612.500	743.000	692.100	743.000	752.500
GR	732.900	773.100	731.600	778.100	731.700	783.100	731.800	788.100	731.700	793.100
GR	731.900	798.100	732.100	803.100	731.900	808.100	732.300	813.100	732.000	817.000
GR	732.900	817.100	741.100	830.700	751.600	902.200	754.000	968.900	756.000	1029.900
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CHURCH STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-10

X1	25.810	21.000	625.000	688.000	80.000	80.000	80.000	.000	.000	.000
GR	756.000	.000	753.600	65.000	751.400	185.000	749.400	280.000	747.600	362.000
GR	745.400	473.000	744.600	564.000	747.100	625.000	736.600	625.000	734.400	635.000
GR	733.400	645.000	733.700	655.000	733.500	665.000	732.500	675.000	732.500	685.000
GR	733.700	688.000	747.300	688.000	747.500	732.000	750.600	837.000	753.000	893.000
GR	756.000	957.000	.000	.000	.000	.000	.000	.000	.000	.000
SB	.000	1.500	2.900	.000	40.000	.000	510.000	1.640	.000	.000

CHURCH STREET BRIDGE -ADJACENT UPSTREAM SECTION S-10

X1	25.860	.000	.000	.000	52.000	52.000	52.000	.000	.000	.000
X2	.000	.000	1.000	741.800	744.600	.000	.000	.000	.000	.000
BT	21.000	.000	756.000	756.000	65.000	753.600	753.600	185.000	751.400	751.400
BT	280.000	749.400	749.400	362.000	747.600	747.600	473.000	745.400	745.400	564.000
BT	744.600	744.600	625.000	747.100	474.100	625.000	747.100	741.600	635.000	747.100
BT	741.600	645.000	747.200	741.700	655.000	747.200	741.700	665.000	747.200	741.700
BT	675.000	747.300	741.800	685.000	747.300	741.800	688.000	747.300	741.800	688.000
BT	747.300	747.300	732.000	747.500	747.500	837.000	750.600	750.600	693.000	753.000
BT	753.000	957.000	756.000	756.000	.000	.000	.000	.000	.000	.000
NH	5.000	.150	485.200	.085	523.300	.078	551.300	.075	594.600	.085
NH	842.100	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION V UPSTREAM OF CHURCH STREET

X1	25.890	20.000	523.300	551.300	80.000	30.000	30.000	.000	.000	.000
X3	.000	.000	.000	335.000	.000	595.000	.000	.000	.000	.000
GR	756.000	.000	754.300	67.700	752.800	167.800	751.200	263.300	748.000	310.600
GR	746.800	367.700	745.800	441.900	745.800	485.200	733.700	523.300	732.600	528.300
GR	732.600	533.300	732.400	538.300	732.100	543.300	732.200	548.300	733.700	551.300
GR	743.900	594.600	743.100	660.100	746.400	714.700	751.500	783.000	756.000	842.100
NH	5.000	.150	415.800	.090	438.700	.078	470.700	.090	475.100	.200
NH	1021.500	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION W DOWNSTREAM OF COLLEGE AVE

14112 G.B.

X1	26.600	23.000	438.700	470.700	700.000	300.000	710.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	660.000	.000	.000	.000	.000
GR	756.000	.000	746.100	84.600	747.300	172.400	747.300	192.500	747.200	350.200
GR	747.200	415.800	735.800	438.700	735.800	438.700	734.500	443.700	733.400	448.700
GR	732.900	453.700	733.700	458.700	734.000	463.700	734.700	468.700	735.800	470.700
GR	745.800	475.100	745.800	528.400	747.200	576.900	747.200	675.900	747.200	788.000
GR	749.500	874.700	749.500	953.500	755.900	1021.500	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

COLLEGE AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-11

X1	26.680	25.000	540.000	600.000	80.000	80.000	80.000	.940	.000	.000
GR	756.000	.000	751.900	90.000	748.500	175.000	747.500	311.000	747.200	380.000
GR	747.200	448.000	747.800	475.000	748.100	509.000	748.500	540.000	734.500	540.000
GR	734.600	550.000	734.600	560.000	735.000	570.000	735.300	580.000	735.200	585.000
GR	737.700	590.000	741.900	590.000	741.900	598.000	743.900	600.000	748.500	600.000
GR	748.400	614.000	746.900	662.000	746.500	713.000	748.000	803.000	752.000	978.000
SB	.000	1.500	2.900	.000	45.000	.000	490.000	.280	.000	.000

COLLEGE AVE BRIDGE -ADJACENT UPSTREAM SECTION S-11

X1	26.730	.000	.000	.000	56.000	56.000	56.000	.000	.000	.000
X2	.000	.000	1.000	744.800	746.500	.800	.000	.000	.940	.000
BT	24.000	.000	756.000	756.000	90.000	751.900	751.900	175.000	748.500	748.500
BT	311.000	747.500	747.500	380.000	747.200	747.200	448.000	747.200	747.200	475.000
BT	747.800	747.800	509.000	748.100	748.100	540.000	748.500	748.500	540.000	749.500
BT	744.800	550.000	749.500	744.800	560.000	749.500	744.800	570.000	749.500	744.800
BT	580.000	749.500	744.800	585.000	749.500	744.800	590.000	749.500	744.800	598.000
BT	749.500	744.800	600.000	749.500	744.800	600.000	748.500	748.500	614.000	748.400
BT	748.400	662.000	746.900	746.900	713.000	746.500	746.500	803.000	748.000	748.000
BT	978.000	752.000	752.000	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.200	503.500	.085	516.900	.078	566.900	.085	651.800	.150
NH	1320.700	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION X UPSTREAM OF COLLEGE AVE

X1	26.800	29.000	516.900	566.900	50.000	200.000	70.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	800.000	.000	.000	.000	.000
GR	756.000	.000	749.500	45.300	747.200	109.800	746.300	179.300	745.800	276.800
GR	745.900	316.300	745.900	388.700	745.100	451.000	745.100	503.500	736.200	516.900
GR	734.900	521.900	734.700	526.900	734.800	531.900	734.600	536.900	737.700	541.900
GR	734.400	546.900	734.400	551.900	734.500	556.900	735.000	561.900	736.200	566.900
GR	745.200	621.100	746.600	651.800	744.200	750.500	744.100	871.200	744.100	985.800
GR	745.800	1119.100	744.800	1176.900	744.500	1270.800	756.000	1320.700	.000	.000
NH	5.000	.200	423.000	.080	465.800	.069	501.800	.080	541.000	.200
NH	1313.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION Y DOWNSTREAM OF MICHIGAN AVE

X1	27.390	20.000	465.800	501.800	400.000	500.000	590.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	.000	540.000	.000	.000	.000
GR	755.900	.000	747.000	107.600	748.500	201.500	748.500	293.100	745.800	423.000
GR	736.100	465.800	734.800	470.800	734.300	475.800	734.100	480.800	734.000	485.800
GR	733.700	490.800	733.800	495.800	736.100	501.800	746.000	527.900	748.600	541.000
GR	747.500	682.900	748.900	1087.600	747.500	1203.600	752.000	1289.900	756.200	1313.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

MICHIGAN AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-12

X1	27.460	21.000	520.000	590.000	70.000	70.000	70.000	.900	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	744.800	745.700	.000
GR	756.000	.000	752.000	50.000	747.100	300.000	746.700	360.000	747.900	411.000
GR	749.200	473.000	749.600	520.000	736.200	520.000	735.100	530.000	734.900	540.000
GR	733.900	550.000	732.900	560.000	734.500	570.000	735.800	580.000	736.100	590.000
GR	750.500	590.000	751.200	613.000	752.400	666.000	754.000	708.000	754.900	756.000
GR	760.700	840.000	.000	.000	.000	.000	.000	.000	.000	.000
SB	.000	1.500	2.900	.000	18.000	.000	666.000	2.650	.000	.000

MICHIGAN AVE BRIDGE -ADJACENT UPSTREAM SECTION S-12

BRIDGE SKEWED 26 DEGREES; SKEW FACTOR OF 0.90 APPLIED

X1	27.510	.000	.000	.000	55.000	55.000	55.000	.000	.000	.000
X2	.000	.000	1.000	745.700	746.700	.000	.000	.000	.900	.000
X3	10.000	.000	.000	.000	.000	.000	.000	749.600	750.500	.000
BT	21.000	.000	756.000	756.000	50.000	752.000	752.000	300.000	747.100	747.100
BT	360.000	746.700	746.700	411.000	747.900	747.900	473.000	749.200	749.200	520.000
BT	749.600	749.600	520.000	749.600	744.800	530.000	749.700	744.900	540.000	749.800
BT	745.000	550.000	750.000	745.200	560.000	750.100	745.300	570.000	750.200	745.400
BT	580.000	750.300	745.500	590.000	750.500	745.700	590.000	750.500	750.500	613.000
BT	751.200	751.200	666.000	752.400	752.400	708.000	754.000	754.000	756.000	754.900
BT	754.900	840.000	760.700	760.700	.000	.000	.000	.000	.000	.000
NH	4.000	.120	245.300	.075	363.000	.069	408.000	.075	486.800	.000

X1	27.560	20.000	363.000	408.000	50.000	50.000	50.000	.000	-.500	.000
GR	756.100	.000	751.200	42.200	749.600	110.700	748.000	179.300	748.200	245.300
GR	743.100	285.500	740.100	350.200	736.200	363.000	735.200	368.000	734.900	373.000
GR	734.200	378.000	734.100	383.000	733.800	388.000	733.500	393.000	734.200	398.000
GR	735.100	403.000	736.200	408.000	746.100	419.400	751.000	445.100	756.000	486.800

CROSS SECTION Z UPSTREAM OF MICHIGAN AVE

X1	27.710	.000	.000	.000	100.000	250.000	150.000	.000	.500	.000

X1	27.970	.000	.000	.000	260.000	260.000	260.000	.000	.600	.000
X3	.000	.000	.000	330.000	.000	.000	.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-13

X1	28.020	18.000	1000.000	1163.000	310.000	310.000	310.000	.420	.000	.000
X3	.000	.000	.000	.000	.000	1148.000	.000	.000	.000	.000
GR	748.600	1000.000	738.700	1000.000	736.500	1013.000	736.400	1023.000	736.100	1033.000
GR	735.400	1043.000	735.100	1053.000	735.000	1063.000	734.600	1073.000	734.500	1083.000
GR	734.700	1093.000	734.300	1103.000	735.100	1113.000	734.900	1123.000	735.900	1133.000
GR	736.500	1139.000	738.500	1163.000	749.000	1163.000	.000	.000	.000	.000
SB	.950	1.850	2.600	170.000	36.000	6.500	525.000	1.100	.000	.000

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-13

14112 G.B.

BRIDGE SKEWED 65 DEGREES; SKEW FACTOR OF 0.42 APPLIED

X1	28.040	.000	.000	.000	14.000	14.000	14.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	1148.000	.000	.000	.000	.000
X2	.000	.000	1.000	746.400	749.000	.000	.000	.000	.000	.000
NH	3.000	.085	48.800	.069	94.400	.085	338.000	.000	.000	.000
X1	28.090	14.000	48.800	94.400	50.000	50.000	50.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	200.000	.000	.000	.000	.000
GR	756.000	.000	752.100	15.300	735.700	48.800	734.400	58.000	734.100	68.000
GR	733.500	78.000	734.000	88.000	735.700	94.400	748.200	104.200	746.400	166.200
GR	748.500	208.000	750.600	249.000	752.600	295.000	755.900	338.000	.000	.000

CROSS SECTION ZZ UPSTREAM OF DT&I RR

X1	28.230	.000	.000	.000	200.000	30.000	140.000	.000	.000	.000
NH	4.000	.085	52.300	.069	93.300	.085	129.000	.150	458.500	.000

CROSS SECTION AA DOWNSTREAM OF MERRICK STREET

X1	28.570	15.000	52.300	93.300	370.000	230.000	340.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	350.000	.000	.000	.000	.000
GR	756.000	.000	752.900	22.500	736.200	52.300	733.500	57.300	732.800	67.300
GR	732.600	72.300	732.500	77.300	732.400	82.300	733.500	87.300	736.200	93.300
GR	747.700	129.000	747.500	214.200	748.800	302.300	749.500	359.800	756.800	458.500
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

MERRICK STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-14

X1	28.610	21.000	370.000	435.000	40.000	40.000	40.000	.880	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	749.000	747.500	.000
GR	768.600	.000	765.300	70.000	759.400	210.000	758.500	246.000	758.900	268.000
GR	753.100	335.000	750.800	370.000	739.700	370.000	736.700	385.000	736.300	395.000
GR	736.000	407.000	735.800	418.000	736.800	427.000	737.000	435.000	749.300	435.000
GR	748.500	527.000	748.800	630.000	751.900	727.000	753.400	808.000	755.300	885.000
GR	755.700	906.000	.000	.000	34.000	34.000	34.000	.000	.000	.000
SB	.000	1.500	2.800	.000	35.200	.000	660.000	1.120	.000	.000

MERRICK STREET BRIDGE -ADJACENT UPSTREAM SECTION S-14

BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED

X1	28.640	.000	.000	.000	30.000	30.000	30.000	.000	.000	.000
X2	.000	.000	1.000	749.000	749.100	.000	.000	.000	.880	.000
X3	10.000	.000	.000	.000	.000	.000	.000	750.800	749.300	.000
BT	21.000	.000	768.600	768.600	70.000	765.300	765.300	210.000	759.400	759.400
BT	246.000	758.500	758.500	268.000	758.900	758.900	335.000	753.100	753.100	370.000
BT	750.800	750.800	370.000	750.800	749.000	385.000	750.500	748.700	395.000	750.200
BT	748.400	407.000	750.000	748.200	418.000	749.800	748.000	427.000	749.500	747.700
BT	435.000	749.300	747.500	435.000	749.300	749.300	527.000	748.500	748.500	630.000
BT	748.800	748.800	727.000	751.900	751.900	808.000	753.400	753.400	885.000	755.300
BT	755.300	906.000	755.700	755.700	.000	.000	.000	.000	.000	.000
NH	5.000	.120	90.500	.085	110.100	.052	156.100	.085	177.600	.150
NH	571.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AB UPSTREAM OF MERRICK STREET

X1	28.690	18.000	110.100	156.100	50.000	50.000	50.000	.000	.000	.000
GR	762.500	.000	753.100	38.700	744.700	90.500	736.300	110.100	735.400	119.100
GR	734.700	123.100	733.300	130.100	733.900	135.100	734.400	140.100	733.900	145.100
GR	733.700	150.100	736.300	156.100	746.300	177.600	748.800	243.300	748.900	359.200
GR	750.500	443.600	753.300	526.300	756.100	571.800	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
NH	6.000	.070	194.800	.085	239.600	.052	268.600	.085	287.600	.075
NH	488.000	.150	777.700	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	45.000	460.000	.000	.000

CROSS SECTION AC

X1	29.270	18.000	239.600	268.600	550.000	270.000	580.000	.000	.000	.000
GR	760.000	.000	744.700	50.300	743.200	124.600	741.900	194.800	738.500	232.300
GR	735.600	239.600	734.800	241.600	735.000	246.600	734.800	251.600	734.800	256.600
GR	735.000	261.600	735.600	268.600	743.800	287.600	745.900	354.300	747.900	488.000
GR	758.600	606.100	758.600	695.100	758.600	777.700	.000	.000	.000	.000
NH	4.000	.055	647.600	.085	826.000	.052	857.000	.085	1007.500	.000
ET	.000	.000	.000	.000	.000	7.100	140.000	880.000	.000	.000

CROSS SECTION AD

X1	30.290	19.000	826.000	857.000	950.000	1050.000	1020.000	.000	.000	.000
GR	760.000	.000	747.900	75.500	749.400	197.500	747.200	280.000	745.500	404.100
GR	745.500	534.500	741.300	647.600	742.400	740.700	740.200	815.000	737.200	826.000
GR	734.800	831.000	732.800	836.000	732.800	841.000	733.300	846.000	734.400	851.000
GR	737.200	857.000	745.600	881.800	755.000	961.900	759.900	1007.500	.000	.000
NH	4.000	.085	367.800	.052	400.800	.085	422.500	.150	521.300	.000
ET	.000	.000	.000	.000	.000	7.100	360.000	415.000	.000	.000

X1	31.150	15.000	367.800	400.800	820.000	870.000	860.000	.000	.000	.000
GR	760.000	.000	759.500	87.800	756.700	194.800	753.300	288.200	749.900	345.200
GR	749.900	359.400	738.100	367.800	737.200	370.800	737.000	380.800	736.200	385.800
GR	736.200	390.800	738.100	400.800	752.800	422.500	758.200	489.200	759.900	521.300
NC	.080	.080	.045	.300	.500	.000	.000	.000	.000	.000

X1	31.200	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000

NYC RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-15A

X1	31.230	16.000	3.000	60.000	900.000	950.000	940.000	.000	.000	.000
X2	.000	.000	.000	759.000	767.000	.000	.000	.000	.000	.000
GR	767.000	3.000	738.300	3.000	738.200	5.000	737.900	10.000	737.500	16.000
GR	737.300	22.000	737.600	27.000	737.700	29.000	737.400	34.000	737.200	36.000
GR	736.900	41.000	737.400	47.000	737.900	53.000	738.200	58.000	738.500	60.000
GR	767.000	60.000	.000	.000	.000	.000	.000	.000	.000	.000
BT	18.000	3.000	767.000	767.000	3.000	767.000	746.000	5.000	767.000	753.100
BT	10.000	767.000	757.700	16.000	767.000	759.000	22.000	767.000	757.700	27.000
BT	767.000	753.100	29.000	767.000	746.000	29.000	767.000	737.700	34.000	767.000
BT	737.400	34.000	767.000	745.900	36.000	767.000	753.000	41.000	767.000	757.600
BT	47.000	767.000	758.900	53.000	767.000	737.900	58.000	767.000	753.000	60.000

BT	767.000	745.900	60.000	767.000	767.000	.000	.000	.000	.000	.000

NYC RR BRIDGE -ADJACENT UPSTREAM SECTION S-15A

X1	31.260	.000	.000	.000	27.000	27.000	27.000	.000	.000	.000
X2	.000	.000	.000	759.000	767.000	.000	1.000	.000	.000	.000
NH	4.000	.085	367.800	.052	400.800	.085	422.500	.150	521.300	.000
X1	31.280	15.000	367.800	400.800	10.000	20.000	20.000	.000	.000	.000
GR	760.000	.000	759.500	87.800	756.700	194.800	753.300	288.200	749.900	345.200
GR	749.900	359.400	738.100	367.800	737.200	370.800	737.000	380.800	736.200	385.800
GR	736.200	390.800	738.100	400.800	752.800	422.500	758.200	489.200	759.900	521.300

CROSS SECTION AE UPSTREAM OF NYC RR

X1	31.300	.000	.000	.000	20.000	20.000	20.000	.000	.000	.000
NC	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

BEECHER STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-15

X1	31.320	18.000	420.000	472.000	20.000	20.000	20.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	752.400	754.300	.000
GR	760.000	.000	759.900	41.000	758.300	84.000	757.500	132.000	756.000	184.000
GR	755.200	245.000	754.600	330.000	756.000	370.000	756.500	420.000	738.500	420.000
GR	738.400	430.000	737.600	440.000	737.400	450.000	737.900	460.000	737.900	472.000
GR	758.500	472.000	759.300	513.000	759.900	526.000	.000	.000	.000	.000
SB	.000	1.500	2.800	.000	52.000	.000	780.000	.000	.000	.000

BEECHER STREET BRIDGE -ADJACENT UPSTREAM SECTION S-15

X1	31.380	.000	.000	.000	51.000	51.000	51.000	.000	.000	.000
X2	.000	.000	1.000	752.400	754.600	.000	.000	.000	.000	.000
BT	18.000	.000	760.000	760.000	41.000	759.900	759.900	84.000	758.300	758.300
BT	132.000	757.500	757.500	184.000	756.000	756.000	245.000	755.200	755.200	330.000
BT	754.600	754.600	370.000	756.000	756.000	420.000	756.500	756.500	420.000	756.500
BT	752.400	430.000	756.900	752.800	440.000	757.300	753.200	450.000	757.700	753.600
BT	460.000	758.100	754.000	472.000	758.500	754.300	472.000	758.500	758.500	513.000
BT	759.300	759.300	526.000	759.900	759.900	.000	.000	.000	.000	.000
NH	4.000	.120	439.900	.090	469.300	.063	497.300	.085	616.400	.000

CROSS SECTION AF UPSTREAM OF BEECHER STREET

X1	31.430	18.000	469.300	497.300	50.000	50.000	50.000	.000	.000	.000
GR	760.000	.000	752.800	80.900	756.600	238.400	755.300	317.100	774.900	323.500
GR	776.000	404.700	754.800	417.800	754.600	439.900	738.200	469.300	736.500	474.300
GR	735.100	479.300	734.700	484.300	734.700	489.300	736.300	494.300	738.200	497.300
GR	749.700	526.400	757.400	579.000	760.000	616.400	.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
NH	4.000	.085	75.800	.095	94.900	.063	134.900	.090	455.100	.000
ET	.000	.000	.000	.000	.000	7.100	80.000	350.000	.000	.000

CROSS SECTION AG

14112 G.B.

X1	31.980	14.000	94.900	134.900	550.000	550.000	550.000	.000	.000	.000
GR	760.000	.000	753.700	53.100	751.000	75.800	738.000	94.900	735.900	98.900
GR	734.600	103.900	735.300	108.900	736.300	113.900	736.900	123.900	737.100	128.900
GR	738.000	134.900	744.800	214.000	747.800	342.200	759.900	455.100	.000	.000
NH	3.000	.095	84.000	.063	115.000	.100	593.400	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	40.000	535.000	.000	.000

CROSS SECTION AH

X1	32.780	15.000	84.000	115.000	700.000	650.000	800.000	.000	.000	.000
GR	760.000	.000	745.000	44.500	745.000	66.600	739.200	84.000	737.700	89.000
GR	737.000	94.000	738.000	104.000	738.500	109.000	739.200	115.000	742.000	131.200
GR	743.100	251.300	744.200	440.300	747.300	532.500	754.900	563.400	760.000	593.400
NH	4.000	.080	227.700	.100	558.900	.063	603.900	.100	648.000	.000
ET	.000	.000	.000	.000	.000	7.100	270.000	615.000	.000	.000

CROSS SECTION AI

X1	33.600	18.000	558.900	603.900	770.000	680.000	820.000	.000	.000	.000
GR	760.000	.000	752.700	103.300	752.100	227.700	744.500	332.100	740.900	438.200
GR	741.500	530.500	741.300	551.600	738.700	558.900	738.100	563.900	738.000	573.900
GR	737.400	578.900	737.700	583.900	738.200	593.900	738.200	598.900	738.700	603.900
GR	743.300	605.100	752.900	630.600	759.900	648.000	.000	.000	.000	.000
NH	3.000	.110	797.700	.063	837.700	.110	950.700	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	130.000	850.000	.000	.000

CROSS SECTION AJ

X1	34.150	20.000	797.700	837.700	520.000	580.000	550.000	.000	.000	.000
GR	760.000	.000	752.300	55.600	748.200	154.900	745.300	237.100	744.400	375.400
GR	743.200	504.500	743.200	638.100	742.800	722.400	742.900	787.600	739.100	797.700
GR	738.100	802.700	738.200	807.700	737.400	812.700	737.000	817.700	737.300	827.700
GR	738.500	834.700	739.100	837.700	748.000	848.600	756.900	898.300	760.000	950.700
NH	3.000	.110	283.700	.063	320.700	.110	912.000	.000	.000	.000
ET	.000	.000	.000	.000	.000	7.100	60.000	680.000	.000	.000

CROSS SECTION AK

X1	35.190	14.000	283.700	320.700	940.000	880.000	1040.000	.000	.000	.000
GR	764.000	.000	746.500	65.400	743.800	161.000	743.800	252.900	739.900	283.700
GR	736.900	288.700	738.200	303.700	738.000	313.700	739.900	320.700	744.500	376.900
GR	745.900	494.100	746.300	647.700	756.100	783.400	764.000	912.000	.000	.000
NH	4.000	.090	208.800	.110	513.900	.063	564.900	.110	824.000	.000

CROSS SECTION AL DOWNSTREAM OF US-223

X1	36.270	19.000	513.900	564.900	940.000	1100.000	1080.000	.000	.000	.000
X3	.000	.000	.000	440.000	.000	640.000	.000	.000	.000	.000
GR	764.000	.000	757.000	44.100	752.600	89.700	764.700	157.800	763.300	208.800
GR	745.700	307.900	746.300	410.900	746.100	483.800	741.400	513.900	739.600	518.900
GR	737.600	533.900	737.100	543.900	737.600	553.900	739.400	558.900	741.400	564.900
GR	746.000	608.300	747.600	689.100	750.100	770.300	764.000	824.000	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000

14112 G.R.

X1	36.320	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
X3	.000	.000	.000	460.000	.000	620.000	.000	.000	.000	.000

US-223 BRIDGE -ADJACENT DOWNSTREAM SECTION S-16

X1	36.390	28.000	970.000	1113.000	70.000	70.000	70.000	.000	.000	.000
X2	.000	.000	.000	759.500	763.000	.000	.000	.000	.000	.000
X3	10.000	.000	.000	.000	.000	.000	.000	.000	.000	.000
GR	769.000	.000	768.500	57.000	768.600	130.000	768.000	210.000	766.600	278.000
GR	766.300	351.000	765.500	454.000	765.200	529.000	764.500	593.000	764.100	687.000
GR	763.300	795.000	763.000	911.000	763.000	970.000	755.500	970.000	740.300	1010.000
GR	738.800	1020.000	737.300	1030.000	738.200	1050.000	741.100	1060.000	741.900	1070.000
GR	755.600	1113.000	763.300	1113.000	763.400	1205.000	764.400	1360.000	765.000	1421.000
GR	766.700	1543.000	767.600	1628.000	768.000	1669.000	.000	.000	.000	.000
BT	28.000	.000	769.000	769.000	57.000	768.500	768.500	130.000	768.600	768.600
BT	210.000	768.000	768.000	278.000	766.600	766.600	351.000	766.300	766.300	454.000
BT	765.500	765.500	529.000	765.200	765.200	593.000	764.500	764.500	687.000	764.100
BT	764.100	795.000	763.300	763.300	911.000	763.000	763.000	970.000	763.000	763.000
BT	970.000	763.000	759.200	1010.000	763.100	759.300	1020.000	763.200	759.400	1030.000
BT	763.200	759.400	1050.000	763.200	759.400	1060.000	763.200	759.400	1070.000	763.300
BT	759.500	1113.000	763.300	759.500	1113.000	763.300	763.300	1205.000	763.400	763.400
BT	1360.000	764.400	764.400	1421.000	765.000	765.000	1543.000	766.700	766.700	1628.000
BT	767.600	767.600	1669.000	768.000	768.000	.000	.000	.000	.000	.000

US-223 BRIDGE -ADJACENT UPSTREAM SECTION S-16

X1	36.440	.000	.000	.000	47.000	47.000	47.000	.000	.000	.000
X2	.000	.000	.000	759.500	763.000	.000	1.000	.000	.000	.000
NH	4.000	.100	459.700	.120	523.500	.063	574.500	.110	1017.900	.000

X1	36.500	18.000	523.500	574.500	60.000	60.000	60.000	.000	.000	.000
X3	.000	.000	.000	430.000	.000	670.000	.000	.000	.000	.000
GR	764.000	.000	756.100	51.400	764.000	165.000	765.100	260.400	765.100	339.300
GR	759.200	459.700	741.400	523.500	738.800	528.500	737.100	543.500	737.600	553.500
GR	738.600	563.500	741.400	574.500	746.700	602.700	747.500	686.700	750.500	823.600
GR	758.500	942.100	761.400	970.600	763.900	1017.900	.000	.000	.000	.000

CROSS SECTION AM UPSTREAM OF US-223

X1	36.520	.000	.000	.000	20.000	20.000	20.000	.000	.000	.000
X3	.000	.000	.000	410.000	.000	690.000	.000	.000	.000	.000
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

*PROF 1

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 12.130

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
	CROSS SECTION A		UPSTREAM OF HOWELL HWY						
12.13	15.20	723.60	.00	723.60	723.90	.30	.00	.00	712.00
5230.	842.	3785.	603.	386.	754.	312.	0.	0.	712.00
.00	2.18	5.02	1.93	.080	.063	.090	.000	708.40	115.15
.001351	0.	0.	0.	0	0	0	.00	173.40	288.55

1490 NH CARD USED
*SECNO 12.650

3470 ENCROACHMENT STATIONS= .0 230.0 TYPE= 1 TARGET= 229.999

CROSS SECTION AAA									
12.65	14.91	724.51	.00	.00	724.76	.25	.85	.01	713.00
5230.	647.	1525.	3059.	197.	267.	1025.	18.	2.	713.00
.04	3.28	5.72	2.98	.063	.100	.100	.045	709.60	77.74
.002013	480.	520.	540.	2	0	0	.00	152.26	230.00

490 NH CARD USED
*SECNO 13.650

CROSS SECTION B									
13.65	15.58	726.08	.00	.00	726.28	.20	1.52	.01	711.20
5230.	1820.	2247.	1163.	1189.	459.	413.	60.	9.	711.20
.13	1.53	4.89	2.81	.087	.063	.085	.044	710.50	114.22
.001135	1070.	1000.	1020.	2	0	0	.00	464.14	578.36

490 NH CARD USED
*SECNO 14.590

CROSS SECTION C									
14.59	15.95	727.35	.00	.00	728.04	.69	1.62	.15	713.50
5230.	569.	3998.	663.	185.	536.	269.	93.	16.	715.00
.17	3.07	7.46	2.47	.100	.063	.100	.044	711.40	13.41
.002876	950.	940.	950.	2	0	0	.00	112.22	125.63

490 NH CARD USED
*SECNO 15.950

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

14112 G.A.

TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 450.0 1079.1 TYPE= 1 TARGET= -450.000

CROSS SECTION D

15.95	13.79	728.99	.00	.00	729.03	.04	.92	.07	716.20
5230.	1018.	1779.	2432.	1027.	782.	2384.	173.	27.	716.40
.43	.99	2.28	1.02	.092	.063	.086	.045	715.20	450.00
.000297	1200.	1360.	1400.	3	0	0	.00	605.95	1055.95

1490 NH CARD USED
*SECNO 17.150

CROSS SECTION E

17.15	12.70	729.40	.00	.00	729.44	.05	.42	.00	717.90
5230.	157.	1735.	3338.	155.	686.	2891.	282.	43.	717.90
.63	1.01	2.53	1.15	.090	.063	.086	.045	716.70	46.55
.000409	1220.	1200.	1200.	2	0	0	.00	595.07	641.63

1490 NH CARD USED
*SECNO 18.130

CROSS SECTION F

18.13	10.61	729.71	.00	.00	729.73	.02	.28	.00	720.20
5230.	425.	346.	4459.	974.	301.	3848.	391.	67.	719.90
.90	.44	1.15	1.16	.088	.085	.053	.044	719.10	74.31
.000180	950.	980.	1100.	2	0	0	.00	1327.57	1401.88

1490 NH CARD USED
*SECNO 19.400

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION G DOWNSTREAM OF MAIN STREET

19.40	9.44	729.34	.00	.00	730.87	1.53	.69	.45	723.50
5230.	71.	5061.	99.	28.	502.	38.	478.	88.	723.50
.94	2.48	10.08	2.59	.085	.045	.085	.044	719.90	787.07
.005933	1100.	1270.	1400.	3	0	0	.00	85.78	872.85

CCHV= .300 CEHV= .500
*SECNO 19.450

19.45	9.98	729.88	.00	.00	731.19	1.31	.26	.07	723.50
5230.	85.	5027.	119.	34.	537.	46.	478.	88.	723.50
.94	2.49	9.36	2.59	.080	.045	.080	.044	719.90	786.14
.004676	50.	50.	50.	2	0	0	.00	87.95	874.10

*SECNO 19.470

3301 HV CHANGED MORE THAN HVINS

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	OLOB	OCH	OROB	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= 0 MIN ELTRD= 739.10 MAX ELLC= 735.10

MAIN STREET --M-52-- BRIDGE -ADJACENT DOWNSTREAM SECTION S-03

19.47	11.75	730.85	.00	.00	731.47	.62	.07	.21	739.60
5230.	0.	5230.	0.	0.	827.	0.	479.	88.	739.10
.94	.00	6.32	.00	.080	.045	.080	.044	719.10	556.58
.002623	20.	20.	20.	3	0	0	.00	110.82	667.40

*SECNO 19.510

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 739.10 MAX ELLC= 735.10

MAIN STREET --M-52-- BRIDGE -ADJACENT UPSTREAM SECTION S-03

19.51	11.85	730.95	.00	.00	731.55	.60	.08	.01	739.60
5230.	0.	5230.	0.	0.	840.	0.	479.	88.	739.10
.94	.00	6.23	.00	.080	.045	.080	.044	719.10	556.31
.002518	30.	30.	30.	0	0	0	.00	111.50	667.81

1490 NH CARD USED

*SECNO 19.530

3301 HV CHANGED MORE THAN HVINS

19.53	13.24	730.64	.00	.00	732.00	1.36	.07	.38	723.50
5230.	177.	4873.	180.	88.	503.	89.	480.	88.	723.50
.95	2.02	9.68	2.02	.120	.052	.120	.044	717.40	306.90
.005123	20.	20.	20.	2	0	0	.00	96.63	403.52

*SECNO 19.560

CROSS SECTION H UPSTREAM OF MAIN STREET

19.56	13.48	730.88	.00	.00	732.17	1.29	.15	.02	723.50
5230.	186.	4855.	189.	94.	515.	95.	480.	88.	723.50
.95	1.98	9.44	1.98	.120	.052	.120	.044	717.40	306.06
.004721	30.	30.	30.	2	0	0	.00	98.30	404.37

CCHV= .100 CEHV= .300

1490 NH CARD USED

*SECNO 20.580

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 340.0 460.0 TYPE= 1 TARGET= 120.000

CROSS SECTION I DOWNSTREAM OF BENT OAK AVE

20.58	11.52	734.92	.00	.00	735.38	.46	3.13	.08	724.60
3650.	270.	2622.	758.	160.	413.	394.	498.	90.	724.60
1.00	1.69	6.34	1.93	.120	.052	.120	.044	723.40	340.00
.001983	1050.	1020.	770.	2	0	0	.00	120.00	460.00

CCHV= .300 CEHV= .500

*SECNO 20.630

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= 355.0 440.0 TYPE= 1 TARGET= 85.000

20.63	11.59	734.99	.00	.00	735.48	.48	.09	.01	724.60
3650.	215.	2650.	786.	99.	416.	300.	499.	90.	724.60
1.00	2.16	6.37	2.62	.080	.045	.080	.044	723.40	355.00
.001482	50.	50.	50.	2	0	0	.00	85.00	440.00

*SECNO 20.660

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 743.10 MAX ELLC= 740.30

BENT OAK AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-04

20.66	13.00	735.10	.00	.00	735.54	.43	.04	.02	744.80
3650.	0.	3650.	0.	0.	692.	0.	500.	90.	744.80
1.00	.00	5.27	.00	.080	.045	.080	.044	722.10	360.00
.001502	30.	30.	30.	2	0	0	.00	65.00	425.00

*SECNO 20.710

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 743.10 MAX ELLC= 740.30

BENT OAK AVE BRIDGE -ADJACENT UPSTREAM SECTION S-04

20.71	13.08	735.18	.00	.00	735.61	.43	.07	.00	744.80
3650.	0.	3650.	0.	0.	696.	0.	501.	91.	744.80
1.01	.00	5.24	.00	.080	.045	.080	.044	722.10	360.00
.001473	46.	46.	46.	0	0	0	.00	65.00	425.00

490 NH CARD USED

*SECNO 20.750

3470 ENCROACHMENT STATIONS= 70.0 205.0 TYPE= 1 TARGET= 135.000

CROSS SECTION J UPSTREAM OF BENT OAK AVE

20.75	13.95	735.25	.00	.00	735.67	.41	.06	.00	724.70
3650.	244.	2943.	463.	144.	517.	312.	501.	91.	724.70
1.01	1.69	5.69	1.48	.100	.052	.120	.044	721.30	83.00
.001386	50.	40.	30.	1	0	0	.00	122.00	205.00

*SECNO 20.800

3470 ENCROACHMENT STATIONS= 40.0 235.0 TYPE= 1 TARGET= 195.000

20.80	14.01	735.31	.00	.00	735.71	.40	.04	.00	724.70
3650.	244.	2918.	488.	146.	519.	347.	502.	91.	724.70
1.01	1.67	5.62	1.41	.100	.052	.119	.044	721.30	82.83
.001342	30.	30.	30.	1	0	0	.00	152.17	235.00

1490 NH CARD USED

*SECNO 21.390

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

CROSS SECTION K

21.39	12.32	736.22	.00	.00	736.40	.19	.63	.06	725.20
3650.	1435.	2008.	208.	982.	444.	166.	519.	93.	725.20
1.06	1.46	4.52	1.25	.101	.052	.103	.044	723.90	138.08
.000917	570.	590.	450.	2	0	0	.00	273.29	411.37

*SECNO 21.960

3470 ENCROACHMENT STATIONS= 275.0 425.0 TYPE= 1 TARGET= 150.000

21.96	13.21	736.61	.00	.00	736.88	.27	.43	.04	724.70
3650.	981.	2381.	288.	525.	477.	206.	531.	95.	724.70
1.09	1.87	4.99	1.40	.110	.052	.101	.045	723.40	275.00
.001014	200.	570.	600.	2	0	0	.00	142.18	417.18

*SECNO 21.990

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-05

21.99	13.56	736.76	.00	.00	736.93	.17	.02	.03	746.20
3650.	0.	3650.	0.	0.	1112.	0.	531.	95.	744.60
1.10	.00	3.28	.00	.080	.045	.080	.045	723.20	1015.06
.000576	30.	30.	30.	2	0	0	.00	127.70	1142.77

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.80	2.60	176.00	56.30	14.80	1822.00	2.40	723.20	723.20

*SECNO 22.010

CLASS A LOW FLOW

3420 BRIDGE W.S.= 736.70 BRIDGE VELOCITY=, 3.66 CALCULATED CHANNEL AREA=, 997.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	736.96	.03	0.	3650.	1822.	1776.	743.10	745.40

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-05

14112 G.B.

BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED

22.01	13.59	736.79	.00	.00	736.96	.17	.03	.00	746.20
3650.	0.	3650.	0.	0.	1116.	0.	532.	95.	744.60
1.10	.00	3.27	.00	.080	.045	.080	.045	723.20	1014.96
.000571	10.	10.	10.	0	0	0	.00	127.87	1142.82

1490 NH CARD USED
*SECNO 22.040

3470 ENCROACHMENT STATIONS= 190.0 370.0 TYPE= 1 TARGET= 180.000

CROSS SECTION L UPSTREAM OF DT&I RR

22.04	13.23	736.73	.00	.00	737.07	.35	.03	.09	725.90
3650.	825.	2182.	642.	423.	371.	331.	532.	95.	725.90
1.10	1.95	5.88	1.94	.096	.058	.108	.045	723.50	190.00
.001893	30.	30.	30.	2	0	0	.00	180.00	370.00

1490 NH CARD USED
*SECNO 22.120

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= 170.0 300.0 TYPE= 1 TARGET= 130.000

22.12	14.51	737.01	.00	.00	737.21	.21	.10	.04	726.20
3650.	712.	2729.	209.	448.	661.	167.	535.	96.	726.20
1.11	1.59	4.13	1.25	.110	.058	.110	.045	722.50	170.00
.000849	80.	80.	80.	2	0	0	.00	130.00	300.00

*SECNO 22.160

3470 ENCROACHMENT STATIONS= 200.0 300.0 TYPE= 1 TARGET= 100.000

22.16	14.50	737.00	.00	.00	737.27	.27	.03	.03	726.20
3650.	409.	2996.	245.	238.	661.	167.	536.	96.	726.20
1.11	1.72	4.53	1.47	.080	.045	.080	.045	722.50	200.00
.000616	40.	40.	40.	2	0	0	.00	100.00	300.00

*SECNO 22.180

GRAND AVE-EXTENDED

22.18	12.50	737.00	.00	.00	737.30	.30	.01	.01	730.20
3650.	2.	3648.	0.	5.	834.	0.	536.	96.	738.30
1.11	.45	4.37	.00	.080	.045	.080	.045	724.50	258.51
.000901	20.	20.	20.	1	0	0	.00	83.49	342.00

*SECNO 22.200

GRAND AVE-EXTENDED

22.20	12.52	737.02	.00	.00	737.32	.30	.02	.00	730.20

3650.	2.	3648.	0.	5.	835.	0.	536.	96.	738.30
j,jj	,45	4.37	,00	,080	,045	,080	,045	724.50	258.51
.000899	20.	20.	20.	0	0	0	.00	83.49	342.00

1490 NH CARD USED
*SECNO 22.220

3470 ENCROACHMENT STATIONS= 160.0 300.0 TYPE= 1 TARGET= 140.000

22.22	14.67	737.17	.00	.00	737.37	.19	.02	.03	726.20
3650.	747.	2693.	210.	494.	670.	171.	537.	96.	726.20
1.11	1.51	4.02	1.23	.110	.058	.110	.045	722.50	160.00
.000793	20.	20.	20.	2	0	0	.00	140.00	300.00

*SECNO 22.260

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= 120.0 300.0 TYPE= 1 TARGET= 180.000

CROSS SECTION M UPSTREAM OF GRAND AVE-EXTENDED

22.26	14.71	737.21	.00	.00	737.40	.19	.03	.00	726.20
3650.	744.	2695.	211.	519.	671.	172.	538.	96.	726.20
1.12	1.44	4.01	1.22	.110	.058	.110	.045	722.50	144.06
.000787	40.	40.	40.	0	0	0	.00	155.94	300.00

1490 NH CARD USED
*SECNO 22.660

CROSS SECTION N

22.66	13.74	738.04	.00	.00	738.53	.49	.98	.15	727.00
3650.	394.	2759.	497.	191.	436.	245.	559.	99.	727.00
1.16	2.06	6.33	2.03	.100	.058	.109	.045	724.30	65.62
.002093	870.	800.	830.	2	0	0	.00	122.14	187.76

1490 NH CARD USED
*SECNO 23.180

CROSS SECTION O DOWNSTREAM OF MAPLE STREET

23.18	14.62	739.12	.00	.00	739.79	.66	1.17	.09	727.60
3650.	339.	3223.	88.	167.	466.	60.	569.	100.	727.60
1.18	2.03	6.92	1.46	.110	.058	.099	.045	724.50	279.17
.002404	550.	520.	500.	2	0	0	.00	149.09	428.26

*SECNO 23.240

MAPLE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-07

23.24	13.55	739.65	.00	.00	739.98	.33	.09	.10	744.40
3650.	0.	3650.	0.	0.	795.	0.	570.	100.	744.40
1.19	.00	4.59	.00	.080	.045	.080	.045	726.10	460.00

.001028	60.	60.	60.	2	0	0	.00	64.00	524.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	58.50	.00	766.00	.00	726.10	726.10

*SECNO 23.280

PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
740.18	739.98	.00	0.	3650.	766.	766.	739.20	744.40

MAPLE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-07

23.28	13.76	739.86	.00	.00	740.18	.32	.20	.00	744.40
3650.	0.	3650.	0.	0.	808.	0.	571.	100.	744.40
1.19	.00	4.51	.00	.080	.045	.080	.045	726.10	460.00
.000978	47.	47.	47.	2	0	0	.00	64.00	524.00

490 NH CARD USED

*SECNO 23.340

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

CROSS SECTION P UPSTREAM OF MAPLE STREET

23.34	14.33	739.83	.00	.00	740.38	.54	.08	.11	727.90
3650.	181.	3002.	467.	102.	464.	237.	572.	100.	727.90
1.19	1.78	6.47	1.97	.110	.058	.110	.045	725.50	248.78
.002079	60.	60.	60.	2	0	0	.00	91.89	340.67

*SECNO 23.610

23.61	13.32	740.42	.00	.00	741.09	.67	.65	.06	729.50
3650.	166.	3055.	428.	86.	429.	199.	577.	101.	729.50
1.20	1.95	7.13	2.16	.110	.058	.110	.045	727.10	250.23
.002809	270.	270.	270.	2	0	0	.00	87.05	337.29

*SECNO 23.640

470 ENCROACHMENT STATIONS= .0 932.5 TYPE= 1 TARGET= 1096.999

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-08

23.64	13.79	741.09	.00	.00	741.27	.18	.03	.15	743.70
3650.	0.	3650.	0.	0.	1066.	0.	577.	101.	744.70
1.21	.00	3.42	.00	.080	.045	.080	.045	727.30	314.50
.000563	30.	30.	30.	2	0	0	.00	101.15	415.65

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	2.10	2.80	.00	45.00	7.80	930.00	1.60	727.30	727.30

*SECNO 23.660

6110 EGLWC OF 741.24 LESS THAN XEG OF 741.27

CLASS A LOW FLOW

3420 BRIDGE W.S.= 741.01 BRIDGE VELOCITY=, 4.50 CALCULATED CHANNEL AREA=, 811.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
.00	741.24	.02	0.	3650.	930.	927.	742.40	742.00

3470 ENCROACHMENT STATIONS= .0 1097.0 TYPE= 1 TARGET= 1096.999

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-08

BRIDGE SKEWED 32 DEGREES; SKEW FACTOR OF 0.85 APPLIED

23.66	13.81	741.11	.00	.00	741.27	.13	.00	.00	743.70	
3650.	0.	3650.	0.	0.	1257.	0.	577.	101.	744.70	
1.21	.00	2.90	.00	.080	.045	.080	.045	727.30	370.00	
.000393	10.	10.	10.	0	0	0	.00	119.00	489.00	

490 NH CARD USED

*SECNO 23.690

3470 ENCROACHMENT STATIONS= 480.0 630.0 TYPE= 1 TARGET= 150.000

23.69	12.51	741.01	.00	.00	741.44	.44	.02	.15	730.40	
3650.	415.	2946.	289.	257.	504.	152.	578.	101.	730.40	
1.21	1.61	5.84	1.91	.095	.058	.110	.045	728.50	480.00	
.001949	30.	30.	30.	2	0	0	.00	149.49	629.49	

*SECNO 23.830

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= 480.0 630.0 TYPE= 1 TARGET= 150.000

CROSS SECTION R UPSTREAM OF DT&I RR

23.83	12.81	741.31	.00	.00	741.71	.40	.26	.01	730.40	
3650.	451.	2904.	295.	282.	517.	160.	581.	102.	730.40	
1.22	1.60	5.62	1.84	.095	.058	.110	.045	728.50	480.00	
.001741	120.	140.	170.	2	0	0	.00	150.00	630.00	

14112 6.8.

1490 NH CARD USED

*SECNO 24.560

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 345.0 812.6 TYPE= 1 TARGET= -345.000

24.56	13.94	742.74	.00	.00	743.40	.66	1.56	.13	732.60
3650.	657.	2795.	199.	406.	377.	98.	594.	104.	732.60
1.25	1.62	7.41	2.03	.084	.058	.110	.045	728.80	345.00
.003060	420.	730.	800.	2	0	0	.00	294.51	645.07

*SECNO 24.590

3301 HV CHANGED MORE THAN HVINS

24.59	14.68	743.48	.00	.00	743.61	.13	.04	.16	732.60
3650.	1897.	1626.	127.	1688.	399.	113.	595.	105.	732.60
1.25	1.12	4.07	1.13	.087	.058	.110	.045	728.80	37.53
.000856	30.	30.	30.	3	0	0	.00	608.95	646.48

*SECNO 24.620

3470 ENCROACHMENT STATIONS= 260.0 816.0 TYPE= 1 TARGET= -260.000

PRIVATE BRIDGE -ADJACENT DOWNSTREAM SECTION S-08A

24.62	14.40	743.50	.00	.00	743.62	.13	.02	.00	740.40
3650.	400.	3224.	26.	645.	1059.	57.	597.	105.	740.80
1.25	.62	3.05	.45	.080	.045	.080	.045	729.10	260.00
.000389	30.	30.	30.	2	0	0	.00	452.44	712.44

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.50	2.90	.00	33.00	3.00	529.00	2.14	729.10	729.10

*SECNO 24.640

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
744.60	743.63	.01	2119.	1533.	529.	507.	739.00	739.10

3470 ENCROACHMENT STATIONS= 260.0 816.0 TYPE= 1 TARGET= -260.000

PRIVATE BRIDGE -ADJACENT UPSTREAM SECTION S-08A

24.64	14.47	743.57	.00	.00	743.69	.12	.07	.00	740.40
3650.	416.	3207.	27.	667.	1065.	60.	597.	105.	740.80
1.26	.62	3.01	.45	.080	.045	.080	.045	729.10	260.00
.000377	10.	10.	10.	2	0	7	.00	453.57	713.57

4112 G.B.

1490 NH CARD USED
*SECNO 24.670

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= 345.0 812.6 TYPE= 1 TARGET= -345.000

CROSS SECTION S

24.67	14.63	743.43	.00	.00	743.88	.45	.02	.16	732.60
3650.	920.	2533.	196.	579.	398.	111.	598.	105.	732.60
1.26	1.59	6.37	1.76	.081	.058	.110	.045	728.80	345.00
.002104	30.	30.	30.	2	0	0	.00	301.38	646.38

*SECNO 24.710

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 812.6 TYPE= 1 TARGET= -300.000

24.71	14.81	743.61	.00	.00	743.98	.37	.08	.02	732.60
3650.	1064.	2396.	190.	720.	403.	115.	599.	106.	732.60
1.26	1.48	5.94	1.65	.082	.058	.110	.045	728.80	300.00
.001800	40.	40.	40.	2	0	0	.00	347.15	660.16

1490 NH CARD USED
*SECNO 24.720

3470 ENCROACHMENT STATIONS= 295.0 839.0 TYPE= 1 TARGET= -295.000

PRIVATE SILL

24.72	11.69	743.99	.00	.00	744.07	.08	.01	.09	742.10
3650.	927.	2723.	0.	951.	1030.	0.	600.	106.	744.50
1.26	.97	2.64	.00	.090	.058	.110	.045	732.30	295.00
.000727	10.	10.	10.	2	0	0	.00	430.88	725.88

1490 NH CARD USED
*SECNO 24.730

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 300.0 812.6 TYPE= 1 TARGET= -300.000

24.73	15.08	743.88	.00	.00	744.20	.32	.01	.12	732.60
3650.	1169.	2293.	188.	802.	412.	124.	600.	106.	732.60
1.26	1.46	5.57	1.52	.081	.058	.110	.045	728.80	300.00
.001540	10.	10.	10.	2	0	0	.00	366.54	676.25

1490 NH CARD USED
*SECNO 25.270

25.27	16.06	744.66	.00	.00	745.07	.40	.82	.04	732.80
3650.	769.	2868.	14.	371.	508.	17.	614.	109.	732.80
1.29	2.07	5.65	.83	.090	.058	.085	.045	728.60	179.98

14112 G.B.

.001503	540.	540.	540.	2	0	0	.00	101.65	281.63

*SECNO 25.320

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
25.32	16.14	744.74	.00	.00	745.14	.40	.07	.00	732.80
3650.	774.	2862.	14.	376.	511.	17.	615.	109.	732.80
1.30	2.06	5.61	.82	.090	.058	.085	.045	728.60	179.58
.001472	50.	50.	50.	0	0	0	.00	102.47	282.04

*SECNO 25.330

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 745.00 MAX ELLC= 749.00

MAUMEE STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-09

25.33	14.84	744.74	.00	.00	745.17	.42	.01	.01	750.80
3650.	0.	3650.	0.	2.	698.	0.	615.	109.	753.30
1.30	.12	5.23	.00	.080	.045	.080	.045	729.90	546.67
.001370	10.	10.	10.	1	0	0	.00	90.39	875.99

*SECNO 25.380

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 745.00 MAX ELLC= 749.00

MAUMEE STREET BRIDGE -ADJACENT UPSTREAM SECTION S-09

25.38	14.93	744.83	.00	.00	745.25	.42	.08	.00	750.80
3650.	1.	3649.	0.	4.	703.	0.	616.	109.	753.30
1.30	.16	5.19	.00	.080	.045	.080	.045	729.90	538.31
.001342	57.	57.	57.	0	0	0	.00	101.96	876.02

490 NH CARD USED

*SECNO 25.390

25.39	16.34	744.94	.00	.00	745.29	.35	.02	.02	732.80
3650.	899.	2735.	16.	388.	518.	18.	616.	109.	732.80
1.30	2.31	5.28	.92	.090	.069	.085	.045	728.60	178.51
.001816	10.	10.	10.	2	0	0	.00	104.64	283.15

*SECNO 25.440

CROSS SECTION T UPSTREAM OF MAUMEE STREET

25.44	16.44	745.04	.00	.00	745.38	.34	.09	.00	732.80

14112 G.B.

3650.	905.	2728.	17.	394.	521.	18.	617.	109.	732.80
1.30	2.30	5.24	.91	.090	.069	.085	.045	728.60	178.05
.001772	50.	50.	50.	1	0	0	.00	105.58	283.63

490 NH CARD USED

*SECNO 25.730

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= 600.0 850.0 TYPE= 1 TARGET= 250.000

CROSS SECTION U DOWNSTREAM OF CHURCH STREET

25.73	13.98	745.58	.00	.00	745.82	.24	.41	.03	732.90
3650.	538.	2676.	436.	516.	600.	176.	623.	110.	732.90
1.32	1.04	4.46	2.48	.122	.069	.070	.045	731.60	600.00
.001354	150.	290.	360.	2	0	0	.00	250.00	850.00

*SECNO 25.810

3265 DIVIDED FLOW

CHURCH STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-10

25.81	13.12	745.62	.00	.00	745.98	.35	.10	.06	747.10
3650.	31.	3619.	0.	70.	754.	0.	625.	110.	747.30
1.33	.44	4.80	.00	.080	.045	.080	.045	732.50	461.87
.001140	80.	80.	80.	2	0	0	.00	190.04	688.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.90	.00	40.00	.00	510.00	1.64	732.50	732.50

*SECNO 25.960

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
746.81	745.98	.00	630.	3054.	510.	514.	741.80	744.60

CHURCH STREET BRIDGE -ADJACENT UPSTREAM SECTION S-10

25.86	13.64	746.14	.00	.00	746.46	.31	.48	.00	747.10
3650.	85.	3565.	0.	147.	787.	0.	626.	111.	747.30
1.33	.57	4.53	.00	.080	.045	.080	.045	732.50	435.41

.000975	52.	52.	52.	2	0	2	.00	229.28	688.00

1490 NH CARD USED
*SECNO 25.890

3470 ENCROACHMENT STATIONS= 335.0 595.0 TYPE= 1 TARGET= 260.000

CROSS SECTION V UPSTREAM OF CHURCH STREET

25.89	14.15	746.25	.00	.00	746.32	.26	.05	.01	733.70
3650.	674.	1882.	1094.	275.	383.	324.	627.	111.	733.70
1.33	2.45	4.91	3.38	.086	.078	.075	.045	732.10	408.15
.002081	80.	30.	30.	2	0	0	.00	186.85	595.00

1490 NH CARD USED
*SECNO 26.600

3470 ENCROACHMENT STATIONS= .0 660.0 TYPE= 1 TARGET= 659.999

CROSS SECTION W DOWNSTREAM OF COLLEGE AVE

26.60	14.94	747.84	.00	.00	748.36	.52	1.71	.13	735.80
3650.	591.	2866.	192.	403.	442.	257.	641.	116.	735.80
1.37	1.47	6.49	.75	.104	.078	.165	.045	732.90	69.75
.003612	700.	710.	300.	3	0	0	.00	590.25	660.00

*SECNO 26.680

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

COLLEGE AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-11

26.68	13.70	748.20	.00	.00	748.57	.37	.17	.04	748.50
3650.	99.	3420.	130.	176.	678.	178.	643.	117.	748.50
1.37	.57	5.04	.73	.080	.045	.080	.045	734.50	203.07
.001352	80.	80.	80.	2	0	0	.00	518.71	762.98

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.90	.00	45.00	.00	490.00	.28	734.50	734.50

*SECNO 26.730

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID	ELLC	ELTRD

14112 G.B.

					AREA				
749.49	748.57	.00	1624.	2021.	490.	493.	744.80	246.50	

COLLEGE AVE BRIDGE -ADJACENT UPSTREAM SECTION S-11

26.73	13.73	748.23	.00	.00	748.59	.37	.03	.00	748.50
3650.	106.	3409.	135.	185.	680.	184.	645.	118.	748.50
1.37	.57	5.01	.74	.080	.045	.080	.045	734.50	199.05
.001333	56.	56.	56.	2	0	2	.00	527.25	764.27

1490 NH CARD USED
*SECNO 26.800

3470 ENCROACHMENT STATIONS= .0 800.0 TYPE= 1 TARGET= 799.999

CROSS SECTION X UPSTREAM OF COLLEGE AVE

26.80	14.30	748.70	.00	.00	748.77	.07	.08	.09	736.20
3650.	606.	1854.	1190.	1239.	679.	1070.	649.	119.	736.20
1.39	.49	2.73	1.11	.167	.078	.103	.045	734.40	67.64
.000671	50.	70.	200.	2	0	0	.00	732.36	800.00

1490 NH CARD USED
*SECNO 27.390

CROSS SECTION Y DOWNSTREAM OF MICHIGAN AVE

27.39	15.38	749.08	.00	.00	749.23	.15	.42	.04	736.10
3650.	938.	2091.	620.	804.	528.	864.	678.	129.	736.10
1.44	1.17	3.96	.72	.098	.069	.107	.045	733.70	82.41
.000964	400.	590.	500.	2	0	0	.00	1151.56	1233.97

*SECNO 27.460

3265 DIVIDED FLOW

MICHIGAN AVE BRIDGE -ADJACENT DOWNSTREAM SECTION S-12

27.46	16.20	749.10	.00	.00	749.32	.21	.05	.03	749.60
3650.	201.	3449.	0.	325.	904.	0.	681.	130.	750.50
1.45	.62	3.81	.00	.080	.045	.080	.045	732.90	178.04
.000609	70.	70.	70.	2	0	0	.00	306.47	531.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.90	.00	18.00	.00	666.00	2.65	732.90	732.90

*SECNO 27.510

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

14112 G.B.

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
749.80	749.32	.00	1209.	2459.	666.	665.	745.70	746.70

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 749.60 ELREA= 750.50

MICHIGAN AVE BRIDGE -ADJACENT UPSTREAM SECTION S-12

BRIDGE SKEWED 26 DEGREES) SKEW FACTOR OF 0.90 APPLIED

27.51	16.27	749.17	.00	.00	749.42	.25	.10	.00	749.60
3650.	0.	3650.	0.	0.	908.	0.	682.	131.	750.50
1.45	.00	4.02	.00	.080	.045	.080	.045	732.90	468.00
.000673	55.	55.	55.	2	0	3	.00	63.00	531.00

490 NH CARD USED

*SECNO 27.560

27.56	16.42	749.42	.00	.00	749.50	.08	.03	.05	735.70
3650.	1520.	1956.	174.	1059.	690.	138.	684.	131.	735.70
1.46	1.43	2.83	1.26	.077	.069	.075	.045	733.00	97.11
.000460	50.	50.	50.	2	0	0	.00	342.31	439.42

*SECNO 27.710

CROSS SECTION Z UPSTREAM OF MICHIGAN AVE

27.71	15.98	749.48	.00	.00	749.57	.09	.07	.01	736.20
3650.	1468.	2014.	168.	946.	670.	125.	689.	132.	736.20
1.47	1.55	3.00	1.34	.076	.069	.075	.045	733.50	115.95
.000537	100.	150.	250.	2	0	0	.00	321.17	437.12

*SECNO 27.970

3470 ENCROACHMENT STATIONS= 330.0 486.8 TYPE= 1 TARGET= -330.000

27.97	15.51	749.61	.00	.00	749.82	.21	.19	.06	736.80
3650.	785.	2659.	206.	309.	649.	112.	698.	133.	736.80
1.49	2.54	4.10	1.84	.075	.069	.075	.045	734.10	330.00
.001042	260.	260.	260.	0	0	0	.00	104.65	434.65

*SECNO 28.020

3280 CROSS SECTION 28.02 EXTENDED .85 FEET

3470 ENCROACHMENT STATIONS= 580.0 1062.2 TYPE= 1 TARGET= 1147.999

DT&I RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-13

28.02	15.55	749.85	.00	.00	750.11	.26	.27	.02	748.60
3650.	0.	3650.	0.	0.	889.	0.	705.	134.	100000.00

1.51	.00	4.10	.00	.080	.045	.080	.045	734.30	1000.00
.000221	310.	310.	310.	0	0	0	.00	62.16	1062.16

SPECIAL BRIDGE

3070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.95	1.85	2.60	170.00	36.00	6.50	525.00	1.10	734.30	734.30

*SECNO 28.040

3280 CROSS SECTION 28.04 EXTENDED 1.61 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
751.24	750.14	.03	906.	2770.	525.	518.	746.40	749.00

3470 ENCROACHMENT STATIONS= .0 1148.0 TYPE= 1 TARGET= 1147.999

DT&I RR BRIDGE -ADJACENT UPSTREAM SECTION S-13

BRIDGE SKEWED 65 DEGREES; SKEW FACTOR OF 0.42 APPLIED

28.04	16.31	750.61	.00	.00	750.65	.04	.54	.00	748.60
3650.	0.	3650.	0.	0.	2229.	0.	705.	134.	100000.00
1.52	.00	1.64	.00	.080	.045	.080	.045	734.30	1000.00
.000084	14.	14.	14.	2	0	2	.00	148.00	1148.00

1490 NH CARD USED

*SECNO 28.090

3470 ENCROACHMENT STATIONS= .0 200.0 TYPE= 1 TARGET= 199.999

28.09	17.06	750.56	.00	.00	750.72	.16	.01	.06	735.70
3650.	513.	2648.	489.	226.	742.	398.	707.	134.	735.70
1.52	2.28	3.57	1.23	.069	.085	.085	.045	733.50	18.45
.000888	50.	50.	50.	2	0	0	.00	181.55	200.00

*SECNO 28.230

CROSS SECTION ZZ UPSTREAM OF DT&I RR

28.23	17.16	750.66	.00	.00	750.83	.17	.11	.01	735.70
3650.	382.	2767.	501.	229.	747.	473.	711.	134.	735.70
1.53	1.67	3.71	1.06	.085	.069	.085	.045	733.50	18.24
.000719	200.	140.	30.	2	0	0	.00	232.13	250.37

14112 G.B.

1490 NH CARD USED
*SECNO 28.570

3470 ENCROACHMENT STATIONS= .0 350.0 TYPE= 1 TARGET= 349.999

CROSS SECTION AA DOWNSTREAM OF MERRICK STREET

28.57	18.52	750.92	.00	.00	751.05	.13	.21	.01	736.20
3650.	285.	2497.	868.	193.	719.	932.	722.	136.	736.20
1.57	1.47	3.47	.93	.085	.069	.107	.045	732.40	26.05
.000596	370.	340.	230.	0	0	0	.00	323.95	350.00

*SECNO 28.610

MERRICK STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-14

28.61	15.09	750.89	.00	.00	751.13	.24	.03	.05	750.80
3650.	0.	3320.	330.	0.	809.	424.	724.	136.	749.30
1.57	.00	4.10	.78	.080	.045	.080	.045	735.80	324.41
.000718	40.	40.	40.	2	0	0	.00	287.52	611.92

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	35.20	.00	660.00	1.12	735.80	735.80

*SECNO 28.640

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	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
751.60	751.13	.00	1482.	2173.	660.	660.	749.00	749.10

MERRICK STREET BRIDGE -ADJACENT UPSTREAM SECTION S-14

BRIDGE SKEWED 28 DEGREES; SKEW FACTOR OF 0.88 APPLIED

28.64	15.10	750.90	.00	.00	751.14	.24	.01	.00	750.80
3650.	0.	3316.	334.	0.	810.	428.	724.	136.	749.30
1.57	.00	4.10	.78	.080	.045	.080	.045	735.80	324.20
.000714	30.	30.	30.	2	0	4	.00	288.14	612.35

490 NH CARD USED
*SECNO 28.690

CROSS SECTION AB UPSTREAM OF MERRICK STREET

28.69	17.74	751.04	.00	.00	751.19	.15	.03	.02	736.30
3650.	388.	2735.	527.	330.	758.	819.	726.	137.	736.30
1.58	1.18	3.61	.64	.091	.052	.112	.045	733.30	51.42
.000389	50.	50.	50.	2	0	0	.00	408.06	459.48

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 29.270

CROSS SECTION AC

29.27	16.49	751.29	.00	.00	751.31	.03	.11	.01	735.60
3650.	1720.	1000.	929.	1751.	473.	1301.	754.	141.	735.60
1.69	.98	2.12	.71	.075	.052	.078	.046	734.80	28.62
.000134	550.	580.	270.	0	0	0	.00	496.86	525.47

1490 NH CARD USED
*SECNO 30.290

CROSS SECTION AD

30.29	18.58	751.38	.00	.00	751.39	.01	.08	.00	737.20
3650.	2786.	691.	173.	4696.	531.	390.	857.	156.	737.20
2.07	.59	1.30	.44	.066	.052	.085	.046	732.80	53.77
.000051	950.	1020.	1050.	2	0	0	.00	877.30	931.07

1490 NH CARD USED
*SECNO 31.150

3301 HV CHANGED MORE THAN HVINS

31.15	14.84	751.04	.00	.00	751.72	.68	.13	.20	738.10
3650.	130.	3241.	279.	86.	465.	124.	917.	165.	738.10
2.11	1.51	6.97	2.26	.085	.052	.085	.046	736.20	326.09
.001776	820.	860.	870.	2	0	0	.00	93.81	419.90

CCHV= .300 CEHV= .500
*SECNO 31.200

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
31.20	14.91	751.11	.00	.00	751.80	.69	.08	.00	738.10
3650.	123.	3267.	260.	89.	467.	125.	917.	165.	738.10
2.11	1.38	6.99	2.08	.080	.045	.080	.046	736.20	324.88
.001328	50.	50.	50.	2	0	0	.00	95.12	420.01

*SECNO 31.230

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 767.00 MAX ELLC= 759.00

NYC RR BRIDGE -ADJACENT DOWNSTREAM SECTION S-15A

14112 G.B.

31.23	15.67	752.57	.00	.00	752.86	.28	.94	.12	767.00
3650.	0.	3650.	0.	0.	853.	0.	934.	167.	767.00
2.17	.00	4.28	.00	.080	.045	.080	.046	736.90	3.00
.000781	900.	940.	950.	1	0	0	.00	57.00	60.00

*SECNO 31.260

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 767.00 MAX ELLC= 759.00

NYC RR BRIDGE -ADJACENT UPSTREAM SECTION S-15A

31.26	15.70	752.60	.00	.00	752.88	.28	.02	.00	767.00
3650.	0.	3650.	0.	0.	855.	0.	934.	167.	767.00
2.17	.00	4.27	.00	.080	.045	.080	.046	736.90	3.00
.000776	27.	27.	27.	0	0	0	.00	57.00	60.00

490 NH CARD USED

*SECNO 31.280

31.28	16.30	752.50	.00	.00	753.01	.51	.02	.11	738.10
3650.	208.	3137.	305.	165.	513.	153.	935.	167.	738.10
2.17	1.26	6.11	1.99	.085	.052	.085	.046	736.20	301.54
.001197	10.	20.	20.	2	0	0	.00	120.52	422.06

*SECNO 31.300

CROSS SECTION AE UPSTREAM OF NYC RR

31.30	16.33	752.53	.00	.00	753.03	.50	.02	.00	738.10
3650.	210.	3135.	305.	167.	514.	154.	935.	167.	738.10
2.17	1.26	6.10	1.99	.085	.052	.085	.046	736.20	301.21
.001190	20.	20.	20.	0	0	0	.00	120.88	422.09

*SECNO 31.320

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= 752.40 ELREA= 754.30

BEECHER STREET BRIDGE -ADJACENT DOWNSTREAM SECTION S-15

31.32	15.36	752.76	.00	.00	753.10	.35	.02	.05	756.50
3650.	0.	3650.	0.	0.	773.	0.	935.	167.	758.50
2.17	.00	4.72	.00	.080	.045	.080	.046	737.40	420.00
.001015	20.	20.	20.	2	0	0	.00	52.00	472.00

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.00	1.50	2.80	.00	52.00	.00	780.00	.00	732.40	732.40

14112 G.B.

*SECNO 31.380
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
753.27	753.10	.00	0.	3650.	780.	780.	752.40	754.60

BEECHER STREET BRIDGE -ADJACENT UPSTREAM SECTION S-15

31.38	15.53	752.93	.00	.00	753.27	.34	.16	.00	756.50
3650.	0.	3650.	0.	0.	781.	0.	936.	167.	758.50
2.18	.00	4.67	.00	.080	.045	.080	.046	737.40	420.00
.000982	51.	51.	51.	2	0	0	.00	52.00	472.00

1490 NH CARD USED
*SECNO 31.430

3265 DIVIDED FLOW

CROSS SECTION AF UPSTREAM OF BEECHER STREET

31.43	18.29	752.99	.00	.00	753.32	.33	.05	.00	738.20
3650.	393.	2562.	696.	197.	481.	300.	937.	167.	738.20
2.18	1.99	5.33	2.32	.090	.063	.085	.046	734.70	78.84
.001225	50.	50.	50.	1	0	0	.00	115.71	548.83

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 31.980

CROSS SECTION AG

31.98	18.93	753.53	.00	.00	753.57	.04	.22	.03	738.00
3650.	151.	1476.	2024.	199.	687.	2040.	962.	170.	738.00
2.29	.76	2.15	.99	.094	.063	.090	.046	734.60	54.51
.000193	550.	550.	550.	2	0	0	.00	341.17	395.68

1490 NH CARD USED
*SECNO 32.780

CROSS SECTION AH

32.78	16.65	753.65	.00	.00	753.66	.01	.09	.00	739.20
3650.	301.	655.	2694.	503.	485.	4244.	1025.	177.	739.20
2.54	.60	1.35	.63	.095	.063	.100	.046	737.00	18.84
.000085	700.	800.	650.	2	0	0	.00	539.46	558.31

1490 NH CARD USED
*SECNO 33.600

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

14112 G.B.

CROSS SECTION AI

33.60	16.32	753.72	.00	.00	753.73	.02	.07	.00	738.70
3650.	2485.	1092.	73.	3420.	706.	159.	1106.	186.	738.70
2.76	.73	1.55	.46	.100	.063	.100	.046	737.40	88.93
.000110	770.	820.	680.	2	0	0	.00	543.70	632.63

1490 NH CARD USED
*SECNO 34.150

CROSS SECTION AJ

34.15	16.77	753.77	.00	.00	753.77	.01	.04	.00	739.10
3650.	2899.	689.	62.	6616.	639.	204.	1176.	194.	739.10
3.02	.44	1.08	.30	.110	.063	.110	.046	737.00	44.99
.000053	520.	550.	580.	0	0	0	.00	835.83	880.82

1490 NH CARD USED
*SECNO 35.190

CROSS SECTION AK

35.19	16.93	753.83	.00	.00	753.84	.01	.06	.00	739.90
3650.	1235.	778.	1638.	2222.	583.	3247.	1321.	211.	739.90
3.40	.56	1.33	.50	.110	.063	.110	.046	736.90	37.99
.000084	940.	1040.	880.	1	0	0	.00	714.05	752.04

1490 NH CARD USED
*SECNO 36.270

3470 ENCROACHMENT STATIONS= 440.0 640.0 TYPE= 1 TARGET= 200.000

CROSS SECTION AL DOWNSTREAM OF US-223

36.27	16.84	753.94	.00	.00	754.02	.08	.16	.02	741.40
3650.	689.	2201.	760.	647.	788.	686.	1419.	222.	741.40
3.53	1.06	2.79	1.11	.110	.063	.110	.046	737.10	440.00
.000376	940.	1080.	1100.	2	0	0	.00	200.00	640.00

CCHV= .300 CEHV= .500
*SECNO 36.320

3470 ENCROACHMENT STATIONS= 460.0 620.0 TYPE= 1 TARGET= 160.000

36.32	16.84	753.94	.00	.00	754.05	.10	.01	.01	741.40
3650.	575.	2414.	662.	493.	788.	537.	1421.	222.	741.40
3.54	1.17	3.06	1.23	.080	.045	.080	.046	737.10	460.00
.000230	50.	50.	50.	0	0	0	.00	160.00	620.00

*SECNO 36.390

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= 0 MIN ELTRD= 763.00 MAX ELLC= 759.50

14112 6.8.

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 763.00 ELREA= 763.30

US-223 BRIDGE -ADJACENT DOWNSTREAM SECTION S-16

36.39	16.66	753.96	.00	.00	754.07	.11	.02	.00	763.00
3650.	0.	3650.	0.	0.	1369.	0.	1424.	222.	763.30
3.55	.00	2.67	.00	.080	.045	.080	.046	737.30	974.04
.000308	70.	70.	70.	0	0	0	.00	133.82	1107.86

*SECNO 36.440

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 763.00 MAX ELLC= 759.50

US-223 BRIDGE -ADJACENT UPSTREAM SECTION S-16

36.44	16.67	753.97	.00	.00	754.08	.11	.01	.00	763.00
3650.	0.	3650.	0.	0.	1370.	0.	1425.	222.	763.30
3.55	.00	2.66	.00	.080	.045	.080	.046	737.30	974.03
.000308	47.	47.	47.	0	0	0	.00	133.86	1107.88

1490 NH CARD USED

*SECNO 36.500

3470 ENCROACHMENT STATIONS= 430.0 670.0 TYPE= 1 TARGET= 240.000

36.50	16.89	753.99	.00	.00	754.11	.12	.02	.00	741.40
3650.	259.	2526.	865.	284.	789.	749.	1427.	223.	741.40
3.56	.91	3.20	1.15	.120	.063	.110	.046	737.10	478.37
.000491	60.	60.	60.	0	0	0	.00	191.63	670.00

*SECNO 36.520

3470 ENCROACHMENT STATIONS= 410.0 690.0 TYPE= 1 TARGET= 280.000

CROSS SECTION AM UPSTREAM OF US-223

36.52	16.92	754.02	.00	.00	754.12	.10	.01	.00	741.40
3650.	249.	2420.	981.	285.	790.	883.	1428.	223.	741.40
3.56	.87	3.06	1.11	.120	.063	.110	.046	737.10	478.30
.000449	20.	20.	20.	1	0	0	.00	211.69	690.00

14112 G.B.

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN, CITY OF

3) WATERCOURSE: S. Br. RIVER RAISIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

****
HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
EPROR CORR - 01,02,03
MODIFICATION - 50,51,52,53
****

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

S.BR.RIVER RAISIN-ADRIAN

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
100 yr	12,130	Natural	.00	.00	.00	708.40	5230.00	723.60	.00	723.90	13.51	5.02	1452.24	1423.05
100 yr	12,130	Encroached	.00	.00	.00	708.40	5230.00	723.60	.00	723.91	13.52	5.02	1361.34	1422.39
500	12,130		.00	.00	.00	708.40	6510.00	724.50	.00	724.88	16.14	5.72	1612.50	1620.62
50	12,130		.00	.00	.00	708.40	4620.00	723.20	.00	723.46	11.89	4.62	1383.71	1340.11
10	12,130		.00	.00	.00	708.40	2960.00	721.70	.00	721.85	7.87	3.48	1141.51	1054.98
	12,650	520.00	.00	.00	709.60	5230.00	724.51	.00	724.76	20.13	5.72	1488.48	1165.65
	12,650	520.00	.00	.00	709.60	5230.00	724.52	.00	724.76	20.09	5.72	1489.55	1166.91
	12,650	520.00	.00	.00	709.60	6510.00	725.57	.00	725.88	22.80	6.39	1652.17	1363.51
	12,650	520.00	.00	.00	709.60	4620.00	724.01	.00	724.22	18.40	5.34	1412.35	1077.14
	12,650	520.00	.00	.00	709.60	2960.00	722.25	.00	722.39	13.94	4.24	1152.22	792.91
	13,650	1000.00	.00	.00	710.50	5230.00	726.08	.00	726.28	11.35	4.89	2062.37	1552.70
	13,650	1000.00	.00	.00	710.50	5230.00	726.25	.00	726.42	13.17	4.45	1975.25	1440.95
	13,650	1000.00	.00	.00	710.50	6510.00	727.24	.00	727.43	10.53	4.95	2635.86	2006.35
	13,650	1000.00	.00	.00	710.50	4620.00	725.49	.00	725.69	11.50	4.80	1800.85	1362.40
	13,650	1000.00	.00	.00	710.50	2960.00	723.49	.00	723.68	11.32	4.32	1092.34	879.89
	14,590	940.00	.00	.00	711.40	5230.00	727.35	.00	728.04	28.76	7.46	990.04	975.18
	14,590	940.00	.00	.00	711.40	5230.00	727.63	.00	728.28	26.68	7.27	1021.16	1012.60
	14,590	940.00	.00	.00	711.40	6510.00	728.40	.00	729.26	33.44	8.42	1112.78	1125.89
	14,590	940.00	.00	.00	711.40	4620.00	726.78	.00	727.39	26.34	6.95	927.03	900.11
	14,590	940.00	.00	.00	711.40	2960.00	724.75	.00	725.13	20.15	5.47	719.20	659.47
	15,950	1360.00	.00	.00	715.20	5230.00	728.99	.00	729.03	2.97	2.28	4192.07	3033.19
	15,950	1360.00	.00	.00	715.20	5230.00	729.16	.00	729.20	2.77	2.21	4296.36	3145.02
	15,950	1360.00	.00	.00	715.20	6510.00	730.22	.00	730.26	2.82	2.35	4939.21	3873.22
	15,950	1360.00	.00	.00	715.20	4620.00	728.33	.00	728.37	3.10	2.25	3795.65	2624.76
	15,950	1360.00	.00	.00	715.20	2960.00	726.16	.00	726.20	4.01	2.26	2484.93	1477.45
	17,150	1200.00	.00	.00	716.70	5230.00	729.40	.00	729.44	4.09	2.53	3732.34	2586.44
	17,150	1200.00	.00	.00	716.70	5230.00	729.55	.00	729.60	4.04	2.53	3632.33	2602.51
	17,150	1200.00	.00	.00	716.70	6510.00	730.60	.00	730.65	3.77	2.58	4460.97	3354.11
	17,150	1200.00	.00	.00	716.70	4620.00	728.76	.00	728.81	4.33	2.51	3357.92	2221.03
	17,150	1200.00	.00	.00	716.70	2960.00	726.72	.00	726.78	5.72	2.54	2198.38	1237.62

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	.01K
2	18.130	980.00	.00	.00	719.10	5230.00	729.71	.00	729.73	1.80	1.15	5123.12	3900.14
3	18.130	980.00	.00	.00	719.10	5230.00	729.85	.00	729.87	1.74	1.14	4922.90	3967.63
4	18.130	980.00	.00	.00	719.10	6510.00	730.87	.00	730.89	1.42	1.10	6675.39	5469.58
5	18.130	980.00	.00	.00	719.10	4620.00	729.10	.00	729.12	2.09	1.19	4324.51	3198.87
6	18.130	980.00	.00	.00	719.10	2960.00	727.21	.00	727.24	3.43	1.31	2220.65	1597.68
7													
8	19.400	1270.00	.00	.00	719.90	5230.00	729.34	.00	730.87	59.33	10.08	568.80	678.96
9	19.400	1270.00	.00	.00	719.90	5230.00	729.50	.00	730.97	55.23	9.86	583.18	703.76
10	19.400	1270.00	.00	.00	719.90	6510.00	730.09	.00	732.03	67.24	11.39	634.46	793.91
11	19.400	1270.00	.00	.00	719.90	4620.00	728.96	.00	730.28	54.51	9.36	537.52	625.74
12	19.400	1270.00	.00	.00	719.90	2960.00	727.77	.00	728.56	40.15	7.17	440.06	467.15
13													
14	19.450	50.00	.00	.00	719.90	5230.00	729.88	.00	731.19	46.76	9.36	617.08	764.82
15	19.450	50.00	.00	.00	719.90	5230.00	730.00	.00	731.27	44.74	9.23	626.66	781.87
16	19.450	50.00	.00	.00	719.90	6510.00	730.94	728.29	732.44	47.04	10.13	833.63	949.19
17	19.450	50.00	.00	.00	719.90	4620.00	729.42	.00	730.58	44.35	8.78	576.56	693.74
18	19.450	50.00	.00	.00	719.90	2960.00	728.05	.00	728.76	34.77	6.86	461.67	502.01
19													
20	19.470	20.00	739.10	735.10	719.10	5230.00	730.85	.00	731.47	26.23	6.32	827.34	1021.27
21	19.470	20.00	739.10	735.10	719.10	5230.00	730.93	.00	731.54	25.47	6.26	836.10	1036.26
22	19.470	20.00	739.10	735.10	719.10	6510.00	732.04	.00	732.75	26.64	6.75	964.02	1261.24
23	19.470	20.00	739.10	735.10	719.10	4620.00	730.25	.00	730.82	25.68	6.06	762.22	911.62
24	19.470	20.00	739.10	735.10	719.10	2960.00	728.52	.00	728.91	21.91	5.05	586.27	632.31
25													
26	19.510	30.00	739.10	735.10	719.10	5230.00	730.95	.00	731.55	25.18	6.23	839.57	1042.22
27	19.510	30.00	739.10	735.10	719.10	5230.00	731.02	.00	731.62	24.50	6.17	847.90	1056.55
28	19.510	30.00	739.10	735.10	719.10	6510.00	732.15	.00	732.84	25.66	6.66	977.23	1285.08
29	19.510	30.00	739.10	735.10	719.10	4620.00	730.35	.00	730.90	24.65	5.97	773.54	930.46
30	19.510	30.00	739.10	735.10	719.10	2960.00	728.60	.00	728.98	21.11	4.98	594.14	644.23
31													
32	19.530	20.00	.00	.00	717.40	5230.00	730.64	.00	732.00	51.23	9.68	680.35	730.73
33	19.530	20.00	.00	.00	717.40	5230.00	730.72	.00	732.06	49.86	9.60	688.06	740.69
34	19.530	20.00	.00	.00	717.40	6510.00	731.74	.00	733.39	55.44	10.75	790.69	874.31
35	19.530	20.00	.00	.00	717.40	4620.00	730.09	.00	731.30	48.48	9.09	628.01	663.53
36	19.530	20.00	.00	.00	717.40	2960.00	728.47	.00	729.22	37.18	7.09	486.81	485.45
37													
38	19.560	30.00	.00	.00	717.40	5230.00	730.88	.00	732.17	47.21	9.44	703.90	761.17
39	19.560	30.00	.00	.00	717.40	5230.00	730.95	.00	732.22	46.12	9.37	710.82	770.14
40	19.560	30.00	.00	.00	717.40	6510.00	732.02	.00	733.58	50.79	10.46	820.44	913.42
41	19.560	30.00	.00	.00	717.40	4620.00	730.31	.00	731.46	44.86	8.87	648.51	689.77
42	19.560	30.00	.00	.00	717.40	2960.00	728.61	.00	729.34	35.00	6.96	498.79	500.36
43													
44	20.580	1020.00	.00	.00	723.40	3650.00	734.92	.00	735.38	19.83	6.34	966.74	819.58
45	20.580	1020.00	.00	.00	723.40	3650.00	734.93	.00	735.39	19.77	6.34	967.86	820.91
46	20.580	1020.00	.00	.00	723.40	4580.00	736.36	.00	736.89	19.61	6.84	1139.88	1034.12
47	20.580	1020.00	.00	.00	723.40	3160.00	734.15	.00	734.58	19.59	6.01	875.19	714.00
48	20.580	1020.00	.00	.00	723.40	1990.00	731.83	.00	732.18	21.06	5.27	600.31	433.61
49													
50	20.630	50.00	.00	.00	723.40	3650.00	734.99	.00	735.48	14.82	6.37	815.19	948.20
51	20.630	50.00	.00	.00	723.40	3650.00	735.00	.00	735.48	14.78	6.36	815.88	949.42
52	20.630	50.00	.00	.00	723.40	4580.00	736.42	.00	737.00	15.35	7.01	936.40	1169.05
53	20.630	50.00	.00	.00	723.40	3160.00	734.24	.00	734.66	14.23	5.95	750.73	837.70
54	20.630	50.00	.00	.00	723.40	1990.00	731.98	.00	732.28	13.61	4.95	558.59	539.38
55													
56													
57													

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SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	.01K
20.660	30.00	743.10	740.30	722.10	3650.00	735.10	.00	735.54	15.02	5.27	692.03	941.94
20.660	30.00	743.10	740.30	722.10	3650.00	735.11	.00	735.54	14.98	5.27	692.54	942.99
20.660	30.00	743.10	740.30	722.10	4580.00	736.54	.00	737.06	16.24	5.83	785.11	1136.34
20.660	30.00	743.10	740.30	722.10	3160.00	734.34	.00	734.72	14.06	4.92	642.55	842.77
20.660	30.00	743.10	740.30	722.10	1990.00	732.08	.00	732.33	12.27	4.02	495.62	568.03
20.710	46.00	743.10	740.30	722.10	3650.00	735.18	.00	735.61	14.73	5.24	696.49	951.03
20.710	46.00	743.10	740.30	722.10	3650.00	735.19	.00	735.61	14.70	5.24	696.99	952.05
20.710	46.00	743.10	740.30	722.10	4580.00	736.62	.00	737.14	15.96	5.80	789.83	1146.45
20.710	46.00	743.10	740.30	722.10	3160.00	734.41	.00	734.78	13.78	4.89	646.78	851.12
20.710	46.00	743.10	740.30	722.10	1990.00	732.14	.00	732.39	11.98	3.98	499.49	574.84
20.750	40.00	.00	.00	721.30	3650.00	735.25	.00	735.67	13.86	5.69	973.31	980.24
20.750	40.00	.00	.00	721.30	3650.00	735.26	.00	735.67	13.83	5.69	974.25	981.43
20.750	40.00	.00	.00	721.30	4580.00	736.75	.00	737.22	13.99	6.16	1159.61	1224.51
20.750	40.00	.00	.00	721.30	3160.00	734.47	.00	734.84	13.39	5.36	879.42	863.65
20.750	40.00	.00	.00	721.30	1990.00	732.18	.00	732.45	12.18	4.43	621.13	570.19
20.800	30.00	.00	.00	721.30	3650.00	735.31	.00	735.71	13.42	5.62	1012.10	996.31
20.800	30.00	.00	.00	721.30	3650.00	735.32	.00	735.72	13.39	5.61	1013.27	997.59
20.800	30.00	.00	.00	721.30	4580.00	736.84	.00	737.27	13.02	5.97	1248.83	1269.37
20.800	30.00	.00	.00	721.30	3160.00	734.51	.00	734.88	13.19	5.34	891.96	869.97
20.800	30.00	.00	.00	721.30	1990.00	732.22	.00	732.49	12.03	4.42	624.29	573.63
21.390	590.00	.00	.00	723.90	3650.00	736.22	.00	736.40	9.17	4.52	1591.52	1205.59
21.390	590.00	.00	.00	723.90	3650.00	736.22	.00	736.41	9.14	4.52	1593.06	1207.02
21.390	590.00	.00	.00	723.90	4580.00	737.73	.00	737.91	7.92	4.55	2025.41	1627.63
21.390	590.00	.00	.00	723.90	3160.00	735.39	.00	735.58	9.85	4.47	1371.67	1006.96
21.390	590.00	.00	.00	723.90	1990.00	733.01	.00	733.22	12.94	4.36	798.15	553.23
21.960	570.00	.00	.00	723.40	3650.00	736.61	.00	736.88	10.14	4.99	1207.87	1145.96
21.960	570.00	.00	.00	723.40	3650.00	736.61	.00	736.88	10.13	4.98	1208.54	1146.80
21.960	570.00	.00	.00	723.40	4580.00	738.07	.00	738.37	10.34	5.41	1421.92	1424.51
21.960	570.00	.00	.00	723.40	3160.00	735.81	.00	736.06	9.83	4.70	1096.99	1008.13
21.960	570.00	.00	.00	723.40	1990.00	733.57	.00	733.75	8.86	3.90	806.55	668.49
21.990	30.00	.00	.00	723.20	3650.00	736.76	.00	736.93	5.76	3.28	1112.18	1520.95
21.990	30.00	.00	.00	723.20	3650.00	736.77	.00	736.93	5.75	3.28	1112.75	1522.04
21.990	30.00	.00	.00	723.20	4580.00	738.24	.00	738.43	5.81	3.50	1307.71	1900.28
21.990	30.00	.00	.00	723.20	3160.00	735.96	.00	736.11	5.62	3.13	1011.02	1333.42
21.990	30.00	.00	.00	723.20	1990.00	733.68	.00	733.79	5.15	2.66	747.57	876.63
22.010	10.00	745.40	743.10	723.20	3650.00	736.79	.00	736.96	5.71	3.27	1115.59	1527.39
22.010	10.00	745.40	743.10	723.20	3650.00	736.79	.00	736.96	5.70	3.27	1116.16	1528.48
22.010	10.00	745.40	743.10	723.20	4580.00	738.27	.00	738.46	5.76	3.49	1311.71	1908.27
22.010	10.00	745.40	743.10	723.20	3160.00	735.98	.00	736.13	5.57	3.12	1014.05	1338.94
22.010	10.00	745.40	743.10	723.20	1990.00	733.69	.00	733.80	5.11	2.65	749.61	879.98
22.040	30.00	.00	.00	723.50	3650.00	736.73	.00	737.07	18.93	5.88	1125.12	838.82
22.040	30.00	.00	.00	723.50	3650.00	736.73	.00	737.08	18.90	5.88	1125.96	839.62
22.040	30.00	.00	.00	723.50	4580.00	738.22	.00	738.56	16.85	5.99	1394.37	1115.70
22.040	30.00	.00	.00	723.50	3160.00	735.91	.00	736.26	20.20	5.81	977.37	703.11
22.040	30.00	.00	.00	723.50	1990.00	733.59	.00	733.97	25.08	5.57	574.59	397.33

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	01K
22.120	80.00	.00	.00	722.50	3650.00	737.01	.00	737.21	8.49	4.13	1276.37	1253.04
22.120	80.00	.00	.00	722.50	3650.00	737.01	.00	737.22	8.48	4.12	1276.89	1253.76
22.120	80.00	.00	.00	722.50	4580.00	738.43	.00	738.68	9.06	4.57	1461.96	1521.67
22.120	80.00	.00	.00	722.50	3160.00	736.22	.00	736.41	8.04	3.86	1174.76	1114.75
22.120	80.00	.00	.00	722.50	1990.00	734.02	.00	734.14	6.81	3.12	888.98	762.71
22.160	40.00	.00	.00	722.50	3650.00	737.00	.00	737.27	6.16	4.53	1066.16	1470.33
22.160	40.00	.00	.00	722.50	3650.00	737.01	.00	737.28	6.16	4.53	1066.55	1471.12
22.160	40.00	.00	.00	722.50	4580.00	738.42	.00	738.76	6.74	5.07	1208.02	1763.88
22.160	40.00	.00	.00	722.50	3160.00	736.23	.00	736.46	5.75	4.20	988.41	1318.07
22.160	40.00	.00	.00	722.50	1990.00	734.03	.00	734.17	4.62	3.31	769.71	926.15
22.180	20.00	.00	.00	724.50	3650.00	737.00	.00	737.30	9.01	4.37	838.93	1215.73
22.180	20.00	.00	.00	724.50	3650.00	737.01	.00	737.31	9.00	4.37	839.26	1216.48
22.180	20.00	.00	.00	724.50	4580.00	738.43	.00	738.78	9.35	4.82	957.81	1497.76
22.180	20.00	.00	.00	724.50	3160.00	736.23	.00	736.49	8.71	4.10	774.01	1070.69
22.180	20.00	.00	.00	724.50	1990.00	734.02	.00	734.20	8.15	3.38	591.04	697.16
22.200	20.00	.00	.00	724.50	3650.00	737.02	.00	737.32	8.99	4.37	839.61	1217.29
22.200	20.00	.00	.00	724.50	3650.00	737.03	.00	737.32	8.98	4.37	839.94	1218.04
22.200	20.00	.00	.00	724.50	4580.00	738.44	.00	738.80	9.33	4.81	958.63	1499.82
22.200	20.00	.00	.00	724.50	3160.00	736.24	.00	736.50	8.69	4.10	774.63	1072.06
22.200	20.00	.00	.00	724.50	1990.00	734.04	.00	734.22	8.13	3.37	591.52	698.06
22.220	20.00	.00	.00	722.50	3650.00	737.17	.00	737.37	7.93	4.02	1335.03	1296.55
22.220	20.00	.00	.00	722.50	3650.00	737.18	.00	737.37	7.92	4.02	1335.57	1297.27
22.220	20.00	.00	.00	722.50	4580.00	738.63	.00	738.86	8.37	4.43	1538.97	1583.49
22.220	20.00	.00	.00	722.50	3160.00	736.37	.00	736.55	7.56	3.77	1223.19	1149.07
22.220	20.00	.00	.00	722.50	1990.00	734.13	.00	734.25	6.54	3.08	909.79	777.92
22.260	40.00	.00	.00	722.50	3650.00	737.21	.00	737.40	7.87	4.01	1362.37	1301.28
22.260	40.00	.00	.00	722.50	3650.00	737.21	.00	737.40	7.86	4.01	1362.96	1302.00
22.260	40.00	.00	.00	722.50	4580.00	738.67	.00	738.89	8.24	4.40	1595.74	1595.44
22.260	40.00	.00	.00	722.50	3160.00	736.41	.00	736.58	7.52	3.77	1239.39	1152.22
22.260	40.00	.00	.00	722.50	1990.00	734.15	.00	734.27	6.47	3.07	913.78	782.22
22.660	800.00	.00	.00	724.30	3650.00	738.04	.00	738.53	20.93	6.33	872.69	797.75
22.660	800.00	.00	.00	724.30	3650.00	738.05	.00	738.53	20.91	6.33	873.04	798.12
22.660	800.00	.00	.00	724.30	4580.00	739.53	.00	740.06	20.75	6.78	1066.31	1005.47
22.660	800.00	.00	.00	724.30	3160.00	737.22	.00	737.67	20.68	6.02	775.76	694.82
22.660	800.00	.00	.00	724.30	1990.00	734.89	.00	735.23	19.51	5.06	543.95	450.54
23.180	520.00	.00	.00	724.50	3650.00	739.12	.00	739.79	24.04	6.92	693.26	744.51
23.180	520.00	.00	.00	724.50	3650.00	739.13	.00	739.79	24.02	6.92	693.55	744.72
23.180	520.00	.00	.00	724.50	4580.00	740.59	.00	741.31	23.81	7.38	915.40	938.52
23.180	520.00	.00	.00	724.50	3160.00	738.28	.00	738.87	22.89	6.46	623.81	660.44
23.180	520.00	.00	.00	724.50	1990.00	735.89	.00	736.27	19.65	5.19	465.14	448.91
23.240	60.00	.00	.00	726.10	3650.00	739.65	.00	739.98	10.28	4.59	794.87	1138.24
23.240	60.00	.00	.00	726.10	3650.00	739.65	.00	739.98	10.28	4.59	794.98	1138.46
23.240	60.00	.00	.00	726.10	4580.00	741.08	.00	741.50	11.75	5.17	886.45	1336.30
23.240	60.00	.00	.00	726.10	3160.00	738.76	.00	739.04	9.61	4.28	737.87	1019.26
23.240	60.00	.00	.00	726.10	1990.00	736.22	.00	736.41	8.06	3.46	575.32	701.04

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	.01K
23.280	47.00	744.40	739.20	726.10	3650.00	739.86	.00	740.18	9.78	4.51	808.44	1167.07
23.280	47.00	744.40	739.20	726.10	3650.00	739.86	.00	740.18	9.78	4.51	808.55	1167.30
23.280	47.00	744.40	739.20	726.10	4580.00	741.53	.00	741.91	10.71	5.01	914.83	1399.27
23.280	47.00	744.40	739.20	726.10	3160.00	738.81	.00	739.09	9.49	4.27	740.90	1025.51
23.280	47.00	744.40	739.20	726.10	1990.00	736.26	.00	736.44	7.95	3.44	572.85	705.23
23.340	60.00	.00	.00	725.50	3650.00	739.83	.00	740.38	20.79	6.47	803.53	800.60
23.340	60.00	.00	.00	725.50	3650.00	739.83	.00	740.38	20.77	6.47	803.69	800.80
23.340	60.00	.00	.00	725.50	4580.00	741.50	.00	742.12	20.84	7.01	963.02	1003.18
23.340	60.00	.00	.00	725.50	3160.00	738.78	.00	739.28	21.31	6.20	709.28	684.58
23.340	60.00	.00	.00	725.50	1990.00	736.24	.00	736.61	20.11	5.15	504.33	443.72
23.610	270.00	.00	.00	727.10	3650.00	740.42	.00	741.09	28.09	7.13	712.71	688.74
23.610	270.00	.00	.00	727.10	3650.00	740.42	.00	741.09	28.07	7.13	712.83	688.89
23.610	270.00	.00	.00	727.10	4580.00	742.07	.00	742.83	27.36	7.66	863.26	875.60
23.610	270.00	.00	.00	727.10	3160.00	739.38	.00	740.02	29.28	6.86	625.42	583.97
23.610	270.00	.00	.00	727.10	1990.00	736.84	.00	737.32	30.02	5.85	431.93	363.20
23.640	30.00	.00	.00	727.30	3650.00	741.09	.00	741.27	5.63	3.42	1066.25	1538.16
23.640	30.00	.00	.00	727.30	3650.00	741.09	.00	741.27	5.63	3.42	1066.37	1538.43
23.640	30.00	.00	.00	727.30	4580.00	742.81	.00	743.02	5.55	3.69	1253.26	1943.26
23.640	30.00	.00	.00	727.30	3160.00	740.02	.00	740.19	5.87	3.30	958.67	1304.19
23.640	30.00	.00	.00	727.30	1990.00	737.33	.00	737.46	5.87	2.86	694.94	821.61
23.660	10.00	742.00	742.40	727.30	3650.00	741.11	.00	741.27	3.93	2.90	1256.63	1841.15
23.660	10.00	742.00	742.40	727.30	3650.00	741.11	.00	741.27	3.93	2.90	1256.77	1841.48
23.660	10.00	742.00	742.40	727.30	4580.00	743.39	.00	743.53	3.34	2.98	1609.02	2506.64
23.660	10.00	742.00	742.40	727.30	3160.00	740.04	.00	740.19	4.11	2.80	1129.96	1558.84
23.660	10.00	742.00	742.40	727.30	1990.00	737.35	.00	737.46	4.13	2.43	819.16	979.60
23.690	30.00	.00	.00	728.50	3650.00	741.01	.00	741.44	19.49	5.84	913.09	826.78
23.690	30.00	.00	.00	728.50	3650.00	741.01	.00	741.44	19.48	5.84	913.28	826.98
23.690	30.00	.00	.00	728.50	4580.00	743.29	.00	743.66	14.06	5.58	1256.39	1221.27
23.690	30.00	.00	.00	728.50	3160.00	739.93	.00	740.38	22.14	5.85	753.08	671.63
23.690	30.00	.00	.00	728.50	1990.00	737.24	.00	737.64	26.21	5.27	450.13	388.73
23.830	140.00	.00	.00	728.50	3650.00	741.31	.00	741.71	17.41	5.62	959.16	874.86
23.830	140.00	.00	.00	728.50	3650.00	741.31	.00	741.71	17.40	5.62	959.32	875.03
23.830	140.00	.00	.00	728.50	4580.00	743.51	.00	743.86	13.17	5.45	1288.39	1261.86
23.830	140.00	.00	.00	728.50	3160.00	740.28	.00	740.69	19.26	5.57	804.99	719.95
23.830	140.00	.00	.00	728.50	1990.00	737.63	.00	737.99	22.13	5.00	479.74	423.02
24.560	730.00	.00	.00	728.80	3650.00	742.74	.00	743.40	30.60	7.41	880.97	659.83
24.560	730.00	.00	.00	728.80	3650.00	742.74	.00	743.40	30.59	7.41	881.13	659.92
24.560	730.00	.00	.00	728.80	4580.00	744.50	.00	744.90	18.78	6.34	1441.77	1056.84
24.560	730.00	.00	.00	728.80	3160.00	741.89	.00	742.62	34.40	7.50	664.87	538.79
24.560	730.00	.00	.00	728.80	1990.00	739.51	.00	740.14	36.06	6.60	363.96	331.38
24.590	30.00	.00	.00	728.80	3650.00	743.48	.00	743.61	8.56	4.07	2200.26	1247.77
24.590	30.00	.00	.00	728.80	3650.00	743.48	.00	743.61	8.56	4.07	2200.47	1247.91
24.590	30.00	.00	.00	728.80	4580.00	744.94	.00	745.02	5.54	3.51	3162.50	1945.65
24.590	30.00	.00	.00	728.80	3160.00	742.67	.00	742.85	11.14	4.46	1713.34	946.66
24.590	30.00	.00	.00	728.80	1990.00	739.75	.00	740.27	30.46	6.17	483.03	360.54

14112 G.a.

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	01K
1													
2	24.620	30.00	.00	.00	729.10	3650.00	743.50	.00	743.62	3.89	3.05	1760.62	1849.51
3	24.620	30.00	.00	.00	729.10	3650.00	743.50	.00	743.62	3.89	3.05	1760.77	1849.65
4	24.620	30.00	.00	.00	729.10	4580.00	744.93	.00	745.05	3.31	3.04	2428.07	2517.18
5	24.620	30.00	.00	.00	729.10	3160.00	742.75	.00	742.88	4.08	2.97	1435.12	1565.22
6	24.620	30.00	.00	.00	729.10	1990.00	740.32	.00	740.43	4.48	2.62	780.61	940.31
7													
8	24.640	10.00	739.10	739.00	729.10	3650.00	743.57	.00	743.69	3.77	3.01	1792.95	1879.11
9	24.640	10.00	739.10	739.00	729.10	3650.00	743.57	.00	743.69	3.77	3.01	1793.10	1879.24
10	24.640	10.00	739.10	739.00	729.10	4580.00	745.01	.00	745.12	3.22	3.01	2462.19	2554.22
11	24.640	10.00	739.10	739.00	729.10	3160.00	742.85	.00	742.97	3.90	2.93	1475.66	1600.39
12	24.640	10.00	739.10	739.00	729.10	1990.00	740.53	.00	740.63	4.11	2.55	813.80	981.56
13													
14	24.670	30.00	.00	.00	728.80	3650.00	743.43	.00	743.88	21.04	6.37	1088.30	795.72
15	24.670	30.00	.00	.00	728.80	3650.00	743.43	.00	743.88	21.04	6.37	1088.41	795.79
16	24.670	30.00	.00	.00	728.80	4580.00	744.92	.00	745.24	15.14	5.80	1600.29	1176.89
17	24.670	30.00	.00	.00	728.80	3160.00	742.67	.00	743.19	23.69	6.50	862.21	649.29
18	24.670	30.00	.00	.00	728.80	1990.00	740.36	.00	740.86	25.92	5.93	435.93	390.90
19													
20	24.710	40.00	.00	.00	728.80	3650.00	743.61	.00	743.98	18.00	5.94	1238.40	860.31
21	24.710	40.00	.00	.00	728.80	3650.00	743.61	.00	743.98	18.00	5.94	1238.51	860.39
22	24.710	40.00	.00	.00	728.80	4580.00	745.06	.00	745.31	12.88	5.38	1812.86	1276.37
23	24.710	40.00	.00	.00	728.80	3160.00	742.85	.00	743.30	20.82	6.15	977.89	692.55
24	24.710	40.00	.00	.00	728.80	1990.00	740.48	.00	740.96	24.65	5.83	449.67	400.78
25													
26	24.720	10.00	.00	.00	732.30	3650.00	743.99	.00	744.07	7.27	2.64	1981.03	1353.54
27	24.720	10.00	.00	.00	732.30	3650.00	743.99	.00	744.07	7.27	2.64	1981.14	1353.63
28	24.720	10.00	.00	.00	732.30	4580.00	745.30	.00	745.37	5.80	2.59	2550.25	1901.67
29	24.720	10.00	.00	.00	732.30	3160.00	743.33	.00	743.42	7.90	2.65	1697.45	1124.36
30	24.720	10.00	.00	.00	732.30	1990.00	740.95	.00	741.08	13.57	2.98	758.32	540.27
31													
32	24.730	10.00	.00	.00	728.80	3650.00	743.88	.00	744.20	15.40	5.57	1337.77	930.18
33	24.730	10.00	.00	.00	728.80	3650.00	743.88	.00	744.20	15.40	5.57	1337.87	930.25
34	24.730	10.00	.00	.00	728.80	4580.00	745.23	.00	745.46	11.78	5.19	1886.21	1334.35
35	24.730	10.00	.00	.00	728.80	3160.00	743.20	.00	743.56	16.98	5.66	1099.35	766.93
36	24.730	10.00	.00	.00	728.80	1990.00	740.82	.00	741.25	21.52	5.56	490.82	428.97
37													
38	25.270	540.00	.00	.00	728.60	3650.00	744.66	.00	745.07	15.03	5.65	895.22	941.43
39	25.270	540.00	.00	.00	728.60	3650.00	744.66	.00	745.07	15.03	5.65	895.24	941.45
40	25.270	540.00	.00	.00	728.60	4580.00	745.85	.00	746.35	17.17	6.36	1024.12	1105.25
41	25.270	540.00	.00	.00	728.60	3160.00	744.03	.00	744.38	13.46	5.19	833.09	861.47
42	25.270	540.00	.00	.00	728.60	1990.00	741.87	.00	742.10	10.40	4.07	636.79	616.95
43													
44	25.320	50.00	.00	.00	728.60	3650.00	744.74	.00	745.14	14.72	5.61	902.99	951.40
45	25.320	50.00	.00	.00	728.60	3650.00	744.74	.00	745.14	14.72	5.61	903.00	951.42
46	25.320	50.00	.00	.00	728.60	4580.00	745.95	.00	746.44	16.74	6.31	1035.56	1119.33
47	25.320	50.00	.00	.00	728.60	3160.00	744.11	.00	744.45	13.16	5.15	840.47	870.92
48	25.320	50.00	.00	.00	728.60	1990.00	741.93	.00	742.15	10.21	4.05	641.50	622.65
49													
50	25.330	10.00	745.00	749.00	729.90	3650.00	744.74	.00	745.17	13.70	5.23	699.59	986.30
51	25.330	10.00	745.00	749.00	729.90	3650.00	744.75	.00	745.17	13.69	5.23	699.60	986.32
52	25.330	10.00	745.00	749.00	729.90	4580.00	745.96	.00	746.47	15.01	5.76	916.52	1182.00
53	25.330	10.00	745.00	749.00	729.90	3160.00	744.11	.00	744.47	12.32	4.82	655.56	900.23
54	25.330	10.00	745.00	749.00	729.90	1990.00	741.93	.00	742.16	9.96	3.86	515.18	630.46
55													
56													
57													

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	01K
25.380	57.00	745.00	749.00	729.90	3650.00	744.83	.00	745.25	13.42	5.19	706.66	996.53
25.380	57.00	745.00	749.00	729.90	3650.00	744.83	.00	745.25	13.41	5.19	706.67	996.55
25.380	57.00	745.00	749.00	729.90	4580.00	746.06	.00	746.55	14.62	5.70	937.13	1197.79
25.380	57.00	745.00	749.00	729.90	3160.00	744.18	.00	744.54	12.08	4.79	659.96	909.08
25.380	57.00	745.00	749.00	729.90	1990.00	741.99	.00	742.22	9.78	3.84	518.40	636.33
25.390	10.00	.00	.00	728.60	3650.00	744.94	.00	745.29	18.16	5.28	923.99	856.57
25.390	10.00	.00	.00	728.60	3650.00	744.94	.00	745.29	18.16	5.28	924.01	856.59
25.390	10.00	.00	.00	728.60	4580.00	746.17	.00	746.59	20.47	5.92	1062.61	1012.39
25.390	10.00	.00	.00	728.60	3160.00	744.27	.00	744.57	16.46	4.88	856.51	778.84
25.390	10.00	.00	.00	728.60	1990.00	742.04	.00	742.24	13.09	3.88	651.41	550.04
25.440	50.00	.00	.00	728.60	3650.00	745.04	.00	745.38	17.72	5.24	933.24	867.16
25.440	50.00	.00	.00	728.60	3650.00	745.04	.00	745.38	17.72	5.24	933.26	867.18
25.440	50.00	.00	.00	728.60	4580.00	746.28	.00	746.70	19.86	5.85	1077.40	1027.70
25.440	50.00	.00	.00	728.60	3160.00	744.36	.00	744.65	16.09	4.84	864.31	787.84
25.440	50.00	.00	.00	728.60	1990.00	742.11	.00	742.31	12.82	3.85	656.81	555.86
25.730	290.00	.00	.00	731.60	3650.00	745.58	.00	745.82	13.54	4.46	1292.35	991.79
25.730	290.00	.00	.00	731.60	3650.00	745.58	.00	745.82	13.54	4.46	1292.38	991.81
25.730	290.00	.00	.00	731.60	4580.00	746.91	.00	747.17	13.64	4.76	1625.35	1240.26
25.730	290.00	.00	.00	731.60	3160.00	744.84	.00	745.07	13.24	4.25	1108.10	868.55
25.730	290.00	.00	.00	731.60	1990.00	742.48	.00	742.66	12.53	3.61	638.72	562.15
25.810	80.00	.00	.00	732.50	3650.00	745.62	.00	745.98	11.40	4.80	824.73	1081.00
25.810	80.00	.00	.00	732.50	3650.00	745.62	.00	745.98	11.40	4.80	824.75	1081.02
25.810	80.00	.00	.00	732.50	4580.00	746.95	.00	747.34	11.94	5.16	1142.68	1325.56
25.810	80.00	.00	.00	732.50	3160.00	744.89	.00	745.20	10.46	4.46	714.46	977.09
25.810	80.00	.00	.00	732.50	1990.00	742.55	.00	742.75	8.36	3.55	561.11	688.28
25.860	52.00	744.60	741.80	732.50	3650.00	746.14	.00	746.46	9.75	4.53	934.65	1168.82
25.860	52.00	744.60	741.80	732.50	3650.00	746.14	.00	746.46	9.75	4.53	934.67	1168.83
25.860	52.00	744.60	741.80	732.50	4580.00	747.27	.00	747.62	10.72	4.95	1239.19	1399.12
25.860	52.00	744.60	741.80	732.50	3160.00	745.41	.00	745.69	9.09	4.25	785.71	1048.12
25.860	52.00	744.60	741.80	732.50	1990.00	742.72	.00	742.91	7.90	3.48	571.60	707.86
25.890	30.00	.00	.00	732.10	3650.00	746.25	.00	746.52	20.81	4.91	981.98	800.14
25.890	30.00	.00	.00	732.10	3650.00	746.25	.00	746.52	20.81	4.91	982.00	800.15
25.890	30.00	.00	.00	732.10	4580.00	747.40	.00	747.69	21.54	5.28	1240.93	986.92
25.890	30.00	.00	.00	732.10	3160.00	745.49	.00	745.74	20.58	4.70	871.28	696.64
25.890	30.00	.00	.00	732.10	1990.00	742.75	.00	742.97	24.20	4.35	588.01	404.54
26.600	710.00	.00	.00	732.90	3650.00	747.84	.00	748.36	36.12	6.49	1102.32	607.29
26.600	710.00	.00	.00	732.90	3650.00	747.84	.00	748.36	36.12	6.49	1102.34	607.30
26.600	710.00	.00	.00	732.90	4580.00	748.96	.00	749.39	31.77	6.41	1768.95	812.51
26.600	710.00	.00	.00	732.90	3160.00	747.09	.00	747.64	37.51	6.38	712.17	515.97
26.600	710.00	.00	.00	732.90	1990.00	744.55	.00	744.95	34.58	5.30	429.91	338.41
26.680	80.00	.00	.00	734.50	3650.00	748.20	.00	748.57	13.52	5.04	1032.36	992.69
26.680	80.00	.00	.00	734.50	3650.00	748.20	.00	748.57	13.52	5.04	1032.37	992.70
26.680	80.00	.00	.00	734.50	4580.00	749.26	.00	749.57	12.06	5.01	1681.61	1318.74
26.680	80.00	.00	.00	734.50	3160.00	747.49	.00	747.86	13.42	4.88	738.85	862.72
26.680	80.00	.00	.00	734.50	1990.00	744.89	.00	745.14	11.93	4.05	491.51	576.22

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	10K
26.730	56.00	746.50	744.80	734.50	3650.00	748.23	.00	748.59	13.33	5.01	1048.79	999.82
26.730	56.00	746.50	744.80	734.50	3650.00	748.23	.00	748.59	13.33	5.01	1048.80	999.82
26.730	56.00	746.50	744.80	734.50	4580.00	749.26	.00	749.57	12.05	5.01	1682.88	1319.47
26.730	56.00	746.50	744.80	734.50	3160.00	747.71	.00	748.05	12.40	4.74	814.64	897.47
26.730	56.00	746.50	744.80	734.50	1990.00	745.03	.00	745.27	11.38	3.99	499.27	590.01
26.800	70.00	.00	.00	734.40	3650.00	748.70	.00	748.77	6.71	2.73	2987.56	1408.93
26.800	70.00	.00	.00	734.40	3650.00	748.70	.00	748.77	6.71	2.73	2987.58	1408.94
26.800	70.00	.00	.00	734.40	4580.00	749.67	.00	749.73	6.78	2.87	3704.73	1758.32
26.800	70.00	.00	.00	734.40	3160.00	748.15	.00	748.21	6.60	2.63	2586.38	1229.64
26.800	70.00	.00	.00	734.40	1990.00	745.31	.00	745.41	11.08	2.90	915.24	597.71
27.390	590.00	.00	.00	733.70	3650.00	749.08	.00	749.23	9.64	3.96	2195.93	1175.66
27.390	590.00	.00	.00	733.70	3650.00	749.08	.00	749.23	9.64	3.96	2195.95	1175.67
27.390	590.00	.00	.00	733.70	4580.00	750.04	.00	750.18	9.31	4.06	3313.69	1500.98
27.390	590.00	.00	.00	733.70	3160.00	748.52	.00	748.67	9.40	3.81	1584.11	1030.63
27.390	590.00	.00	.00	733.70	1990.00	745.88	.00	746.02	10.24	3.46	749.01	621.88
27.460	70.00	.00	.00	732.90	3650.00	749.10	.00	749.32	6.09	3.81	1229.01	1478.75
27.460	70.00	.00	.00	732.90	3650.00	749.10	.00	749.32	6.09	3.81	1229.01	1478.75
27.460	70.00	.00	.00	732.90	4580.00	750.04	.00	750.29	7.08	4.24	1567.20	1721.11
27.460	70.00	.00	.00	732.90	3160.00	748.55	.00	748.74	5.37	3.52	1074.18	1364.01
27.460	70.00	.00	.00	732.90	1990.00	745.95	.00	746.07	4.20	2.82	705.67	970.62
27.510	55.00	746.70	745.70	732.90	3650.00	749.17	.00	749.42	6.73	4.02	908.43	1406.84
27.510	55.00	746.70	745.70	732.90	3650.00	749.17	.00	749.42	6.73	4.02	908.43	1406.84
27.510	55.00	746.70	745.70	732.90	4580.00	750.10	.00	750.34	6.94	4.21	1590.20	1738.32
27.510	55.00	746.70	745.70	732.90	3160.00	748.65	.00	748.85	5.61	3.61	875.69	1333.71
27.510	55.00	746.70	745.70	732.90	1990.00	746.04	.00	746.16	4.11	2.80	710.99	981.51
27.560	50.00	.00	.00	733.00	3650.00	749.42	.00	749.50	4.60	2.83	1887.48	1702.14
27.560	50.00	.00	.00	733.00	3650.00	749.42	.00	749.50	4.60	2.83	1887.49	1702.15
27.560	50.00	.00	.00	733.00	4580.00	750.32	.00	750.42	5.29	3.16	2217.03	1991.64
27.560	50.00	.00	.00	733.00	3160.00	748.84	.00	748.91	4.23	2.65	1698.40	1536.85
27.560	50.00	.00	.00	733.00	1990.00	746.13	.00	746.20	4.56	2.40	1088.32	931.93
27.710	150.00	.00	.00	733.50	3650.00	749.48	.00	749.57	5.37	3.00	1741.62	1574.48
27.710	150.00	.00	.00	733.50	3650.00	749.48	.00	749.57	5.37	3.00	1741.62	1574.48
27.710	150.00	.00	.00	733.50	4580.00	750.39	.00	750.50	6.13	3.34	2055.07	1849.22
27.710	150.00	.00	.00	733.50	3160.00	748.90	.00	748.98	4.96	2.81	1563.43	1419.08
27.710	150.00	.00	.00	733.50	1990.00	746.19	.00	746.27	5.42	2.56	1019.16	854.84
27.970	260.00	.00	.00	734.10	3650.00	749.61	.00	749.82	10.42	4.10	1070.50	1130.66
27.970	260.00	.00	.00	734.10	3650.00	749.61	.00	749.82	10.42	4.10	1070.50	1130.66
27.970	260.00	.00	.00	734.10	4580.00	750.53	.00	750.81	12.88	4.75	1169.67	1276.15
27.970	260.00	.00	.00	734.10	3160.00	749.02	.00	749.20	9.19	3.74	1009.65	1042.63
27.970	260.00	.00	.00	734.10	1990.00	746.34	.00	746.47	8.41	3.10	755.50	686.26
28.020	310.00	.00	.00	734.30	3650.00	749.85	.00	750.11	7.21	4.10	889.20	1359.05
28.020	310.00	.00	.00	734.30	3650.00	749.85	.00	750.11	7.21	4.10	889.20	1359.06
28.020	310.00	.00	.00	734.30	4580.00	750.83	.00	751.19	9.65	4.82	949.85	1474.40
28.020	310.00	.00	.00	734.30	3160.00	749.23	.00	749.45	6.03	3.71	851.23	1287.31
28.020	310.00	.00	.00	734.30	1990.00	746.52	.00	746.66	4.49	2.92	682.32	939.46

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	01K
28.040	14.00	749.00	746.40	734.30	3650.00	750.61	.00	750.65	.84	1.64	2229.07	3974.81
28.040	14.00	749.00	746.40	734.30	3650.00	750.61	.00	750.65	.84	1.64	2229.07	3974.81
28.040	14.00	749.00	746.40	734.30	4580.00	751.60	.00	751.66	1.11	1.93	2375.82	4355.89
28.040	14.00	749.00	746.40	734.30	3160.00	749.97	.00	750.00	.72	1.48	2134.18	3732.83
28.040	14.00	749.00	746.40	734.30	1990.00	746.91	.00	746.94	.59	1.18	1682.43	2599.42
28.090	50.00	.00	.00	733.50	3650.00	750.56	.00	750.72	8.88	3.57	1365.88	1224.77
28.090	50.00	.00	.00	733.50	3650.00	750.56	.00	750.72	8.88	3.57	1365.89	1224.77
28.090	50.00	.00	.00	733.50	4580.00	751.54	.00	751.74	10.39	4.01	1545.67	1421.01
28.090	50.00	.00	.00	733.50	3160.00	749.92	.00	750.06	8.14	3.33	1250.54	1107.70
28.090	50.00	.00	.00	733.50	1990.00	746.87	.00	746.99	8.54	2.96	756.25	680.94
28.230	140.00	.00	.00	733.50	3650.00	750.66	.00	750.83	7.19	3.71	1448.52	1360.81
28.230	140.00	.00	.00	733.50	3650.00	750.66	.00	750.83	7.19	3.71	1448.52	1360.81
28.230	140.00	.00	.00	733.50	4580.00	751.66	.00	751.86	8.24	4.13	1693.16	1595.19
28.230	140.00	.00	.00	733.50	3160.00	750.02	.00	750.17	6.63	3.46	1303.52	1227.18
28.230	140.00	.00	.00	733.50	1990.00	746.98	.00	747.11	6.82	3.04	767.35	762.20
28.570	340.00	.00	.00	732.40	3650.00	750.92	.00	751.05	5.96	3.47	1844.61	1494.81
28.570	340.00	.00	.00	732.40	3650.00	750.92	.00	751.05	5.96	3.47	1844.62	1494.81
28.570	340.00	.00	.00	732.40	4580.00	751.95	.00	752.11	6.84	3.86	2182.48	1750.94
28.570	340.00	.00	.00	732.40	3160.00	750.25	.00	750.37	5.51	3.25	1629.59	1345.89
28.570	340.00	.00	.00	732.40	1990.00	747.21	.00	747.32	5.58	2.87	864.47	842.81
28.610	40.00	.00	.00	735.80	3650.00	750.89	.00	751.13	7.18	4.10	1233.02	1361.93
28.610	40.00	.00	.00	735.80	3650.00	750.89	.00	751.13	7.18	4.10	1233.02	1361.93
28.610	40.00	.00	.00	735.80	4580.00	751.93	.00	752.19	7.74	4.47	1553.62	1645.85
28.610	40.00	.00	.00	735.80	3160.00	750.22	.00	750.45	6.79	3.88	1048.79	1212.63
28.610	40.00	.00	.00	735.80	1990.00	747.20	.00	747.37	6.41	3.33	597.99	785.91
28.640	30.00	749.10	749.00	735.80	3650.00	750.90	.00	751.14	7.14	4.10	1237.42	1365.73
28.640	30.00	749.10	749.00	735.80	3650.00	750.90	.00	751.14	7.14	4.10	1237.42	1365.73
28.640	30.00	749.10	749.00	735.80	4580.00	751.93	.00	752.19	7.74	4.47	1553.81	1646.03
28.640	30.00	749.10	749.00	735.80	3160.00	750.26	.00	750.48	6.70	3.86	1059.53	1221.00
28.640	30.00	749.10	749.00	735.80	1990.00	747.22	.00	747.39	6.38	3.32	599.13	788.15
28.690	50.00	.00	.00	733.30	3650.00	751.04	.00	751.19	3.89	3.61	1908.02	1850.51
28.690	50.00	.00	.00	733.30	3650.00	751.04	.00	751.19	3.89	3.61	1908.03	1850.52
28.690	50.00	.00	.00	733.30	4580.00	752.06	.00	752.25	4.50	4.04	2344.67	2159.99
28.690	50.00	.00	.00	733.30	3160.00	750.39	.00	750.53	3.55	3.36	1652.82	1676.82
28.690	50.00	.00	.00	733.30	1990.00	747.32	.00	747.43	3.53	2.90	885.36	1059.28
29.270	580.00	.00	.00	734.80	3650.00	751.29	.00	751.31	1.34	2.12	3525.19	3153.06
29.270	580.00	.00	.00	734.80	3650.00	751.29	.00	751.32	1.41	2.17	3319.83	3073.03
29.270	580.00	.00	.00	734.80	4580.00	752.35	.00	752.38	1.44	2.29	4055.95	3817.67
29.270	580.00	.00	.00	734.80	3160.00	750.62	.00	750.65	1.31	2.03	3196.36	2764.61
29.270	580.00	.00	.00	734.80	1990.00	747.55	.00	747.59	2.21	2.28	1768.91	1339.67
30.290	1020.00	.00	.00	732.80	3650.00	751.38	.00	751.39	.51	1.30	5616.18	5134.31
30.290	1020.00	.00	.00	732.80	3650.00	751.39	.00	751.40	.55	1.36	5231.91	4931.64
30.290	1020.00	.00	.00	732.80	4580.00	752.45	.00	752.46	.51	1.36	6560.42	6433.97
30.290	1020.00	.00	.00	732.80	3160.00	750.72	.00	750.73	.52	1.28	5035.46	4402.20
30.290	1020.00	.00	.00	732.80	1990.00	747.72	.00	747.74	1.03	1.59	2668.41	1956.66

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	.01K
31.150	860.00	.00	.00	736.20	3650.00	751.04	.00	751.72	17.76	6.97	674.66	866.03
31.150	860.00	.00	.00	736.20	3650.00	751.04	.00	751.74	18.09	7.04	638.74	858.14
31.150	860.00	.00	.00	736.20	4580.00	751.96	.00	752.85	21.76	8.05	769.28	981.77
31.150	860.00	.00	.00	736.20	3160.00	750.45	.00	751.02	15.67	6.36	622.42	798.39
31.150	860.00	.00	.00	736.20	1990.00	747.68	.00	748.06	14.15	5.19	454.21	529.01
31.200	50.00	.00	.00	736.20	3650.00	751.11	.00	751.80	13.28	6.99	681.46	1001.43
31.200	50.00	.00	.00	736.20	3650.00	751.14	.00	751.82	13.18	6.97	684.28	1005.44
31.200	50.00	.00	.00	736.20	4580.00	752.05	.00	752.95	16.26	8.07	778.92	1135.66
31.200	50.00	.00	.00	736.20	3160.00	750.51	.00	751.09	11.72	6.38	627.77	923.00
31.200	50.00	.00	.00	736.20	1990.00	747.74	.00	748.13	10.52	5.19	457.43	613.46
31.230	940.00	767.00	759.00	736.90	3650.00	752.57	.00	752.86	7.81	4.28	852.94	1305.66
31.230	940.00	767.00	759.00	736.90	3650.00	752.59	.00	752.88	7.77	4.27	854.68	1309.47
31.230	940.00	767.00	759.00	736.90	4580.00	753.89	.00	754.26	9.67	4.93	928.24	1473.16
31.230	940.00	767.00	759.00	736.90	3160.00	751.78	.00	752.02	6.83	3.91	808.57	1209.16
31.230	940.00	767.00	759.00	736.90	1990.00	748.74	.00	748.89	5.48	3.13	634.96	849.86
31.260	27.00	767.00	759.00	736.90	3650.00	752.60	.00	752.88	7.76	4.27	855.07	1310.33
31.260	27.00	767.00	759.00	736.90	3650.00	752.62	.00	752.90	7.73	4.26	856.18	1312.76
31.260	27.00	767.00	759.00	736.90	4580.00	753.91	.00	754.29	9.61	4.92	930.23	1477.65
31.260	27.00	767.00	759.00	736.90	3160.00	751.80	.00	752.03	6.81	3.90	809.58	1211.33
31.260	27.00	767.00	759.00	736.90	1990.00	748.76	.00	748.91	5.45	3.13	636.20	852.30
31.280	20.00	.00	.00	736.20	3650.00	752.50	.00	753.01	11.97	6.11	831.59	1055.19
31.280	20.00	.00	.00	736.20	3650.00	752.52	.00	753.03	11.90	6.10	833.95	1057.94
31.280	20.00	.00	.00	736.20	4580.00	753.83	.00	754.42	13.14	6.76	1014.17	1263.43
31.280	20.00	.00	.00	736.20	3160.00	751.71	.00	752.16	11.09	5.68	741.74	948.73
31.280	20.00	.00	.00	736.20	1990.00	748.69	.00	749.00	10.28	4.70	509.95	620.78
31.300	20.00	.00	.00	736.20	3650.00	752.53	.00	753.03	11.90	6.10	833.97	1057.96
31.300	20.00	.00	.00	736.20	3650.00	752.55	.00	753.05	11.84	6.09	836.32	1060.70
31.300	20.00	.00	.00	736.20	4580.00	753.86	.00	754.45	13.06	6.75	1017.85	1267.40
31.300	20.00	.00	.00	736.20	3160.00	751.74	.00	752.18	11.04	5.68	743.64	951.03
31.300	20.00	.00	.00	736.20	1990.00	748.71	.00	749.03	10.23	4.69	510.83	622.26
31.320	20.00	.00	.00	737.40	3650.00	752.76	.00	753.10	10.15	4.72	772.53	1145.87
31.320	20.00	.00	.00	737.40	3650.00	752.77	.00	753.12	10.11	4.72	773.45	1147.82
31.320	20.00	.00	.00	737.40	4580.00	754.05	.00	754.51	12.61	5.45	839.85	1289.81
31.320	20.00	.00	.00	737.40	3160.00	751.95	.00	752.24	8.91	4.32	730.79	1058.57
31.320	20.00	.00	.00	737.40	1990.00	748.89	.00	749.08	7.20	3.48	571.58	741.40
31.380	51.00	754.60	752.40	737.40	3650.00	752.93	.00	753.27	9.82	4.67	781.44	1164.71
31.380	51.00	754.60	752.40	737.40	3650.00	752.95	.00	753.28	9.79	4.67	782.40	1166.75
31.380	51.00	754.60	752.40	737.40	4580.00	754.41	.00	754.85	11.86	5.34	858.43	1330.15
31.380	51.00	754.60	752.40	737.40	3160.00	752.00	.00	752.29	8.83	4.31	733.27	1063.71
31.380	51.00	754.60	752.40	737.40	1990.00	748.93	.00	749.12	7.13	3.47	573.57	745.18
31.430	50.00	.00	.00	734.70	3650.00	752.99	.00	753.32	12.25	5.33	977.04	1042.92
31.430	50.00	.00	.00	734.70	3650.00	753.01	.00	753.34	12.19	5.32	979.21	1045.42
31.430	50.00	.00	.00	734.70	4580.00	754.56	.00	754.93	12.86	5.79	1235.66	1277.25
31.430	50.00	.00	.00	734.70	3160.00	752.05	.00	752.35	11.73	5.03	880.49	922.48
31.430	50.00	.00	.00	734.70	1990.00	748.95	.00	749.19	11.31	4.29	618.02	591.74

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
31.980	550.00	.00	.00	734.60	3650.00	753.53	.00	753.57	1.93	2.15	2926.63	2629.39
31.980	550.00	.00	.00	734.60	3650.00	753.55	.00	753.59	2.00	2.19	2776.72	2578.70
31.980	550.00	.00	.00	734.60	4580.00	755.14	.00	755.18	1.90	2.27	3499.61	3319.44
31.980	550.00	.00	.00	734.60	3160.00	752.55	.00	752.59	1.96	2.08	2601.70	2256.63
31.980	550.00	.00	.00	734.60	1990.00	749.42	.00	749.45	2.43	2.01	1664.16	1276.46
32.780	800.00	.00	.00	737.00	3650.00	753.65	.00	753.66	.85	1.35	5231.63	3950.50
32.780	800.00	.00	.00	737.00	3650.00	753.67	.00	753.68	.87	1.37	5101.93	3910.44
32.780	800.00	.00	.00	737.00	4580.00	755.26	.00	755.27	.83	1.43	6110.31	5015.11
32.780	800.00	.00	.00	737.00	3160.00	752.67	.00	752.68	.88	1.32	4708.76	3362.32
32.780	800.00	.00	.00	737.00	1990.00	749.57	.00	749.58	1.25	1.34	3088.92	1779.38
33.600	820.00	.00	.00	737.40	3650.00	753.72	.00	753.73	1.10	1.55	4285.21	3479.31
33.600	820.00	.00	.00	737.40	3650.00	753.74	.00	753.76	1.16	1.59	3930.70	3389.99
33.600	820.00	.00	.00	737.40	4580.00	755.33	.00	755.34	1.06	1.62	5181.90	4440.96
33.600	820.00	.00	.00	737.40	3160.00	752.74	.00	752.76	1.13	1.50	3763.99	2974.60
33.600	820.00	.00	.00	737.40	1990.00	749.66	.00	749.68	1.31	1.39	2534.69	1736.02
34.150	550.00	.00	.00	737.00	3650.00	753.77	.00	753.77	.53	1.08	7458.74	5034.32
34.150	550.00	.00	.00	737.00	3650.00	753.80	.00	753.80	.54	1.09	7163.18	4967.71
34.150	550.00	.00	.00	737.00	4580.00	755.38	.00	755.38	.50	1.13	8819.35	6455.10
34.150	550.00	.00	.00	737.00	3160.00	752.79	.00	752.80	.55	1.06	6652.73	4257.11
34.150	550.00	.00	.00	737.00	1990.00	749.72	.00	749.73	.79	1.09	4244.41	2237.59
35.190	1040.00	.00	.00	736.90	3650.00	753.83	.00	753.84	.84	1.33	6052.25	3976.02
35.190	1040.00	.00	.00	736.90	3650.00	753.86	.00	753.87	.86	1.35	5820.27	3933.83
35.190	1040.00	.00	.00	736.90	4580.00	755.43	.00	755.44	.79	1.38	7221.45	5141.15
35.190	1040.00	.00	.00	736.90	3160.00	752.86	.00	752.87	.89	1.32	5368.58	3342.38
35.190	1040.00	.00	.00	736.90	1990.00	749.82	.00	749.83	1.37	1.40	3329.45	1700.32
36.270	1080.00	.00	.00	737.10	3650.00	753.94	.00	754.02	3.76	2.79	2121.02	1883.06
36.270	1080.00	.00	.00	737.10	3650.00	753.97	.00	754.05	3.72	2.79	2127.87	1891.80
36.270	1080.00	.00	.00	737.10	4580.00	755.53	.00	755.63	3.94	3.06	2439.43	2306.07
36.270	1080.00	.00	.00	737.10	3160.00	752.98	.00	753.05	3.69	2.65	1929.36	1645.23
36.270	1080.00	.00	.00	737.10	1990.00	750.01	.00	750.07	3.99	2.37	1335.25	996.05
36.320	50.00	.00	.00	737.10	3650.00	753.94	.00	754.05	2.30	3.06	1817.74	2406.98
36.320	50.00	.00	.00	737.10	3650.00	753.98	.00	754.08	2.28	3.05	1823.21	2417.54
36.320	50.00	.00	.00	737.10	4580.00	755.53	.00	755.66	2.47	3.39	2071.58	2916.02
36.320	50.00	.00	.00	737.10	3160.00	752.99	.00	753.08	2.22	2.89	1664.41	2118.66
36.320	50.00	.00	.00	737.10	1990.00	750.02	.00	750.09	2.26	2.50	1189.43	1324.42
36.390	70.00	763.00	759.50	737.30	3650.00	753.96	.00	754.07	3.08	2.67	1369.30	2079.16
36.390	70.00	763.00	759.50	737.30	3650.00	753.99	.00	754.10	3.05	2.66	1373.84	2088.60
36.390	70.00	763.00	759.50	737.30	4580.00	755.55	.00	755.68	3.23	2.88	1589.44	2549.24
36.390	70.00	763.00	759.50	737.30	3160.00	753.00	.00	753.10	3.00	2.54	1243.83	1822.99
36.390	70.00	763.00	759.50	737.30	1990.00	750.04	.00	750.11	3.00	2.24	888.90	1148.05
36.440	47.00	763.00	759.50	737.30	3650.00	753.97	.00	754.08	3.08	2.66	1370.20	2081.04
36.440	47.00	763.00	759.50	737.30	3650.00	754.01	.00	754.12	3.05	2.66	1374.74	2090.47
36.440	47.00	763.00	759.50	737.30	4580.00	755.56	.00	755.69	3.22	2.88	1590.65	2552.07
36.440	47.00	763.00	759.50	737.30	3160.00	753.01	.00	753.11	3.00	2.54	1244.63	1824.60
36.440	47.00	763.00	759.50	737.30	1990.00	750.05	.00	750.13	3.00	2.24	889.67	1149.42

14112 G.B.

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1.0K*S	VCH	AREA	.01K
36.500	60.00	.00	.00	737.10	3650.00	753.99	.00	754.11	4.91	3.20	1822.74	1646.44
36.500	60.00	.00	.00	737.10	3650.00	754.03	.00	754.14	4.87	3.19	1829.20	1654.08
36.500	60.00	.00	.00	737.10	4580.00	755.59	.00	755.72	5.11	3.48	2132.58	2025.52
36.500	60.00	.00	.00	737.10	3160.00	753.03	.00	753.14	4.84	3.04	1640.75	1436.17
36.500	60.00	.00	.00	737.10	1990.00	750.07	.00	750.16	5.17	2.70	1098.76	874.91
36.520	20.00	.00	.00	737.10	3650.00	754.02	.00	754.12	4.49	3.06	1957.77	1721.94
36.520	20.00	.00	.00	737.10	3650.00	754.05	.00	754.15	4.45	3.05	1964.89	1730.23
36.520	20.00	.00	.00	737.10	4580.00	755.62	.00	755.73	4.58	3.30	2303.24	2140.37
36.520	20.00	.00	.00	737.10	3160.00	753.06	.00	753.15	4.48	2.93	1756.04	1493.36
36.520	20.00	.00	.00	737.10	1990.00	750.08	.00	750.17	5.00	2.66	1152.51	890.23

141[2 G.B.

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN TOWNSHIP

3) WATERCOURSE: WOLF CREEK

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

THIS RUN EXECUTED 2 JAN 88 12:27:43

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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
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ENCROACHED

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C
T1              ADRIAN TOWNSHIP, MICHIGAN
T2              LIMITED DETAIL FIS, WOLF CREEK
T3              100-YEAR DISCHARGE, EXISTING CONDITION
```

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0.	0.000000	0.00	0.0	0.	763.000	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 VARIABLE CODES FOR SUMMARY PRINTOUT

	110.000	150.000	200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.060	0.060	0.040	0.300	0.500	0.000	0.000	0.000	0.000	0.000
QT	2.000	1840.000	1840.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FIELD SECTION 1 MOVED DOWNSTREAM, STARTING WATER SURFACE
FROM DAM SAFETY REPORT PLUS .5 FT

X1	5000.000	55.000	525.000	591.000	0.000	0.000	0.000	0.000	-7.040	0.000
GR	829.200	0.000	829.800	25.000	830.300	50.000	830.700	75.000	830.400	100.000
GR	830.200	125.000	827.400	150.000	822.600	175.000	818.800	200.000	812.900	225.000
GR	808.300	250.000	803.900	275.000	800.300	300.000	795.100	325.000	792.900	350.000
GR	788.200	375.000	784.800	400.000	782.000	425.000	780.600	450.000	779.800	475.000
GR	778.300	500.000	777.400	507.000	765.600	525.000	761.900	531.500	761.800	534.500
GR	761.200	540.000	761.200	545.000	761.200	550.000	761.400	555.000	761.300	560.000
GR	761.300	565.000	761.100	568.000	761.800	569.500	762.500	575.000	766.300	591.000
GR	766.300	600.000	766.300	625.000	765.800	650.000	765.100	675.000	764.700	700.000
GR	765.000	725.000	767.400	750.000	768.100	775.000	767.900	800.000	767.400	825.000
GR	766.800	850.000	766.100	875.000	766.400	900.000	766.600	925.000	766.600	950.000
GR	766.700	975.000	767.100	1000.000	767.000	1025.000	767.100	1050.000	766.900	1075.000
X1	6600.000	0.000	0.000	0.000	1300.000	1600.000	1600.000	0.000	2.160	0.000
X1	8200.000	0.000	0.000	0.000	1300.000	1350.000	1600.000	0.000	2.160	0.000
NC	0.030	0.030	0.035	0.500	1.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	4.100	530.000	586.000	0.000	0.000	0.000	0.000	0.000

		FIELD SECTION 1 MOVED DOWNSTREAM								
X1	9810.000	0.000	0.000	0.000	900.000	1340.000	1610.000	0.000	2.160	0.000
ET	0.000	4.100	1.400	200.000	240.000	0.000	0.000	0.000	0.000	0.000
X1	9840.000	13.000	200.000	240.000	30.000	30.000	30.000	0.000	0.000	0.000
GR	780.000	0.000	770.000	145.000	766.300	200.000	761.000	201.000	761.000	201.100
GR	760.600	220.000	762.800	239.000	762.800	239.100	766.300	240.000	765.800	245.000
GR	765.800	290.000	766.800	690.000	770.000	790.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	200.000	240.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE BIRNWICK ROAD								
X1	9841.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-12.000	0.000	780.000	0.000	145.000	770.000	0.000	200.000	770.900	0.000
BT	0.000	201.000	770.900	761.000	201.100	770.900	769.400	239.000	770.900	769.400
BT	0.000	239.100	770.900	762.800	240.000	770.900	0.000	245.000	770.000	0.000
BT	0.000	290.000	770.000	0.000	690.000	770.000	0.000	790.000	770.000	0.000
ET	0.000	4.100	0.000	200.000	240.000	0.000	0.000	0.000	0.000	0.000
		U/S FACE BIRNWICK ROAD								
X1	9859.000	0.000	0.000	0.000	18.000	18.000	18.000	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
NC	0.050	0.080	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	200.000	0.040	240.000	0.080	290.000	0.030	790.000	0.000
ET	0.000	4.100	0.000	200.000	240.000	0.000	0.000	0.000	0.000	0.000
X1	9860.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
NH	4.000	0.050	525.000	0.040	591.000	0.080	700.000	0.030	1075.000	0.000
ET	0.000	4.100	0.000	525.000	591.000	0.000	0.000	0.000	0.000	0.000
X1	9873 000	55.000	525.000	591.000	13.000	13.000	13.000	0.000	-0.470	0.000
GR	829.200	0.000	829.800	25.000	830.300	50.000	830.700	75.000	830.400	100.000
GR	830.200	125.000	827.400	150.000	822.600	175.000	818.800	200.000	812.900	225.000
GR	808.300	250.000	803.900	275.000	800.300	300.000	795.100	325.000	792.900	350.000
GR	788.200	375.000	784.800	400.000	782.000	425.000	780.600	450.000	779.800	475.000
GR	778.300	500.000	777.400	507.000	765.600	525.000	761.900	531.500	761.800	534.500
GR	761.200	540.000	761.200	545.000	761.200	550.000	761.400	555.000	761.300	560.000
GR	761.300	565.000	761.100	568.000	761.800	569.500	762.500	575.000	766.300	591.000
GR	766.300	600.000	766.300	625.000	765.800	650.000	765.100	675.000	764.700	700.000
GR	765.000	725.000	767.400	750.000	768.100	775.000	767.900	800.000	767.400	825.000
GR	766.800	850.000	766.100	875 000	766.400	900.000	766.600	925.000	766.600	950.000
GR	766.700	975.000	767.100	1000.000	767.000	1025.000	767.100	1050.000	766.900	1075.000
NH	4.000	0.050	525.000	0.040	591.000	0.080	700.000	0.030	1075.000	0.000
ET	0.000	0.000	4.100	525.000	940.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION A, FIELD SECTION 1								
X1	10200.000	0.000	0.000	0.000	327.000	327.000	327.000	0.000	0.470	0.000
NC	0.035	0.070	0.045	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	355.000	684.000	355.000	650.000	0.000	0.000	0.000

X1	11130.000	53.000	500.000	539.000	790.000	790.000	930.000	0.000	-0.470	0.000
GR	806.000	0.000	804.400	25.000	801.400	50.000	799.700	69.000	795.200	80.000
GR	789.200	100.000	788.700	125.000	788.400	150.000	787.400	175.000	783.400	200.000
GR	780.300	225.000	777.100	250.000	775.500	275.000	773.500	300.000	770.400	325.000
GR	768.400	350.000	768.300	375.000	768.600	400.000	768.500	425.000	768.200	450.000
GR	767.900	475.000	767.300	500.000	764.200	501.000	764.000	501.500	763.600	505.000
GR	763.200	510.000	763.200	515.000	762 900	520.000	762.900	525.000	763.100	530.000
GR	763.600	533 000	764.200	534.000	766.500	539.000	767.000	550.000	768.300	575.000
GR	768.800	600 000	768.800	625.000	769.000	650.000	768.500	675.000	769.000	700.000
GR	769.000	719.000	772.400	725.000	777.700	750.000	778.800	775.000	777.800	800.000
GR	775.200	825.000	776.500	850.000	777.500	875.000	779.300	900.000	780.300	925.000
GR	781.600	950.000	782.500	975.000	783.300	1000.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	439.000	602.000	439.000	570.000	0.000	0.000	0.000

VALLEY SECTION B, FIELD SECTION 2

X1	11530.000	0.000	0.000	0.000	330.000	330.000	400.000	0.000	0.470	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11730.000	45.000	500.000	554.500	200.000	200.000	200.000	0.000	0.000	0.000
X4	1.000	774.200	487.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	786.800	0.000	784.800	25.000	782.600	50.000	780.500	75.000	778.800	100.000
GR	777.400	125.000	776.400	150.000	775.600	175.000	775.100	200.000	774.800	225.000
GR	774.400	250.000	774.000	325.000	774.000	350.000	774.100	375.000	774.200	400.000
GR	774.200	425.000	774.300	450.000	774.100	462.000	774.200	487.600	768.200	500.000
GR	768.200	500.100	765.000	514.000	764.400	516.000	763.600	518.500	763.400	520.000
GR	763.100	525.000	763.500	530.000	763.600	535.000	763.800	540.000	764.100	545.000
GR	764.400	545.800	766.800	554.500	766.800	554.600	771.700	563.000	773.800	567.300
GR	773.800	567.400	774.200	600.000	774.200	625.000	773.900	650.000	773.700	675.000
GR	773.500	700.000	773.200	725.000	773.000	750.000	772.700	775.000	772.500	800.000
NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000

D/S FACE TIPTON HIGHWAY BRIDGE

X1	11731.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-35.000	0.000	786.800	0.000	25.000	784.800	0.000	50.000	782.600	0.000
BT	0.000	75.000	780.500	0.000	100.000	778.800	0.000	125.000	777.400	0.000
BT	0.000	150.000	776.400	0.000	175.000	775.600	0.000	200.000	774.000	0 000
BT	0.000	225.000	774.800	0.000	250.000	774.400	0.000	325.000	774.000	0.000
BT	0.000	350.000	774.000	0.000	375.000	774.100	0.000	400.000	774.200	0.000
BT	0.000	425.000	774.200	0.000	450 000	774.300	0.000	462.000	774.100	0.000
BT	0.000	487.600	774.500	0.000	487.700	777.200	0.000	500.000	777.200	768.200
BT	0.000	500.100	777.200	771.800	554.500	777.100	771.800	554.600	777.100	766.800
BT	0.000	567.300	777.200	0.000	567.400	774.500	0.000	600.000	774.200	0.000
BT	0.000	625.000	774.200	0.000	650.000	773.900	0.000	675.000	773.700	0.000
BT	0.000	700.000	773.500	0.000	725.000	773.200	0.000	750.000	773.000	0.000
BT	0.000	775.000	772.700	0.000	800.000	772.500	0.000	0.000	0.000	0.000

U/S FACE TIPTON HIGHWAY BRIDGE

X1	11774.000	0.000	0.000	0.000	43.000	43.000	43.000	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

NC	0.080	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11775.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
		FIELD SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 3								
X1	11885.000	27.000	275.000	325.000	110.000	110.000	110.000	0.000	-2.850	0.000
GR	774.800	0.000	774.200	25.000	773.800	50.000	772.600	75.000	772.000	100.000
GR	773.400	125.000	771.700	150 000	770.600	175.000	772.600	200.000	772.800	225.000
GR	773.000	250.000	771.100	275.000	767.900	284.000	766.700	292.500	766.400	293.000
GR	766.200	295.000	766.100	300.000	766.400	305.000	766.500	310.000	766.600	314.000
GR	766.700	314.500	766.500	315.000	773.400	325.000	777.500	350.000	777.500	400.000
GR	776.300	550.000	775.000	675.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.030	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
X1	12920.000	22.000	275.000	325.000	1035.000	1035.000	1035.000	0.000	-1.450	0.000
GR	774.800	0.000	773.800	50.000	772.600	75.000	772.000	100.000	773.400	125.000
GR	771.700	150.000	770.600	175.000	772.600	200.000	772.800	225.000	773.000	250.000
GR	771.100	275.000	767.900	284.000	766.700	292.500	766.400	293.000	766.100	300.000
GR	766.700	314.500	766.500	315.000	773.400	325.000	777.500	350.000	777.800	425.000
GR	777.300	500.000	778.700	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	240.000	360.000	0.000	0.000	0.000	0.000	0.000
		FILED SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 4								
X1	13300.000	0.000	0.000	0.000	380.000	380.000	380.000	0.000	0.510	0.000
ET	0.000	4.100	0.000	500.000	540.000	0.000	0.000	0.000	0.000	0.000
X1	13400.000	55.000	500.000	540.000	100.000	100.000	100.000	0.000	0.000	0.000
GR	779.700	0.000	788.800	25.000	777.900	50.000	777.200	75.000	776.600	100.000
GR	776.100	125.000	775.600	150.000	775.100	175.000	774.900	200.000	774.800	225.000
GR	774.800	250.000	774.700	275.000	774.700	300.000	775.000	325.000	775.300	350.000
GR	775.600	375.000	775.700	400.000	773.000	425.000	773.000	450.000	773.000	470.000
GR	769.800	497.000	769.500	500.000	769.500	500.100	766.500	510.200	766.200	510.300
GR	765.800	511.800	765.700	515.000	765.400	520.000	765.800	525.000	765.800	530.000
GR	766.200	535.000	766.100	540.000	766.100	540.100	775.400	543.000	776.000	570.000
GR	776.000	575.000	776.000	600.000	776.000	625.000	776.000	650.000	776.600	675.000
GR	776.700	700.000	776.900	725.000	777.200	750.000	777.600	775.000	778.000	800.000
GR	778.500	825.000	779.000	850.000	779.800	875.000	780.700	900.000	781.900	925.000
GR	783.200	950.000	784.700	975.000	786.300	1000.000	788.000	1025.000	789.900	1050.000
NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	540.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE COUNTRY CLUB ROAD								
X1	13401.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-43.000	0.000	779.700	0.000	25.000	778.800	0.000	50.000	777.900	0.000
BT	0.000	75.000	777.200	0.000	100.000	776.600	0.000	125.000	776.100	0.000
BT	0.000	150.000	775.600	0.000	175.000	775.100	0.000	200.000	774.900	0.000
BT	0.000	250.000	774.800	0.000	275.000	774.800	0.000	300.000	774.700	0.000
BT	0.000	325.000	775.000	0.000	350.000	775.300	0.000	375.000	775.600	0.000
BT	0.000	400.000	775.700	0.000	425.000	776.000	0.000	450.000	776.300	0.000
BT	0.000	470.000	776.600	0.000	500.000	776.400	769.500	500.100	776.900	775.100
BT	0.000	540.000	777.000	775.300	540.100	777.000	766.100	575.000	777.100	0.000
BT	0.000	600.000	777.100	0.000	625.000	777.000	0.000	650.000	776.800	0.000
BT	0.000	675.000	776.600	0.000	700.000	776.700	0.000	725.000	776.900	0.000

BT	0.000	750.000	777.200	0.000	775.000	777.600	0.000	800.000	778.000	0.000
BT	0.000	825.000	778 500	0.000	850.000	779.000	0.000	875.000	779.800	0.000
BT	0.000	900.000	780.700	0.000	925.000	781.900	0.000	950.000	783.200	0.000
BT	0.000	975.000	784.700	0.000	1000.000	786.300	0.000	1025.000	788.000	0.000
BT	0.000	1025.000	789.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	540.000	0.000	0.000	0.000	0.000	0.000
		U/S FACE COUNTRY CLUB ROAD								
X1	13429.000	0 000	0.000	0.000	28.000	28.000	28.000	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
NC	0.070	0.035	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	540.000	0.000	0.000	0.000	0.000	0.000
X1	13430.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
ET	0.000	0.000	4.100	125.000	325.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION C, FIELD SECTION 5								
X1	13630.000	43.000	275.000	325.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	774.800	0.000	774.200	25.000	773.800	50.000	772.600	75.000	772.000	100.000
GR	773.400	125.000	771.700	150.000	770.600	175.000	772.600	200.000	772.800	225.000
GR	773.000	250.000	771.100	275.000	767.900	284.000	766.700	292.500	766.400	293.000
GR	766.200	295.000	766.100	300.000	766.400	304.000	766.500	310.000	766.600	314.000
GR	766.700	314.500	766.500	315.000	773.400	325.000	775.100	350.000	775.600	375.000
GR	775.800	400.000	776.200	425.000	776.600	450.000	776.900	457.000	777.300	500.000
GR	777.400	525.000	777.800	550.000	778.200	575.000	778.900	600.000	779.800	625.000
GR	780.200	650.000	780.400	675.000	780.800	700.000	780.900	725.000	781.100	750.000
GR	781.400	775.000	782.200	800.000	781.900	825.000	0.000	0.000	0.000	0.000
NC	0.050	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	4.100	150.000	405.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION D, FIELD SECTION 6								
X1	16750.000	30.000	366.000	400.000	2920.000	2970.000	3120.000	0.000	0.000	0.000
X4	1.000	777.400	200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	780.000	0.000	777.500	225.000	776.700	250.000	776.900	275.000	777.000	300.000
GR	777.500	325.000	776.900	350.000	777.300	366.000	772.800	371.500	772.400	373.000
GR	772.400	375.000	771.900	380.000	771.700	385.000	771.600	390.000	771.400	395.000
GR	772.600	397.500	772.800	398.000	777.100	400.000	783.000	425.000	788.300	450.000
GR	794.100	475.000	798.500	500.000	801.900	525.000	803.000	550.000	830.700	575.000
GR	804.100	600.000	804.500	625.000	804.900	650.000	805.300	675.000	805.400	700.000
NC	0.080	0.080	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	395.000	610.000	480.000	570.000	0.000	0.000	0.000
		FILED SEECTION 8 MOVED D/S								
X1	18380.000	47.000	500.000	550.000	1630.000	1630.000	1630.000	0.000	-2.000	0.000
GR	811.600	0.000	810.000	25.000	808.600	50.000	807.000	75.000	805.600	100.000
GR	804.500	125.000	802.900	150.000	801.300	175.000	799.900	200.000	798.300	225.000
GR	796.700	250.000	795.400	275.000	794.100	300.000	792.700	325.000	792.100	350.000
GR	790.100	375.000	787.800	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	779.300	500.000	778.600	505.000	776.400	510.500	775.600	511.000	775.100	511.500
GR	775.000	515.000	775.000	520.000	775.000	525.000	775.100	530.000	775.100	535.000
GR	775.000	540.000	775.200	541.000	775.600	542.500	776.600	544.000	778.300	550.000
GR	781.800	575.000	782.800	600.000	783.500	625.000	783.430	650.000	783.070	675.000
GR	782.800	700.000	782.800	725.000	782.900	750.000	782.600	775.000	782.800	800.000
GR	782.900	825.000	782.900	850.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	1.400	497.000	557.000	0.000	0.000	0.000	0.000	0.000
X1	18580.000	57.000	497.000	557.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	798.700	0.000	797.600	25.000	796.500	50.000	795.400	75.000	794.300	100.000
GR	793.200	125.000	792.100	150.000	791.100	175.000	790.100	200.000	789.400	225.000
GR	788.800	250.000	788.300	275.000	787.900	300.000	787.500	325.000	787.100	350.000
GR	786.800	375.000	786.400	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	781.400	497.000	781.400	497.100	779.200	501.000	778.100	505.300	775.400	511.400
GR	774.000	511.700	774.000	515.000	773.600	520.000	773.200	525.000	773.300	528.000
GR	773.900	535.000	775.100	540.000	775.400	541.000	775.700	550.000	778.900	551.800
GR	779.900	557.000	779.900	557.100	780.300	560.700	780.500	561.000	781.800	575.000
GR	782.800	600.000	783 500	625.000	783.400	650.000	783.400	675.000	783.400	700.000
GR	783.400	725.000	783.400	750.000	783.400	775.000	783.400	800.000	795.300	900.000
GR	796.300	925.000	797.300	950.000	798.400	975.000	799.400	1000.000	800.600	1025.000
GR	801.900	1050.000	803.100	1075.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	497.000	557.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE WOLF CREEK HIGHWAY								
X1	18581.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-42.000	0.000	798.700	0.000	25.000	797.600	0.000	50.000	796.500	0.000
BT	0.000	75.000	795.400	0.000	100.000	794.300	0.000	125.000	793.200	0.000
BT	0.000	150.000	792.100	0.000	175.000	791.100	0.000	200.000	790.100	0.000
BT	0.000	225.000	789.400	0.000	250.000	788.800	0.000	275.000	788.300	0.000
BT	0.000	300.000	787.900	0.000	325.000	787.500	0.000	350.000	787.100	0.000
BT	0.000	375.000	786.800	0.000	400.000	786.400	0.000	425.000	786.000	0.000
BT	0.000	450.000	785.700	0.000	475.000	785.600	0.000	497.000	785.600	781.400
BT	0.000	497.100	785.600	782.500	525.000	785.900	782.500	528.000	785.900	782.500
BT	0.000	550.000	786.000	782.600	557.000	786.000	782.700	557.100	786.000	779.900
BT	0.000	561.000	786.000	0.000	575.000	786.000	0.000	600.000	786.300	0.000
BT	0.000	625.000	786.700	0 000	650.000	787.300	0.000	675.000	787.900	0.000
BT	0.000	700.000	788.500	0.000	725.000	789.200	0.000	750.000	790.000	0.000
BT	0.000	775.000	790.800	0.000	800.000	791.600	0.000	900.000	795.300	0.000
BT	0.000	925.000	796.300	0.000	950.000	797.300	0.000	1075.000	803.300	0.000
ET	0.000	4.100	0.000	497.000	557.000	0.000	0.000	0.000	0.000	0.000
		U/S FACE WOLF CREEK HIGHWAY								
X1	18633.000	0.000	0.000	0.000	52.000	52.000	52.000	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
NC	0.030	0.030	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	497.000	557.000	0.000	0.000	0.000	0.000	0.000
X1	18634.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
		VALLEY SECTION E, FIELD SECTION 8								
X1	18834.000	47.000	500.000	550.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	811.600	0.000	810.000	25.000	808.600	50.000	807.000	75.000	805.600	100.000
GR	804.500	125.000	802.900	150.000	801.300	175.000	799.900	200.000	798.300	225.000
GR	796.700	250.000	795.400	275.000	794.100	300.000	792.700	325.000	792.100	350.000
GR	790.100	375.000	787.800	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	779.300	500.000	778.600	505.000	776.400	510.500	775.600	511.000	775.100	511.500
GR	775.000	515.000	775.000	520.000	775.000	525.000	775.100	530.000	775.100	535.000
GR	775.000	540.000	775.200	541.000	775.600	542.100	776.600	544.000	778.300	550.000

GR	781.800	575.000	782.800	600.000	783.500	625.000	783.430	650.000	783.070	675.000
GR	782.800	700.000	782.800	725.000	782.900	750.000	782.600	775.000	782.800	800.000
GR	782.900	825.000	782.900	850.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.040	0.300	0.500	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION F, FIELD SECTION 9								
X1	20350.000	45.000	207.000	250.000	1200.000	1300.000	1516.000	0.000	0.000	0.000
GR	785.400	0.000	785.000	25.000	785.000	50.000	784.900	75.000	784.900	100.000
GR	784.100	125.000	783.300	150.000	783.200	175.000	783.200	195.000	781.300	200.000
GR	780.500	207.000	778.200	215.000	777.600	216.000	777.400	220.000	777.800	225.000
GR	778.000	230.000	778.000	235.000	777.700	240.500	778.200	242.000	779.100	245.000
GR	784.100	250.000	783.700	275.000	784.600	300.000	784.800	325.000	784.300	350.000
GR	784.300	375.000	784.200	400.000	783.500	425.000	783.900	450.000	785.900	475.000
GR	784.500	500.000	783.600	525.000	789.600	539.000	795.600	548.000	801.600	557.000
GR	807.600	566.000	813.600	575.000	818.700	585.000	818.500	600.000	815.600	625.000
GR	815.200	650.000	815.000	675.000	815.300	700.000	817.000	725.000	819.400	750.000
		FIELD SECTION 11 MOVED D/S								
X1	22685.000	41.000	497.000	550.000	2000.000	2000.000	2335.000	0.000	-1.710	0.000
GR	807.400	0.000	807.000	25.000	806.000	50.000	804.900	75.000	804.100	100.000
GR	802.100	125.000	798.900	150.000	795.000	175.000	793.500	200.000	792.300	225.000
GR	792.300	250.000	792.200	275.000	792.000	300.000	791.200	325.000	790.300	350.000
GR	789.500	375.000	788.700	400.000	788.800	425.000	789.000	450.000	789.500	475.000
GR	789.900	497.000	783.600	502.000	783.200	505.000	782.900	510.000	783.200	515.000
GR	783.200	520.000	783.300	525.000	783.600	530.000	786.100	550.000	789.200	575.000
GR	789.800	600.000	788.900	625.000	789.100	650.000	789.600	675.000	789.500	700.000
GR	789.000	725.000	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000
GR	788.100	850.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	548.000	0.000	0.000	0.000	0.000	0.000
X1	23420.000	58.000	500.000	548.000	735.000	735.000	735.000	0.000	0.000	0.000
GR	792.600	0.000	792.100	25.000	791.600	50.000	791.200	75.000	790.700	100.000
GR	790.300	125.000	789.900	150.000	789.600	175.000	789.300	200.000	789.000	225.000
GR	788.900	250.000	788.800	275.000	789.100	300.000	789.300	325.000	789.600	350.000
GR	790.000	375.000	788.700	400.000	788.800	425.000	789.000	450.000	789.500	475.000
GR	789.900	487.000	786.500	500.000	786.500	500.100	783.000	506.500	782.600	507.000
GR	782.200	510.000	782.100	515.000	781.700	520.000	781.500	525.000	781.800	530.000
GR	782.100	535.000	782.200	538.000	782.600	539.500	784.800	542.000	786.400	548.000
GR	786.400	548.800	787.400	563.000	787.900	563.000	789.200	575.000	789.800	600.000
GR	788.900	625.000	789.100	650.000	789.600	675.000	789.500	700.000	789.000	725.000
GR	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000	788.100	850.000
GR	799.200	875.000	799.200	900.000	799.500	925.000	799.800	950.000	800.100	975.000
GR	800.400	1000.000	800.900	1025.000	801.300	1050.000	0.000	0.000	0.000	0.000
ET	0.000	4 100	0.000	500.000	548.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE HAMILTON ROAD								
X1	23421.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-47.000	0.000	792.600	0.000	25.000	792.100	0.000	50.000	791.600	0.000
BT	0.000	75.000	791.200	0.000	100.000	790.700	0.000	125.000	790.300	0.000
BT	0.000	150.000	789.900	0.000	175.000	789.600	0.000	200.000	789.300	0.000
BT	0.000	225.000	789.000	0.000	250.000	788.900	0.000	275.000	788.800	0.000
BT	0.000	300.000	789.100	0.000	325.000	789.300	0.000	350.000	789.600	0.000
BT	0.000	375.000	790.000	0.000	400.000	790.500	0.000	425.000	791.200	0.000

BT	0.000	450.000	792.000	0.000	487.000	794.200	0.000	500.000	794.200	786.500
BT	0.000	500.100	794.200	793.300	525.000	793.900	793.300	548.000	794.000	793.300
BT	0.000	548.800	794.000	786.400	563.000	794.000	0.000	563.000	794.000	0.000
BT	0.000	575.000	792.800	0.000	600.000	792.600	0.000	625.000	792.600	0.000
BT	0.000	650.000	792.700	0.000	675.000	793.100	0.000	700.000	794.000	0.000
BT	0.000	725.000	794.800	0.000	750.000	796.000	0.000	775.000	797.300	0.000
BT	0.000	800.000	798.300	0.000	825.000	799.000	0.000	850.000	799.300	0.000
BT	0.000	875.000	799.200	0.000	900.000	799.200	0.000	925.000	799.500	0.000
BT	0.000	950.000	799.800	0.000	975.000	800.100	0.000	1000.000	800.400	0.000
BT	0.000	1025.000	800.900	0.000	1050.000	801.300	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	548.000	0.000	0.000	0.000	0.000	0.000
		U/S FACE HAMILTON ROAD								
X1	23437.000	0.000	0.000	0.000	16.000	16.000	16.000	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
NC	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	500.000	548.000	0.000	0.000	0.000	0.000	0.000
X1	23438.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	300.000	748.000	497.000	700.000	0.000	0.000	0.000
X1	23638.000	41.000	497.000	550.000	200.000	200.000	200.000	0.000	-0.470	0.000
GR	807.400	0.000	807.000	25.000	806.000	50.000	804.900	75.000	804.100	100.000
GR	802.100	125.000	798.900	150.000	795.000	175.000	793.500	200.000	792.300	225.000
GR	792.300	250.000	792.200	275.000	792.000	300.000	791.200	325.000	790.300	350.000
GR	789.500	375.000	788.700	400.000	788.800	425.000	789.000	450.000	789.500	475.000
GR	789.900	497.000	783.600	502.000	783.200	505.000	782.900	510.000	783.200	515.000
GR	783.200	520.000	783.300	525.000	783.600	530.000	786.100	550.000	789.200	575.000
GR	789.800	600.000	788.900	625.000	789.100	650.000	789.600	675.000	789.500	700.000
GR	789.000	725.000	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000
GR	788.100	850.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION G, FIELD SECTION 11								
X1	23738.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	0.470	0.000
X1	24738.000	0.000	0.000	0.000	950.000	950.000	1000.000	0.000	1.630	0.000
X1	25738.000	0.000	0.000	0.000	950.000	950.000	1000.000	0.000	1.630	0.000
X1	27738.000	0.000	0.000	0.000	1900.000	1900.000	2000.000	0.000	3.260	0.000
NC	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		FILED SECTION 12 MOVED D/S								
X1	29800.000	46.000	250.000	311.000	1900.000	1900.000	2062.000	0.000	-3.630	0.000
GR	805.000	0.000	805.100	25.000	805.000	50.000	804.300	75.000	803.100	100.000
GR	802.600	125.000	802.500	150.000	802.000	175.000	802.000	200.000	802.200	225.000
GR	802.300	250.000	797.100	256.000	796.700	258.000	796.400	260.000	796.600	265.000
GR	796.900	270.000	797.000	275.000	797.000	280.000	797.000	285.000	797.000	290.000
GR	796.900	295.000	797.100	300.000	797.300	302.000	803.500	311.000	804.100	325.000
GR	804.200	350.000	804.500	375.000	805.100	400.000	804.900	425.000	804.500	450.000
GR	804.700	475.000	810.700	496.000	816.700	505.000	822.700	515.000	825.500	525.000
GR	828.700	550.000	829.700	575.000	829.700	600.000	829.300	625.000	827.400	650.000

GR	825.400	675.000	822.000	700.000	820.000	725.000	818.400	750.000	818.400	775.000
GR	818.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION H, FIELD SECTION 12								
X1	31800.000	0.000	0.000	0.000	2000.000	2000.000	2000.000	0.000	3.630	0.000
		FIELD SECTTION 12 MOVED TO U/S STUDY LIMIT AT US 223								
X1	32000.000	0.000	0.000	0.000	200.000	200.000	200.000	0.000	0.360	0.000
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

THIS RUN EXECUTED 2 JAN 88 12:27:53

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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
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T1      ADRIAN TOWNSHIP, MICHIGAN
T2      LIMITED DETAIL FIS, WOLF CREEK
T3      100-YEAR DISCHARGE, ENCROACHED RUN

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       3.        0.        0.  0.000000      0.00      0.0       0.   763.100     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
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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


*PROF 2

CCHV=   0.300 CEHV=   0.500
*SECNO 5000.000
 2800 NAT Q1=    1706.94  WSEL=     763.00  ENC Q1=    1706.94  WSEL=     763.10  RATIO=  0.0000
 NAT Q1=    1769.   RATIOS LOB,CH,ROB=  0.0034  0.4136  0.5831  WSEL=     763.10
3280 CROSS SECTION    5000.00 EXTENDED       3.24 FEET


3470 ENCROACHMENT STATIONS=      525.0     1041.1  TYPE=      4  TARGET=        0.035
                FIELD SECTION 1 MOVED DOWNSTREAM, STARTING WATER SURFACE
                FROM DAM SAFETY REPORT PLUS .5 FT
  5000.00      9.04    763.10      0.00    763.00    763.12      0.02      0.00      0.00    758.56
    1840.        0.      769.     1071.        0.      511.     1628.        0.        0.     759.26
     0.00      0.00      1.50      0.66     0.000     0.040     0.060     0.000    754.06    525.00
 0.000121        0.        0.        0.         0         0         0      0.00    516.06   1041.06


*SECNO 6600.000
 2800 NAT Q1=     767.66  WSEL=     763.32  ENC Q1=     767.66  WSEL=     763.42  RATIO=  0.0000
 NAT Q1=     808.   RATIOS LOB,CH,ROB=  0.0019  0.5765  0.4216  WSEL=     763.42
3280 CROSS SECTION    6600.00 EXTENDED       1.41 FEET


3470 ENCROACHMENT STATIONS=      525.0      974.4  TYPE=      4  TARGET=        0.050
  6600.00      7.21    763.43      0.00    763.32    763.51      0 08      0.37      0.03    760.72
    1840.        0.      1103.      737.        0.      391.      718.        60.       18.     761.42
     0.21      0.00      2.82      1.03     0.000     0.040     0.060     0.000    756.22    525.00
 0.000587     1300.     1600.     1600.         2         0         0      0.00    449.44    974.44


*SECNO 8200.000
 2800 NAT Q1=     470.35  WSEL=     764.60  ENC Q1=     470.35  WSEL=     764.70  RATIO=  0.0000
 NAT Q1=     498.   RATIOS LOB,CH,ROB=  0.0010  0.7141  0.2848  WSEL=     764.70
3265 DIVIDED FLOW

3280 CROSS SECTION    8200.00 EXTENDED       0.55 FEET


3470 ENCROACHMENT STATIONS=      525.0      875.8  TYPE=      4  TARGET=        0.056
  8200.00      6.35    764.73      0.00    764.60    764.94      0.21      1.36      0.06    762.88
    1840.        0.      1380.      460.        0.      334.      319.        89.       29.     763.58
     0.33      0.00      4.14      1.44     0.000     0.040     0.060     0.000    758.38    525.00
 0.001530     1300.     1600.     1350.         2         0         0      0.00    280.16    875.83
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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=   0.500 CEHV=   1.000
*SECNO 9810.000
3280 CROSS SECTION    9810.00 EXTENDED       1.04 FEET


3470 ENCROACHMENT STATIONS=      530.0      586.0  TYPE=      1  TARGET=       56.000
                FIELD SECTION 1 MOVED DOWNSTREAM
  9810.00      6.84    767.38      0.00    767.30    767.84      0.47      2.65      0.26100000.00
    1840.         0.      1840.         0.         0.       336.         0.       106.        35.  100000.00
     0.41      0.00       5.48      0.00     0.000     0.035     0.000     0.000    760.54    530.00
 0.001853       900.      1610.      1340.         3         0         0      0.00     56.00    586.00


*SECNO 9840.000
 2800 NAT Q1=     291.48  WSEL=     767.38  ENC Q1=     308.70  WSEL=     767.48  RATIO= -0.0591
 NAT Q1=     632.   RATIOS LOB, CH, ROB=   0.0057   0.4886   0.5057  WSEL=     767.48

3470 ENCROACHMENT STATIONS=      200.0      240.0  TYPE=      4  TARGET=        0.511
  9840.00      6.86    767.46      0.00    767.38    768.35      0.89      0.08      0.43    766.30
    1840.         0.      1840.         0.         0.       243.         0.       107.        35.     766.30
     0.41      0.00       7.58      0.00     0.000     0.035     0.000     0.000    760.60    200.00
 0.003834        30.        30.        30.         2         0         0      0.00     40.00    240.00


*SECNO 9841.000
 2800 NAT Q1=     325.57  WSEL=     767.38  ENC Q1=     333.60  WSEL=     767.48  RATIO= -0.0247
 NAT Q1=     334.   RATIOS LOB, CH, ROB=   0.0000   1.0000   0.0000  WSEL=     767.48

3370 NORMAL BRIDGE, NRD= 12 MIN ELTRD=   770.00 MAX ELLC=   769.40


3470 ENCROACHMENT STATIONS=      200.0      240.0  TYPE=      4  TARGET=        0.000
                D/S FACE BIRNWICK ROAD
  9841.00      6.86    767.46      0.00    767.38    768.40      0.94      0.00      0.05    766.30
    1840.         0.      1840.         0.         0.       236.         0.       107.        35.     766.30
     0.41      0.00       7.80      0.00     0.000     0.030     0.000     0.000    760.60    200.00
 0.003076         1.         1.         1.         0         0         0     -6.84     40.00    240.00


*SECNO 9859.000
 2800 NAT Q1=     333.98  WSEL=     767.49  ENC Q1=     342.01  WSEL=     767.59  RATIO= -0.0240
 NAT Q1=     342.   RATIOS LOB, CH, ROB=   0.0000   1.0000   0.0000  WSEL=     767.59
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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= 12 MIN ELTRD=  770.00 MAX ELLC=  769.40


3470 ENCROACHMENT STATIONS=     200.0     240.0  TYPE=     4  TARGET=       0.000
                U/S FACE BIRNWICK ROAD
  9859.00     6.96   767.56     0.00   767.49   768.47     0.92      0.05      0.01   766.30
    1840.       0.     1840.       0.       0.      240.       0.       107.       35.    766.30
     0.41     0.00     7.68     0.00    0.000    0.030    0.000     0.000   760.60   200.00
 0.002936      18.      18.      18.        2        0        0     -7.04    40.00   240.00


1490 NH CARD USED
*SECNO 9860.000
 2800 NAT Q1=    271.32  WSEL=    767.63  ENC Q1=    288.87  WSEL=    767.73  RATIO= -0.0647
 NAT Q1=    683.   RATIOS LOB, CH, ROB=  0.0053  0.4231  0.5716  WSEL=    767.73

3470 ENCROACHMENT STATIONS=     200.0     240.0  TYPE=     4  TARGET=       0.577
  9860.00     7.09   767.69     0.00   767.63   768.52     0.83      0.00      0.04   766.30
    1840.       0.     1840.       0.       0.      252.       0.       107       35.    766.30
     0.41     0.00     7.29     0.00    0.000    0.039    0.000     0.000   760.60   200.00
 0.004294       1.       1.        1        2        0        0      0.00    40.00   240.00


1490 NH CARD USED
*SECNO 9873.000
 2800 NAT Q1=    526.33  WSEL=    768.50  ENC Q1=    571.46  WSEL=    768.60  RATIO= -0.0857
 NAT Q1=   1498.   RATIOS LOB, CH, ROB=  0.0023  0.3815  0.6162  WSEL=    768.60
3280 CROSS SECTION   9873.00 EXTENDED      2.12 FEET


3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=     525.0     591.0  TYPE=     4  TARGET=       0.619
  9873.00     7.92   768.55     0.00   768.50   768.82     0.28      0.03      0.28   765.13
    1840.       0.     1840.       0.       0.      437.       0.       107.       35.    765.83
     0.42     0.00     4.21     0.00    0.000    0.039    0.000     0.000   760.63   525.00
 0.001140      13.      13.      13.        3        0        0      0.00    66.00   591.00


1490 NH CARD USED
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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 10200.000
3280 CROSS SECTION  10200.00 EXTENDED      2.15 FEET

3470 ENCROACHMENT STATIONS=      525.0      940.0  TYPE=      1  TARGET=      415.000
                VALLEY SECTION A,FIELD SECTION 1
 10200.00      7.95    769.05      0.00    769.00    769.08      0.04      0.14      0.12    765.60
    1840.        0.      830.      1010.       0.       439.      916.      113.       37.     766.30
     0.48      0.00      1.89      1.10     0.000     0.040     0.041     0.000    761.10    525.00
 0.000229      327.      327.      327.         2         0         0      0.00    415.00    940.00

CCHV=    0.300 CEHV=    0.500
*SECNO 11130.000

3470 ENCROACHMENT STATIONS=      355.0      650.0  TYPE=      1  TARGET=      295.000
 11130.00      6.95    769.38      0.00    769.24    769.58      0.19      0.42      0.08    766.83
    1840.       571.     1051.       218.      237.      245.      172.      133.       43.     766.03
     0.55      2.41      4.29      1.26     0.035     0.045     0.070     0.000    762.43    355.00
 0.001615      790.      930.       790.         2         0         0      0.00    295.00    650.00

CCHV=    0.500 CEHV=    1.000
*SECNO 11530.000

3470 ENCROACHMENT STATIONS=      439.0      570.0  TYPE=      1  TARGET=      131.000
                VALLEY SECTION B,FIELD SECTION 2
 11530.00      7.16    770.06      0.00    769.97    770.37      0.30      0.68      0.11    767.30
    1840.       422.     1254.       164.      132.      253.       87.      137.       45.     766.50
     0.57      3.21      4.96      1.87     0.035     0.045     0.070     0.000    762.90    439.00
 0.002063      330.      400.       330.         2         0         0      0.00    131.00    570.00


*SECNO 11730.000
 2800 NAT Q1=     332.38  WSEL=     770.47  ENC Q1=     336.15  WSEL=     770.57  RATIO= -0.0113
 NAT Q1=    342.  RATIOS LOB,CH,ROB=  0.0074  0.9815  0.0110  WSEL=    770.57

3470 ENCROACHMENT STATIONS=      500.0      554.5  TYPE=      4  TARGET=        0.018
 11730.00      7.49    770.59      0.00    770.47    771.10      0.52      0.52      0.21    768.20
    1840.        0.     1840.        0.        0.       319.        0.      139.       46.     766.80
     0.58      0.00      5.77      0.00     0.000     0.045     0.000     0.000    763.10    500.00
 0.003414      200.      200.       200.         2         0         0      0.00     54.50    554.50
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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 11731.000
 2800 NAT Q1=     477.15  WSEL=     770.47  ENC Q1=     490.44  WSEL=     770.57  RATIO= -0.0278
 NAT Q1=     490.   RATIOS LOB,CH,ROB=   0.0000   1.0000   0.0000  WSEL=     770.57

3370 NORMAL BRIDGE,NRD= 35 MIN ELTRD=  772.50 MAX ELLC=  771.80


3470 ENCROACHMENT STATIONS=      500 0      554.5  TYPE=      4  TARGET=        0.000
                D/S FACE TIPTON HIGHWAY BRIDGE
 11731.00      7.49    770.59      0.00    770.47    771.11      0.52      0.00      0.00    768.20
    1840.        0.      1840.       0.        0.       319.       0.       139.       46.     766.80
     0.58      0.00      5.77      0.00     0.000     0.030     0.000     0.000    763.10    500.00
 0.001517        1.        1.        1.         0         0         0     -0.08     54.50    554.50


*SECNO 11774.000
 2800 NAT Q1=     490.16  WSEL=     770.56  ENC Q1=     502.43  WSEL=     770.66  RATIO= -0.0250
 NAT Q1=     502.   RATIOS LOB,CH,ROB=   0.0000   1.0000   0.0000  WSEL=     770.66

3370 NORMAL BRIDGE,NRD= 35 MIN ELTRD=  772.50 MAX ELLC=  771.80


3470 ENCROACHMENT STATIONS=      500.0      554.5  TYPE=      4  TARGET=        0.000
                U/S FACE TIPTON HIGHWAY BRIDGE
 11774.00      7.58    770.68      0.00    770.56    771.18      0.50      0.06      0.01    768.20
    1840.        0.      1840.       0.        0.       324.       0.       140.       46.     766.80
     0.59      0.00      5.69      0.00     0.000     0.030     0.000     0.000    763.10    500.00
 0.001450       43.       43.       43.         2         0         0     -0.09     54.50    554.50


*SECNO 11775.000
 2800 NAT Q1=     391.59  WSEL=     770.62  ENC Q1=     394.49  WSEL=     770.72  RATIO= -0.0074
 NAT Q1=     403.   RATIOS LOB,CH,ROB=   0.0033   0.9786   0.0181  WSEL=     770.72

3470 ENCROACHMENT STATIONS=      500.0      554.5  TYPE=      4  TARGET=        0.021
 11775.00      7.58    770.68      0.00    770.62    771.18      0.50      0.00      0.00    768.20
    1840.        0.      1840.       0.        0.       324.       0.       140.       46.     766.80
     0.59      0.00      5.68      0.00     0.000     0.040     0.000     0.000    763.10    500.00
 0.002573        1.        1.        1.         0         0         0      0.00     54.50    554.50


*SECNO 11885.000
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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

 2800 NAT Q1=     477.50  WSEL=     771.14  ENC Q1=     477.50  WSEL=     771 24  RATIO=  0.0000
 NAT Q1=     496.   RATIOS LOB,CH,ROB=  0.2266  0.7728  0.0005  WSEL=     771.24

3470 ENCROACHMENT STATIONS=      102.8      325.0  TYPE=      4  TARGET=        0.037
                FIELD SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 3
 11885.00      7.98    771.23      0.00    771.14    771.50      0.28      0.21      0.11    768.25
    1840.      365.     1475.       0.      318.      314.        0.       141.       46.     770.55
     0.59      1.15      4.70      0.00     0.080     0.040     0.000     0.000    763.25    102.85
 0.001513      110.      110.      110.         2         0         0      0.00    222.15    325.00


CCHV=    0.300 CEHV=    0.500
*SECNO 12920.000
 2800 NAT Q1=     619.54  WSEL=     772.46  ENC Q1=     619.54  WSEL=     772.56  RATIO=  0.0000
 NAT Q1=     655.   RATIOS LOB,CH,ROB=  0.4268  0.5730  0.0003  WSEL=     772.56

3470 ENCROACHMENT STATIONS=       97.0      325.0  TYPE=      4  TARGET=        0.054
 12920.00      7.92    772.57      0.00    772.46    772.72      0.15      1.18      0.04    769.65
    1840.      729.     1111.       0.      318.      311.        0.       156.       51.     771.95
     0.69      2.29      3.58      0.00     0.030     0.040     0.000     0.000    764.65     96.95
 0.000888      1035.     1035.     1035.         2         0         0      0.00    228.05    325.00


CCHV=    0.500 CEHV=    1.000
*SECNO 13300.000
 2800 NAT Q1=     402.09  WSEL=     772.96  ENC Q1=     402.09  WSEL=     773.06  RATIO=  0.0000
 NAT Q1=     649.   RATIOS LOB,CH,ROB=  0.4240  0.5757  0.0003  WSEL=     773.06

3470 ENCROACHMENT STATIONS=      259.4      325.0  TYPE=      4  TARGET=        0.380
                FILED SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 4
 13300.00      7.91    773.07      0.00    772.96    773.52      0.45      0.50      0.30    770.16
    1840.      133.     1707.       0.       36.      310.        0.       160.       53.     772.46
     0.71      3.70      5.50      0.00     0.030     0.040     0.000     0.000    765.16    259.43
 0.002110      380.      380.      380.         2         0         0      0.00     65.57    325.00


*SECNO 13400.000
 2800 NAT Q1=     309.21  WSEL=     773.22  ENC Q1=     370.77  WSEL=     773.32  RATIO= -0.1991
 NAT Q1=     431.   RATIOS LOB,CH,ROB=  0.1300  0.8603  0.0097  WSEL=     773.32

3470 ENCROACHMENT STATIONS=      500.0      540.0  TYPE=      4  TARGET=        0.140
 13400.00      7.93    773.33      0.00    773.22    774.01      0.68      0.26      0.23    769.50
    1840.        0.     1840.       0.        0.      278.        0.       161.       53.     766.10
     0.71      0.00      6.62      0.00     0.000     0.040     0.000     0.000    765.40    500.00
 0.003384      100.      100.      100.         2         0         0      0.00     40.00    540.00
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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 13401.000
 2800 NAT Q1=     412.22  WSEL=     773.23  ENC Q1=     465.57  WSEL=     773.33  RATIO= -0.1294
 NAT Q1=     466.   RATIOS LOB,CH,ROB=   0.0000  0.9999  0.0001  WSEL=     773.33

3370 NORMAL BRIDGE,NRD= 43 MIN ELTRD=  774.70 MAX ELLC=  775.30


3470 ENCROACHMENT STATIONS=      500.0      540.0  TYPE=      4  TARGET=        0.000
                D/S FACE COUNTRY CLUB ROAD
 13401.00      7.93    773.33      0.00    773.23    774.01      0.68      0.00      0.00    769.50
    1840.        0.      1840.       0.        0.      278.        0.       161.       53.     766.10
     0.71      0.00      6.62      0.00     0.000     0.030     0.000     0.000    765.40    500.00
 0.001904        1.        1.        1.         0         0         0     -0.13     40.00    540.00


*SECNO 13429.000
 2800 NAT Q1=     419.15  WSEL=     773.30  ENC Q1=     473.78  WSEL=     773.40  RATIO= -0 1303
 NAT Q1=     474.   RATIOS LOB,CH,ROB=   0.0000  0.9999  0.0001  WSEL=     773.40

3370 NORMAL BRIDGE,NRD= 43 MIN ELTRD=  774.70 MAX ELLC=  775.30


3470 ENCROACHMENT STATIONS=      500.0      540.0  TYPE=      4  TARGET=        0.000
                U/S FACE COUNTRY CLUB ROAD
 13429.00      8.00    773.40      0.00    773.30    774.07      0.67      0.05      0.01    769.50
    1840.        0.      1840.       0.        0.      281.        0.       161.       53.     766.10
     0.71      0.00      6.55      0.00     0.000     0.030     0.000     0.000    765.40    500.00
 0.001846       28.       28.       28.         2         0         0     -0.14     40.00    540.00


*SECNO 13430.000
 2800 NAT Q1=     359.77  WSEL=     773.31  ENC Q1=     432.40  WSEL=     773.41  RATIO= -0.2019
 NAT Q1=     464.   RATIOS LOB,CH,ROB=   0.0566  0.9329  0.0106  WSEL=     773.41

3470 ENCROACHMENT STATIONS=      500.0      540.0  TYPE=      4  TARGET=        0.067
 13430.00      8.01    773.41      0.00    773.31    774.07      0.67      0.00      0.00    769.50
    1840.        0.      1840.       0.        0.      281.        0.       161.       53.     766.10
     0.71      0.00      6.55      0.00     0.000     0.035     0.000     0.000    765.40    500.00
 0.002506        1.        1.        1.         0         0         0      0.00     40.00    540.00


*SECNO 13630.000
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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= 125.0 325.0 TYPE= 1 TARGET= 200.000
VALLEY SECTION C, FIELD SECTION 5

13630.00	8.23	774.33	0.00	774.30	774.58	0.25	0.30	0.21	771.10
1840.	383.	1457.	0.	326.	326.	0.	163.	53.	100000.00
0.73	1.17	4.46	0.00	0.070	0.035	0.000	0.000	766.10	125.00
0.001000	200.	200.	200.	3	0	0	0.00	200.00	325.00

CCHV= 0.300 CEHV= 0.500
*SECNO 16750.000

3470 ENCROACHMENT STATIONS= 150.0 405.0 TYPE= 1 TARGET= 255.000
VALLEY SECTION D, FIELD SECTION 6

16750.00	7.27	778.67	0.00	778.53	779.10	0.42	4.43	0.09	777.30
1840.	557.	1274.	9.	305.	207	5.	203	69.	777.10
0.90	1.82	6.16	1.87	0.050	0.035	0.035	0.000	771.40	150.00
0.002261	2920.	3120.	2970.	3	0	0	0.00	255 00	405.00

*SECNO 18380.000
3280 CROSS SECTION 18380.00 EXTENDED 0.44 FEET

3470 ENCROACHMENT STATIONS= 480.0 570.0 TYPE= 1 TARGET= 90.000
FILED SEECTION 8 MOVED D/S

18380.00	8.35	781.35	0.00	781.37	781.64	0.29	2.50	0.04	777.30
1840.	80.	1661.	99.	64.	365.	73.	223.	75.	776.30
1.01	1.25	4.55	1.36	0.080	0.040	0.080	0.000	773 00	480.00
0.001111	1630.	1630.	1630.	1	0	0	0.00	90.00	570.00

CCHV= 0.500 CEHV= 1 000
*SECNO 18580.000
2800 NAT Q1= 400.83 WSEL= 781.65 ENC Q1= 420.69 WSEL= 781.75 RATIO= -0.0496
NAT Q1= 424. RATIOS LOB, CH, ROB= 0.0018 0.9915 0.0066 WSEL= 781.75

3470 ENCROACHMENT STATIONS= 497.0 557.0 TYPE= 4 TARGET= 0.008

18580.00	8.45	781.65	0.00	781.65	782.07	0.42	0.30	0.13	781.40
1840.	0.	1840.	0.	0.	354.	0.	224.	76.	779.90
1.02	0.00	5.20	0.00	0.000	0.040	0.000	0.000	773.20	497.00
0.002114	200.	200.	200.	0	0	0	0.00	60.00	557.00

```
  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

*SECNO 18581.000
 2800 NAT Q1=     534.64  WSEL=     781.66  ENC Q1=     559.15  WSEL=     781.76  RATIO= -0.0458
 NAT Q1=     559.   RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     781.76

3370 NORMAL BRIDGE,NRD= 42 MIN ELTRD=  785.60 MAX ELLC=  782.70


3470 ENCROACHMENT STATIONS=      497.0      557.0  TYPE=      4  TARGET=        0.000
                D/S FACE WOLF CREEK HIGHWAY
 18581.00      8.45    781.65      0.00    781.66    782.07      0.42      0.00      0.00    781.40
    1840.        0.      1840.       0.        0.      354.        0.      225.        76.     779.90
     1.02      0.00      5.20      0.00     0.000     0.030     0.000     0.000    773.20    497.00
 0.001188        1.        1.        1.         0         0         0      0.00     60.00    557.00


*SECNO 18633.000
 2800 NAT Q1=     546.72  WSEL=     781.73  ENC Q1=     570.85  WSEL=     781.83  RATIO= -0.0441
 NAT Q1=     571.   RATIOS LOB,CH,ROB=  0.0000  1.0000  0.0000  WSEL=     781.83

3370 NORMAL BRIDGE,NRD= 42 MIN ELTRD=  785.60 MAX ELLC=  782.70


3470 ENCROACHMENT STATIONS=      497.0      557.0  TYPE=      4  TARGET=        0.000
                U/S FACE WOLF CREEK HIGHWAY
 18633.00      8.52    781.72      0.00    781.73    782.13      0.41      0.06      0.00    781.40
    1840.        0.      1840        0.        0.      358.        0.      225.        76.     779.90
     1.02      0.00      5.14      0.00     0.000     0.030     0.000     0.000    773.20    497.00
 0.001148       52.       52.       52.         1         0         0      0.00     60.00    557.00


*SECNO 18634.000
 2800 NAT Q1=     467.87  WSEL=     781.73  ENC Q1=     491.69  WSEL=     781.83  RATIO= -0.0509
 NAT Q1=     503.   RATIOS LOB,CH,ROB=  0.0058  0.9772  0.0169  WSEL=     781.83

3470 ENCROACHMENT STATIONS=      497.0      557.0  TYPE=      4  TARGET=        0.023
 18634.00      8.53    781.73      0.00    781.73    782.14      0.41      0.00      0.00    781.40
    1840.        0.      1840.       0.        0.      359.        0.      225.        76.     779.90
     1.02      0.00      5.13      0.00     0.000     0.035     0.000     0.000    773.20    497.00
 0.001554        1.        1.        1.         0         0         0      0.00     60.00    557.00


*SECNO 18834.000
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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

 2800 NAT Q1=     485.87  WSEL=     782.08  ENC Q1=     485.87  WSEL=     782.18  RATIO=  0.0000
 NAT Q1=     504.   RATIOS LOB,CH,ROB=  0.0691  0.8444  0.0865  WSEL=     782.18

3470 ENCROACHMENT STATIONS=      485.7      562.4  TYPE=      4  TARGET=        0.036
                VALLEY SECTION E, FIELD SECTION 8
 18834.00      7.04    782.04      0.00    782.08    782.46      0.42      0.31      0.01    779.30
    1840.       93.      1621.      127.       31.       299.       36.       227.       76.     778.30
     1.03      3.03      5.42      3.56     0.030     0.035     0.030     0.000    775.00    485.75
 0.001565      200.      200.      200.         2         0         0      0.00     76.64    562.39


CCHV=    0.300 CEHV=    0.500
*SECNO 20350.000
 2800 NAT Q1=     410.33  WSEL=     784.58  ENC Q1=     410.33  WSEL=     784.68  RATIO=  0.0000
 NAT Q1=     435.   RATIOS LOB,CH,ROB=  0.1911  0.7158  0.0931  WSEL=     784.68

3265 DIVIDED FLOW


3470 ENCROACHMENT STATIONS=      150.7      433.4  TYPE=      4  TARGET=        0.057
                VALLEY SECTION F, FIELD SECTION 9
 20350.00      7.30    784 70      0.00    784.58    785.06      0.36      2.58      0.02    780.50
    1840.       318.      1394.      128.       104.       263.       89.       240.       81.     784.10
     1.12      3.06      5.31      1.43     0.035     0.040     0.035     0.000    777.40    150.65
 0.001992      1200.     1516.     1300.         1         0         0      0.00    264.11    433.44


*SECNO 22685.000
 2800 NAT Q1=     555.21  WSEL=     788.06  ENC Q1=     555.21  WSEL=     788.16  RATIO=  0.0000
 NAT Q1=     591.   RATIOS LOB,CH,ROB=  0.0604  0.5832  0.3564  WSEL=     788.16

3265 DIVIDED FLOW

3280 CROSS SECTION  22685.00 EXTENDED       1.78 FEET

3470 ENCROACHMENT STATIONS=      420.4      832.7  TYPE=      4  TARGET=        0.061
                FIELD SECTION 11 MOVED D/S
 22685.00      6.98    788.17      0.00    788.06    788.33      0.16      3.21      0.06    788.19
    1840.       59.      1141.      641.       49.       303.      337.       269.       97.     784.39
     1.33      1.19      3.77      1.90     0.035     0.040     0.035     0.000    781.19    420.42
 0.001089      2000.     2335.     2000.         3         0         0      0.00    411.32    832.69
```

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= 0.500 CEHV= 1.000
*SECNO 23420.000
2800 NAT Q1= 353.67 WSEL= 789.27 ENC Q1= 389.67 WSEL= 789.37 RATIO= -0.1018
NAT Q1= 541. RATIOS LOB,CH,ROB= 0.0508 0.7205 0.2287 WSEL= 789.37

3470 ENCROACHMENT STATIONS= 500.0 548.0 TYPE= 4 TARGET= 0.279

23420.00	7.85	789.35	0.00	789.27	789.90	0.55	1.18	0.39	786.50
1840	0.	1840.	0.	0.	310.	0.	277.	101.	786.40
1.36	0.00	5.93	0.00	0.000	0.040	0.000	0.000	781.50	500.00
0.002603	735.	735.	735.	2	0	0	0.00	48.00	548.00

*SECNO 23421.000
2800 NAT Q1= 353.72 WSEL= 789.27 ENC Q1= 375.63 WSEL= 789.37 RATIO= -0.0619
NAT Q1= 386. RATIOS LOB,CH,ROB= 0.0262 0.9725 0.0013 WSEL= 789.37

3370 NORMAL BRIDGE,NRD= 47 MIN ELTRD= 788.80 MAX ELLC= 793.30

3470 ENCROACHMENT STATIONS= 500.0 548.0 TYPE= 4 TARGET= 0.027
D/S FACE HAMILTON ROAD

23421.00	7.86	789.36	0.00	789.27	789.90	0.55	0.00	0.00	786.50
1840.	0.	1840.	0.	0.	310.	0.	277.	101.	786.40
1.36	0.00	5.93	0.00	0.000	0.040	0.000	0.000	781.50	500.00
0.002600	1.	1.	1.	0	0	0	-0.06	48.00	548.00

*SECNO 23437.000
2800 NAT Q1= 357.91 WSEL= 789.33 ENC Q1= 380.77 WSEL= 789.43 RATIO= -0.0639
NAT Q1= 394. RATIOS LOB,CH,ROB= 0.0323 0.9664 0.0013 WSEL= 789.43

3370 NORMAL BRIDGE,NRD= 47 MIN ELTRD= 788.80 MAX ELLC= 793.30

3470 ENCROACHMENT STATIONS= 500.0 548.0 TYPE= 4 TARGET= 0.034
U/S FACE HAMILTON ROAD

23437.00	7.91	789.41	0.00	789.33	789.95	0.54	0.04	0.00	786.50
1840.	0.	1840.	0.	0.	312.	0.	277.	101.	786.40
1.36	0.00	5.89	0.00	0.000	0.040	0.000	0.000	781.50	500.00
0.002546	16.	16.	16.	1	0	0	-0.06	48.00	548.00

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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 23438.000
 2800 NAT Q1=     358.84  WSEL=     789.33  ENC Q1=     396.12  WSEL=     789.43  RATIO= -0.1039
 NAT Q1=     563.   RATIOS LOB,CH,ROB=  0.0587  0.7038  0.2375  WSEL=     789.43

3470 ENCROACHMENT STATIONS=      500.0      548.0  TYPE=      4  TARGET=        0.296
 23438.00      7.91    789 41      0.00    789.33    789.95      0.54      0.00      0.00    786.50
    1840.        0.     1840.        0.        0.      313.        0.      277.      101.     786.40
     1.36      0.00      5.88      0.00     0.000     0.040     0.000     0.000    781.50    500.00
 0.002533         1.        1.        1.         0         0         0      0.00     48.00    548.00


*SECNO 23638.000
3280 CROSS SECTION  23638.00 EXTENDED       2.61 FEET


3470 ENCROACHMENT STATIONS=      497.0      700.0  TYPE=      1  TARGET=      203.000
 23638.00      7.81    790.24      0.00    790.23    790.42      0.19      0.30      0.17    789.43
    1840.        0.     1346.      494.        0.      347.      247.      279.      101.     785.63
     1.38      0.00      3.88      2.00     0.000     0.040     0.035     0.000    782.43    497.00
 0.000984      200.      200.      200.         2         0         0      0.00    203.00    700.00
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CCHV=    0.300 CEHV=    0.500
*SECNO 23738.000
 2800 NAT Q1=     788.65  WSEL=     790.31  ENC Q1=     788.65  WSEL=     790.41  RATIO=  0.0000
 NAT Q1=     839.   RATIOS LOB,CH,ROB=  0.1014  0.4773  0.4213  WSEL=     790.41
3280 CROSS SECTION  23738.00 EXTENDED       2.35 FEET


3470 ENCROACHMENT STATIONS=      403.9      834.5  TYPE=      4  TARGET=        0.061
                VALLEY SECTION 6,  FIELD SECTION 11
 23738.00      7.55    790.45      0.00    790.31    790.53      0.08      0.07      0.03    789.90
    1840.      143.      924.      773.      121.      333.      502.      281.      102.     786.10
     1.39      1.18      2.77      1.54     0.035     0.040     0.035     0.000    782.90    403.95
 0.000521      100.      100.      100.         2         0         0      0.00    430.58    834.53


*SECNO 24738.000
 2800 NAT Q1=     452.27  WSEL=     791.10  ENC Q1=     452.27  WSEL=     791.20  RATIO=  0.0000
 NAT Q1=     482.   RATIOS LOB,CH,ROB=  0.0364  0.6558  0.3078  WSEL=     791.20

3265 DIVIDED FLOW
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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

3280 CROSS SECTION  24738.00 EXTENDED      1.48 FEET


3470 ENCROACHMENT STATIONS=      443.3      830.2  TYPE=      4  TARGET=        0.062
 24738.00      6.67    791.20      0.00    791.10    791.44      0.24      0.84      0.08    791.53
    1840.       11.     1284.       545.      12.       287.      249.      298.      111.     787.73
     1.46      0.92      4.48      2.19     0.035     0.040     0.035     0.000    784.53    443.34
 0.001641      950.      1000.      950.         2         0         0      0.00    345.88    830.19


*SECNO 25738.000
 2800 NAT Q1=     451.79  WSEL=     792.73  ENC Q1=     451.79  WSEL=     792.83  RATIO=  0.0000
 NAT Q1=     482.   RATIOS LOB,CH,ROB=  0.0364  0.6558  0.3078  WSEL=     792.83

3265 DIVIDED FLOW

3280 CROSS SECTION  25738.00 EXTENDED      1.47 FEET


3470 ENCROACHMENT STATIONS=      444.7      829.8  TYPE=      4  TARGET=        0.063
 25738.00      6.67    792.83      0.00    792.73    793.07      0.24      1.63      0.00    793.16
    1840.       10.     1288.       542.      11.       286.      246.      310.      118.     789.36
     1.53      0.89      4.50      2.20     0.035     0.040     0.035     0.000    786.16    444.70
 0.001659      950.      1000.      950.         2         0         0      0.00    341.03    829.82


*SECNO 27738.000
 2800 NAT Q1=     452.64  WSEL=     795.99  ENC Q1=     452.64  WSEL=     796.09  RATIO=  0.0000
 NAT Q1=     482.   RATIOS LOB,CH,ROB=  0.0364  0.6560  0.3076  WSEL=     796.09

3265 DIVIDED FLOW

3280 CROSS SECTION  27738.00 EXTENDED      1.47 FEET


3470 ENCROACHMENT STATIONS=      441.8      830.6  TYPE=      4  TARGET=        0.060
 27738.00      6.67    796.09      0.00    795.99    796.33      0.24      3.26      0.00    796.42
    1840.       12.     1284.       544.      13.       286.      248.      334.      133.     792.62
     1.68      0.94      4.49      2.20     0.035     0.040     0.035     0.000    789.42    441.80
 0.001649      1900.     2000.      1900.        3         0         0      0.00    345.08    830.64
```

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN TOWNSHIP

3) WATERCOURSE: WOLF CREEK

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

THIS RUN EXECUTED 30 DEC 87 16:06:09

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

C
T1              ADRIAN TOWNSHIP, MICHIGAN
T2              LIMITED DETAIL FIS, WOLF CREEK
T3              100-YEAR DISCHARGE
```

EXISTING PROFILE

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	0	0.	0	0.000000	0 00	0.0	1840.	763.000	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
NC	0.060	0.060	0.040	0.300	0.500	0.000	0.000	0.000	0.000	0.000
		FIELD SECTION 1 MOVED DOWNSTREAM, STARTING WATER SURFACE								
		FROM DAM SAFETY REPORT PLUS .5 FT								
X1	5000.000	55.000	525.000	591.000	0.000	0.000	0.000	0 000	-7.040	0.000
GR	829.200	0.000	829.800	25.000	830.300	50.000	830.700	75.000	830.400	100.000
GR	830.200	125.000	827.400	150.000	822.600	175.000	818.800	200.000	812.900	225.000
GR	808.300	250.000	803.900	275.000	800.300	300.000	795.100	325.000	792.900	350.000
GR	788.200	375.000	784.800	400.000	782.000	425.000	780.600	450.000	779.800	475.000
GR	778.300	500.000	777.400	507.000	765.600	525.000	761.900	531.500	761.800	534.500
GR	761.200	540.000	761.200	545.000	761.200	550.000	761.400	555.000	761.300	560.000
GR	761.300	565.000	761.100	568.000	761.800	569.500	762.500	575.000	766.300	591.000
GR	766.300	600.000	766.300	625.000	765.800	650 000	765.100	675.000	764.700	700.000
GR	765.000	725.000	767.400	750.000	768.100	775.000	767.900	800.000	767.400	825.000
GR	766 800	850.000	766.100	875.000	766.400	900.000	766.600	925.000	766.600	950.000
GR	766.700	975.000	767.100	1000 000	767.000	1025.000	767.100	1050.000	766.900	1075.000
X1	6600 000	0.000	0.000	0.000	1300.000	1600.000	1600.000	0.000	2.160	0.000
X1	8200.000	0.000	0.000	0.000	1300.000	1350.000	1600.000	0.000	2.160	0.000
NC	0.030	0.030	0.035	0 500	1.000	0.000	0.000	0.000	0.000	0.000
		FIELD SECTION 1 MOVED DOWNSTREAM								
X1	9810.000	0.000	0.000	0.000	900.000	1340.000	1610.000	0.000	2.160	0.000
X3	0.000	0.000	0.000	530.000	0.000	586.000	0.000	0.000	0.000	0.000
X1	9840.000	13.000	200.000	240.000	30.000	30.000	30.000	0.000	0 000	0.000
X3	0 000	0.000	0.000	200.000	0.000	240.000	0.000	0.000	0.000	0.000
GR	780 000	0.000	770.000	145.000	766.300	200.000	761.000	201.000	761.000	201.100
GR	760 600	220.000	762.800	239.000	762.800	239.100	766.300	240.000	765.800	245.000
GR	765.800	290.000	766.800	690.000	770.000	790.000	0.000	0.000	0.000	0.000

NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE BIRNWICK ROAD								
X1	9841.000	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	200.000	0.000	240.000	0.000	0.000	0 000	0.000
BT	-12.000	0.000	780.000	0.000	145.000	770.000	0.000	200.000	770.900	0.000
BT	0.000	201.000	770.900	761.000	201.100	770.900	769.400	239.000	770.900	769.400
BT	0.000	239.100	770.900	762 800	240.000	770.900	0.000	245.000	770.000	0.000
BT	0.000	290.000	770.000	0.000	690 000	770.000	0.000	790.000	770.000	0.000
		U/S FACE BIRNWICK ROAD								
X1	9859.000	0.000	0.000	0.000	18.000	18.000	18.000	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	200.000	0.000	240.000	0.000	0.000	0.000	0.000
NC	0.050	0.080	0 040	0 000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	200.000	0.040	240.000	0.080	290.000	0.030	790.000	0.000
X1	9860.000	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	200.000	0.000	240.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	525.000	0 040	591.000	0.080	700.000	0.030	1075.000	0.000
X1	9873.000	55.000	525.000	591.000	13.000	13.000	13.000	0.000	-0.470	0.000
X3	0.000	0.000	0.000	525.000	0.000	591.000	0.000	0.000	0.000	0.000
GR	829.200	0.000	829.800	25.000	830.300	50.000	830.700	75.000	830.400	100.000
GR	830.200	125.000	827.400	150.000	822.600	175.000	818.800	200.000	812.900	225.000
GR	808.300	250.000	803.900	275 000	800.300	300.000	795.100	325.000	792.900	350.000
GR	788.200	375.000	784.800	400.000	782.000	425.000	780.600	450.000	779.800	475.000
GR	778.300	500.000	777.400	507.000	765.600	525.000	761.900	531.500	761.800	534 500
GR	761.200	540.000	761.200	545.000	761.200	550.000	761.400	555.000	761.300	560.000
GR	761.300	565.000	761.100	568.000	761.800	569.500	762.500	575.000	766.300	591.000
GR	766 300	600.000	766.300	625.000	765.800	650.000	765.100	675.000	764.700	700.000
GR	765.000	725.000	767.400	750 000	768.100	775.000	767.900	800.000	767.400	825 000
GR	766.800	850.000	766.100	875.000	766.400	900.000	766.600	925.000	766.600	950.000
GR	766.700	975.000	767.100	1000.000	767.000	1025.000	767.100	1050.000	766.900	1075.000
NH	4.000	0 050	525.000	0.040	591.000	0.080	700.000	0.030	1075.000	0.000
		VALLEY SECTION A, FIELD SECTION 1								
X1	10200.000	0.000	0.000	0.000	327.000	327.000	327.000	0.000	0.470	0.000
NC	0.035	0.070	0.045	0.300	0.500	0.000	0.000	0.000	0.000	0.000
X1	11130.000	53.000	500.000	539.000	790.000	790.000	930.000	0.000	-0.470	0.000
X3	0.000	0.000	0.000	355.000	0.000	684.000	0.000	0.000	0.000	0.000
GR	806.000	0.000	804.400	25.000	801.400	50.000	799.700	69.000	795.200	80.000
GR	789.200	100.000	788.700	125.000	788.400	150.000	787.400	175.000	783.400	200.000
GR	780.300	225.000	777.100	250 000	775.500	275.000	773.500	300.000	770.400	325.000
GR	768.400	350.000	768.300	375.000	768.600	400.000	768.500	425.000	768.200	450.000
GR	767.900	475.000	767.300	500.000	764.200	501.000	764.000	501.500	763.600	505.000
GR	763.200	510.000	763.200	515.000	762.900	520.000	762.900	525.000	763.100	530.000
GR	763.600	533.000	764.200	534.000	766.500	539.000	767.000	550.000	768.300	575.000
GR	768.800	600.000	768.800	625 000	769.000	650.000	768.500	675.000	769.000	700.000
GR	769.000	719.000	772.400	725.000	777.700	750.000	778.800	775.000	777.800	800.000
GR	775.200	825.000	776.500	850.000	777.500	875.000	779.300	900.000	780.300	925.000
GR	781.600	950.000	782.500	975.000	783.300	1000.000	0 000	0.000	0.000	0.000

NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION B,FIELD SECTION 2								
X1	11530.000	0 000	0.000	0.000	330.000	330.000	400.000	0.000	0.470	0.000
X3	0.000	0.000	0.000	439.000	0.000	602.000	0.000	0.000	0.000	0.000
X1	11730.000	45.000	500.000	554.500	200.000	200.000	200.000	0.000	0.000	0.000
X4	1 000	774.200	487.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	786 800	0.000	784 800	25.000	782.600	50.000	780.500	75.000	778.800	100.000
GR	777.400	125.000	776.400	150.000	775.600	175.000	775.100	200 000	774.800	225.000
GR	774.400	250.000	774.000	325.000	774.000	350.000	774.100	375.000	774.200	400.000
GR	774.200	425.000	774.300	450.000	774.100	462.000	774.200	487.600	768.200	500.000
GR	768.200	500.100	765.000	514.000	764.400	516.000	763.600	518.500	763.400	520.000
GR	763.100	525.000	763.500	530.000	763.600	535.000	763.800	540.000	764.100	545.000
GR	764.400	545.800	766.800	554.500	766.800	554.600	771.700	563.000	773.800	567.300
GR	773.800	567.400	774.200	600.000	774.200	625.000	773.900	650.000	773.700	675.000
GR	773.500	700.000	773.200	725.000	773.000	750.000	772.700	775.000	772.500	800.000
NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE TIPTON HIGHWAY BRIDGE								
X1	11731.000	0.000	0.000	0.000	1.000	1.000	1.000	0.000	0.000	0.000
BT	-35.000	0.000	786.800	0.000	25 000	784.800	0 000	50.000	782.600	0.000
BT	0.000	75.000	780 500	0.000	100.000	778.800	0 000	125.000	777.400	0.000
BT	0 000	150.000	776 400	0.000	175 000	775.600	0.000	200.000	774.000	0.000
BT	0.000	225.000	774.800	0.000	250.000	774.400	0.000	325.000	774.000	0.000
BT	0.000	350.000	774.000	0.000	375.000	774.100	0.000	400.000	774.200	0.000
BT	0.000	425 000	774.200	0.000	450.000	774.300	0.000	462.000	774.100	0.000
BT	0.000	487.600	774.500	0.000	487.700	777.200	0.000	500.000	777.200	768.200
BT	0 000	500.100	777.200	771.800	554.500	777.100	771.800	554.600	777.100	766.800
BT	0.000	567 300	777.200	0.000	567.400	774.500	0.000	600.000	774.200	0.000
BT	0.000	625.000	774.200	0.000	650.000	773.900	0.000	675.000	773.700	0.000
BT	0.000	700 000	773.500	0.000	725.000	773.200	0.000	750.000	773.000	0.000
BT	0.000	775.000	772.700	0.000	800.000	772.500	0.000	0.000	0.000	0.000
		U/S FACE TIPTON HIGHWAY BRIDGE								
X1	11774.000	0.000	0.000	0.000	43.000	43.000	43.000	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
NC	0.080	0.040	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	11775 000	0.000	0.000	0.000	1.000	1.000	1.000	0 000	0.000	0.000
		FIELD SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 3								
X1	11885.000	27.000	275.000	325.000	110.000	110.000	110.000	0.000	-2.850	0.000
GR	774.800	0.000	774.200	25.000	773.800	50.000	772.600	75 000	772.000	100.000
GR	773.400	125.000	771 700	150.000	770.600	175.000	772.600	200.000	772.800	225.000
GR	773.000	250.000	771.100	275.000	767.900	284 000	766.700	292.500	766.400	293.000
GR	766.200	295 000	766.100	300.000	766.400	305.000	766.500	310.000	766.600	314.000
GR	766.700	314.500	766.500	315 000	773.400	325.000	777.500	350.000	777.500	400.000
GR	776.300	550.000	775.000	675.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.030	0.000	0.000	0 300	0.500	0.000	0.000	0 000	0.000	0.000
X1	12920.000	22.000	275.000	325.000	1035.000	1035.000	1035.000	0.000	-1.450	0.000
GR	774.800	0.000	773.800	50.000	772.600	75.000	772.000	100.000	773.400	125.000
GR	771.700	150.000	770.600	175.000	772.600	200.000	772.800	225.000	773.000	250.000
GR	771.100	275.000	767 900	284.000	766.700	292.500	766.400	293.000	766.100	300.000
GR	766.700	314.500	766.500	315.000	773.400	325.000	777.500	350.000	777.800	425.000
GR	777.300	500.000	778.700	600.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0 000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
		FILED SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 4								
X1	13300.000	0.000	0.000	0.000	380.000	380.000	380.000	0.000	0.510	0.000
X3	0.000	0.000	0.000	240.000	0.000	360.000	0.000	0.000	0.000	0.000
X1	13400.000	55.000	500.000	540.000	100.000	100.000	100.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	500.000	0.000	540.000	0.000	0.000	0.000	0.000
GR	779.700	0.000	788.800	25.000	777.900	50.000	777.200	75.000	776 600	100.000
GR	776.100	125.000	775 600	150.000	775.100	175.000	774.900	200.000	774.800	225.000
GR	774.800	250.000	774.700	275.000	774.700	300.000	775.000	325.000	775 300	350.000
GR	775.600	375.000	775.700	400 000	773.000	425.000	773.000	450.000	773.000	470.000
GR	769 800	497.000	769.500	500.000	769.500	500.100	766.500	510.200	766.200	510.300
GR	765.800	511.800	765.700	515.000	765.400	520.000	765.800	525.000	765.800	530 000
GR	766.200	535.000	766.100	540.000	766.100	540.100	775.400	543.000	776.000	570.000
GR	776.000	575.000	776.000	600.000	776.000	625.000	776 000	650.000	776 600	675.000
GR	776.700	700.000	776.900	725.000	777.200	750.000	777 600	775.000	778.000	800.000
GR	778.500	825.000	779.000	850.000	779.800	875.000	780.700	900.000	781.900	925.000
GR	783.200	950.000	784.700	975.000	786.300	1000.000	788.000	1025.000	789.900	1050.000

NC	0.000	0.000	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE COUNTRY CLUB ROAD								
X1	13401.000	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	500.000	0.000	540.000	0.000	0.000	0.000	0.000
BT	-43.000	0.000	779.700	0.000	25.000	778.800	0.000	50.000	777 900	0.000
BT	0 000	75.000	777.200	0.000	100.000	776.600	0.000	125.000	776 100	0.000
BT	0.000	150.000	775.600	0.000	175.000	775.100	0.000	200.000	774.900	0.000
BT	0.000	250.000	774.800	0.000	275.000	774.800	0.000	300.000	774.700	0.000
BT	0.000	325.000	775.000	0.000	350.000	775.300	0.000	375.000	775.600	0.000
BT	0.000	400.000	775.700	0.000	425.000	776.000	0.000	450.000	776.300	0 000
BT	0.000	470.000	776.600	0.000	500.000	776.400	769.500	500.100	776.900	775.100
BT	0.000	540.000	777.000	775.300	540.100	777.000	766.100	575.000	777.100	0.000
BT	0.000	600.000	777 100	0.000	625.000	777.000	0.000	650.000	776.800	0.000
BT	0.000	675.000	776.600	0.000	700.000	776.700	0.000	725.000	776.900	0.000
BT	0.000	750.000	777.200	0.000	775.000	777.600	0.000	800.000	778.000	0.000
BT	0.000	825.000	778.500	0.000	850.000	779.000	0.000	875.000	779.800	0.000
BT	0.000	900.000	780.700	0.000	925.000	781.900	0.000	950.000	783.200	0.000
BT	0.000	975.000	784.700	0.000	1000.000	786.300	0.000	1025.000	788.000	0.000
BT	0.000	1025.000	789.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		U/S FACE COUNTRY CLUB ROAD								
X1	13429.000	0.000	0.000	0.000	28.000	28.000	28.000	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	500.000	0.000	540.000	0.000	0.000	0.000	0.000

NC	0.070	0.035	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	13430 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	500.000	0.000	540.000	0.000	0.000	0.000	0.000
		VALLEY SECTION C, FIELD SECTION 5								
X1	13630.000	43.000	275.000	325.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	774.800	0.000	774.200	25.000	773.800	50.000	772.600	75.000	772.000	100.000
GR	773.400	125.000	771.700	150.000	770.600	175.000	772.600	200.000	772.800	225.000
GR	773.000	250.000	771.100	275.000	767.900	284.000	766.700	292.500	766.400	293.000
GR	766.200	295 000	766.100	300.000	766.400	304.000	766.500	310.000	766.600	314.000
GR	766.700	314.500	766.500	315.000	773.400	325.000	775.100	350.000	775.600	375.000
GR	775.800	400.000	776.200	425.000	776.600	450.000	776.900	457.000	777.300	500.000
GR	777.400	525.000	777.800	550.000	778.200	575.000	778.900	600 000	779.800	625.000
GR	780.200	650.000	780.400	675.000	780.800	700.000	780.900	725 000	781.100	750.000
GR	781.400	775.000	782.200	800.000	781.900	825.000	0.000	0.000	0.000	0.000
NC	0.050	0.000	0.000	0.300	0.500	0.000	0.000	0 000	0.000	0.000
		VALLEY SECTION D, FIELD SECTION 6								
X1	16750.000	30.000	366.000	400.000	2920.000	2970.000	3120.000	0.000	0.000	0.000
X4	1.000	777.400	200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	780.000	0.000	777.500	225.000	776.700	250.000	776.900	275.000	777.000	300.000
GR	777.500	325.000	776.900	350.000	777.300	366.000	772.800	371.500	772.400	373.000
GR	772.400	375.000	771.900	380.000	771.700	385.000	771.600	390.000	771.400	395.000
GR	772.600	397.500	772.800	398.000	777.100	400.000	783.000	425.000	788.300	450.000
GR	794.100	475.000	798.500	500.000	801.900	525.000	803.000	550.000	830.700	575.000
GR	804.100	600.000	804.500	625.000	804.900	650.000	805.300	675.000	805.400	700.000
NC	0 080	0.080	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		FILED SEECTION 8 MOVED D/S								
X1	18380.000	47.000	500.000	550.000	1630.000	1630.000	1630.000	0.000	-2.000	0.000
X3	0.000	0.000	0.000	395.000	0.000	610.000	0.000	0.000	0.000	0.000
GR	811.600	0.000	810.000	25.000	808.600	50.000	807.000	75.000	805.600	100.000
GR	804 500	125.000	802.900	150.000	801.300	175.000	799.900	200.000	798.300	225.000
GR	796.700	250.000	795.400	275.000	794.100	300.000	792.700	325.000	792.100	350.000
GR	790.100	375.000	787.800	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	779.300	500.000	778.600	505.000	776.400	510.500	775.600	511.000	775.100	511.500
GR	775.000	515.000	775.000	520.000	775.000	525.000	775.100	530.000	775.100	535.000
GR	775.000	540.000	775.200	541.000	775.600	542.500	776.600	544.000	778.300	550.000
GR	781.800	575.000	782.800	600.000	783.500	625.000	783.430	650.000	783.070	675.000
GR	782.800	700.000	782.800	725.000	782.900	750.000	782.600	775.000	782.800	800.000
GR	782.900	825.000	782.900	850.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
X1	18580.000	57.000	497.000	557.000	200.000	200.000	200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	497.000	0.000	557.000	0.000	0.000	0.000	0.000
GR	798.700	0.000	797.600	25 000	796.500	50.000	795.400	75.000	794.300	100.000
GR	793.200	125.000	792.100	150.000	791.100	175.000	790.100	200.000	789.400	225.000
GR	788.800	250.000	788.300	275.000	787.900	300.000	787.500	325.000	787.100	350.000
GR	786.800	375.000	786.400	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	781.400	497.000	781.400	497.100	779.200	501.000	778 100	505.300	775.400	511.400
GR	774.000	511.700	774.000	515.000	773 600	520.000	773.200	525.000	773.300	528.000
GR	773.900	535.000	775.100	540.000	775.400	541.000	775.700	550.000	778.900	551.800
GR	779.900	557.000	779.900	557.100	780.300	560.700	780.500	561.000	781.800	575.000

GR	782.800	600.000	783.500	625.000	783.400	650.000	783.400	675.000	783.400	700.000
GR	783.400	725 000	783.400	750.000	783.400	775 000	783.400	800.000	795.300	900.000
GR	796.300	925.000	797.300	950.000	798.400	975.000	799.400	1000.000	800.600	1025.000
GR	801.900	1050 000	803.100	1075.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.030	0.000	0.000	0.000	0.000	0.000	0.000	0.000
		D/S FACE WOLF CREEK HIGHWAY								
X1	18581.000	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	497.000	0.000	557.000	0.000	0.000	0.000	0 000
BT	-42.000	0.000	798.700	0.000	25 000	797.600	0.000	50.000	796.500	0.000
BT	0.000	75 000	795.400	0.000	100.000	794.300	0.000	125.000	793.200	0.000
BT	0.000	150.000	792.100	0.000	175.000	791.100	0.000	200.000	790.100	0.000
BT	0.000	225 000	789.400	0.000	250.000	788.800	0.000	275.000	788.300	0.000
BT	0.000	300.000	787.900	0.000	325.000	787.500	0.000	350.000	787.100	0.000
BT	0.000	375.000	786.800	0.000	400.000	786.400	0.000	425.000	786.000	0.000
BT	0.000	450.000	785.700	0.000	475.000	785.600	0.000	497.000	785.600	781.400
BT	0.000	497.100	785.600	782.500	525.000	785.900	782.500	528.000	785.900	782.500
BT	0.000	550.000	786.000	782.600	557.000	786.000	782.700	557.100	786.000	779.900
BT	0.000	561.000	786.000	0.000	575.000	786.000	0.000	600.000	786.300	0.000
BT	0.000	625.000	786 700	0.000	650.000	787.300	0.000	675.000	787.900	0.000
BT	0.000	700.000	788.500	0.000	725.000	789.200	0.000	750.000	790.000	0.000
BT	0.000	775.000	790.800	0.000	800.000	791.600	0 000	900.000	795.300	0.000
BT	0.000	925.000	796.300	0.000	950 000	797.300	0 000	1075.000	803.300	0.000
		U/S FACE WOLF CREEK HIGHWAY								
X1	18633.000	0.000	0.000	0.000	52.000	52.000	52.000	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	497.000	0.000	557.000	0.000	0.000	0.000	0.000
NC	0.030	0.030	0.035	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	18634.000	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	497.000	0.000	557.000	0.000	0.000	0.000	0.000
		VALLEY SECTION E, FIELD SECTION 8								
X1	18834.000	47.000	500.000	550.000	200.000	200.000	200.000	0.000	0.000	0.000
GR	811.600	0.000	810.000	25.000	808.600	50.000	807.000	75.000	805.600	100.000
GR	804.500	125.000	802.900	150.000	801.300	175.000	799.900	200.000	798.300	225.000
GR	796.700	250.000	795.400	275.000	794.100	300.000	792.700	325.000	792.100	350.000
GR	790.100	375.000	787.800	400.000	785.300	425.000	783.300	450.000	781.400	475.000
GR	779.300	500 000	778.600	505.000	776.400	510.500	775.600	511.000	775.100	511.500
GR	775.000	515.000	775.000	520.000	775.000	525.000	775.100	530.000	775.100	535.000
GR	775.000	540.000	775.200	541.000	775.600	542.100	776.600	544.000	778.300	550.000
GR	781.800	575.000	782.800	600.000	783.500	625.000	783.430	650.000	783.070	675.000
GR	782.800	700.000	782.800	725.000	782.900	750.000	782.600	775.000	782 800	800.000
GR	782.900	825.000	782.900	850.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.035	0.035	0.040	0.300	0.500	0.000	0.000	0.000	0.000	0.000
		VALLEY SECTION F, FIELD SECTION 9								
X1	20350.000	45.000	207.000	250.000	1200.000	1300.000	1516.000	0.000	0.000	0.000
GR	785.400	0.000	785.000	25.000	785.000	50.000	784.900	75.000	784.900	100.000
GR	784.100	125.000	783.300	150.000	783.200	175 000	783.200	195.000	781.300	200.000
GR	780.500	207.000	778.200	215.000	777.600	216.000	777.400	220.000	777.800	225.000
GR	778.000	230.000	778.000	235.000	777.700	240.500	778.200	242.000	779.100	245.000
GR	784.100	250.000	783.700	275 000	784.600	300.000	784.800	325.000	784.300	350.000

GR	784.300	375.000	784.200	400.000	783.500	425.000	783.900	450.000	785.900	475.000
GR	784 500	500.000	783.600	525.000	789.600	539.000	795.600	548.000	801.600	557.000
GR	807.600	566.000	813.600	575.000	818.700	585.000	818.500	600.000	815.600	625.000
GR	815.200	650.000	815.000	675.000	815.300	700.000	817.000	725.000	819.400	750.000
		FIELD SECTION 11 MOVED D/S								
X1	22685.000	41.000	497.000	550 000	2000.000	2000.000	2335.000	0.000	-1 710	0.000
GR	807.400	0 000	807.000	25.000	806.000	50.000	804.900	75.000	804.100	100.000
GR	802.100	125.000	798.900	150.000	795.000	175.000	793.500	200.000	792.300	225.000
GR	792.300	250.000	792.200	275.000	792.000	300.000	791.200	325.000	790.300	350 000
GR	789.500	375.000	788.700	400.000	788.800	425.000	789.000	450.000	789.500	475.000
GR	789.900	497.000	783.600	502.000	783.200	505.000	782.900	510.000	783.200	515.000
GR	783.200	520.000	783.300	525.000	783.600	530.000	786.100	550.000	789.200	575.000
GR	789.800	600.000	788.900	625.000	789.100	650.000	789 600	675.000	789.500	700.000
GR	789.000	725.000	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000
GR	788.100	850.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
X1	23420.000	58.000	500.000	548.000	735.000	735.000	735.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	500.000	0.000	548.000	0.000	0.000	0.000	0.000
GR	792 600	0.000	792.100	25.000	791.600	50.000	791.200	75.000	790.700	100.000
GR	790.300	125.000	789.900	150.000	789 600	175.000	789 300	200.000	789.000	225.000
GR	788.900	250.000	788.800	275.000	789.100	300.000	789.300	325.000	789.600	350.000
GR	790.000	375.000	788.700	400.000	788 800	425.000	789.000	450.000	789.500	475.000
GR	789.900	487.000	786.500	500.000	786.500	500.100	783.000	506.500	782.600	507.000
GR	782.200	510.000	782.100	515.000	781.700	520.000	781.500	525.000	781.800	530.000
GR	782.100	535.000	782.200	538.000	782.600	539.500	784.800	542.000	786.400	548.000
GR	786.400	548 800	787.400	563.000	787.900	563.000	789.200	575.000	789.800	600.000
GR	788.900	625.000	789.100	650.000	789.600	675.000	789.500	700.000	789.000	725.000
GR	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000	788.100	850.000
GR	799.200	875.000	799.200	900.000	799.500	925.000	799.800	950.000	800.100	975.000
GR	800 400	1000.000	800.900	1025.000	801.300	1050.000	0.000	0.000	0.000	0.000
		D/S FACE HAMILTON ROAD								
X1	23421.000	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	500 000	0.000	548.000	0.000	0.000	0.000	0.000
BT	-47.000	0.000	792.600	0.000	25.000	792.100	0.000	50.000	791.600	0.000
BT	0.000	75.000	791.200	0.000	100.000	790.700	0.000	125.000	790.300	0 000
BT	0.000	150.000	789.900	0.000	175.000	789.600	0.000	200.000	789 300	0.000
BT	0.000	225.000	789.000	0 000	250.000	788.900	0.000	275.000	788.800	0.000
BT	0 000	300.000	789.100	0.000	325.000	789.300	0.000	350.000	789.600	0.000
BT	0 000	375.000	790.000	0.000	400.000	790.500	0.000	425.000	791.200	0.000
BT	0.000	450.000	792.000	0.000	487.000	794.200	0.000	500.000	794.200	786.500
BT	0.000	500.100	794.200	793.300	525.000	793.900	793.300	548.000	794.000	793.300
BT	0.000	548.800	794.000	786.400	563.000	794.000	0.000	563.000	794.000	0.000
BT	0.000	575.000	792.800	0.000	600.000	792.600	0.000	625.000	792.600	0.000
BT	0.000	650.000	792.700	0.000	675.000	793.100	0.000	700.000	794.000	0.000
BT	0.000	725.000	794.800	0.000	750.000	796.000	0.000	775.000	797.300	0.000
BT	0.000	800.000	798.300	0.000	825.000	799.000	0.000	850.000	799.300	0.000
BT	0.000	875.000	799.200	0.000	900.000	799.200	0.000	925.000	799.500	0.000
BT	0.000	950.000	799.800	0.000	975.000	800.100	0.000	1000.000	800 400	0.000
BT	0.000	1025.000	800.900	0.000	1050 000	801.300	0.000	0.000	0.000	0.000

U/S FACE HAMILTON ROAD

X1	23437.000	0.000	0.000	0.000	16.000	16.000	16.000	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	500.000	0.000	548.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.040	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	23438.000	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	500.000	0.000	548.000	0.000	0.000	0.000	0.000
X1	23638.000	41.000	497.000	550.000	200.000	200.000	200.000	0.000	-0.470	0.000
X3	0 000	0.000	0.000	300 000	0.000	748.000	0.000	0.000	0.000	0.000
GR	807.400	0.000	807.000	25.000	806.000	50.000	804.900	75.000	804.100	100.000
GR	802.100	125.000	798.900	150.000	795.000	175.000	793.500	200.000	792.300	225.000
GR	792.300	250.000	792.200	275.000	792.000	300.000	791.200	325.000	790.300	350.000
GR	789.500	375.000	788.700	400.000	788.800	425 000	789.000	450.000	789.500	475.000
GR	789.900	497.000	783.600	502 000	783.200	505.000	782.900	510.000	783.200	515.000
GR	793.200	520.000	783.300	525.000	783.600	530.000	786.100	550.000	789.200	575.000
GR	799.800	600.000	788.900	625.000	789.100	650.000	789 600	675.000	789.500	700.000
GR	789.000	725.000	788.300	750.000	787.400	775.000	787.800	800.000	788.200	825.000
GR	788.100	850.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000

VALLEY SECTION G, FIELD SECTION 11

X1	23738.000	0.000	0.000	0.000	100.000	100.000	100.000	0.000	0.470	0.000
X1	24738.000	0.000	0.000	0.000	950.000	950.000	1000.000	0.000	1.630	0.000
X1	25738.000	0.000	0.000	0.000	950.000	950.000	1000.000	0.000	1.630	0.000
X1	27738 000	0.000	0.000	0.000	1900.000	1900.000	2000.000	0.000	3.260	0.000
NC	0.000	0.000	0.045	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FILED SECTION 12 MOVED D/S

X1	29800.000	46.000	250.000	311.000	1900.000	1900.000	2062.000	0.000	-3.630	0.000
GR	805.000	0.000	805.100	25.000	805.000	50.000	804.300	75.000	803.100	100.000
GR	802.600	125.000	802.500	150.000	802.000	175.000	802.000	200.000	802.200	225.000
GR	802 300	250.000	797.100	256.000	796.700	258.000	796.400	260.000	796.600	265.000
GR	796.900	270.000	797.000	275.000	797.000	280.000	797.000	285.000	797.000	290.000
GR	796.900	295.000	797.100	300.000	797.300	302.000	803.500	311.000	804.100	325.000
GR	804.200	350.000	804.500	375.000	805.100	400.000	804.900	425.000	804.500	450.000
GR	804.700	475.000	810.700	496.000	816.700	505.000	822.700	515.000	825.500	525.000
GR	828.700	550.000	829 700	575.000	829.700	600 000	829.300	625.000	827.400	650.000
GR	825.400	675.000	822.000	700.000	820.000	725.000	818.400	750.000	818.400	775.000
GR	818.400	800.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

VALLEY SECTION H, FIELD SECTION 12

X1	31800.000	0.000	0.000	0.000	2000.000	2000.000	2000.000	0.000	3.630	0.000

FIELD SECTTION 12 MOVED TO U/S STUDY LIMIT AT US 223

X1	32000.000	0.000	0.000	0.000	200.000	200.000	200.000	0.000	0.360	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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   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

*PROF 1

CCHV=   0.300 CEHV=   0.500
*SECNO 5000.000
3280 CROSS SECTION    5000.00 EXTENDED       3.14 FEET

                FIELD SECTION 1 MOVED DOWNSTREAM, STARTING WATER SURFACE
                FROM DAM SAFETY REPORT PLUS .5 FT
  5000.00      8.94    763.00      0.00    763.00    763.02      0.02      0.00      0.00    758.56
    1840.        6.      772.      1062.      15.      505.      1685.        0.        0.     759.26
     0.00      0.40      1.53      0.63     0.060     0.040     0.060     0.000    754.06    518.23
 0.000116        0.        0.        0.         0         0         0      0.00    556.77   1075.00


*SECNO 6600.000
3280 CROSS SECTION    6600.00 EXTENDED       1.30 FEET

  6600.00      7.10    763.32      0.00      0.00    763.40      0.08      0.35      0.03    760.72
    1840.        3.      1086.     751.         5      384.      796.        62.       20.     761.42
     0.22      0.63      2.83      0.94     0.060     0.040     0.060     0.000    756.22    521.03
 0.000575     1300.     1600.     1600.         2         0         0      0.00    553.97   1075.00

*SECNO 8200.000

3265 DIVIDED FLOW

3280 CROSS SECTION    8200.00 EXTENDED       0.42 FEET

  8200.00      6.22    764.60      0.00      0.00    764.80      0.20      1.34      0.06    762.88
    1840.        2.      1347.     492.         2.      325.      405.        94.       37.     763.58
     0.34      0.78      4.14      1.21     0.060     0.040     0.060     0.000    758.38    522.37
 0.001530     1300.     1600.     1350.         3         0         0      0.00    473.53   1075.00


CCHV=   0.500 CEHV=   1.000
*SECNO 9810.000
3280 CROSS SECTION    9810.00 EXTENDED       0.96 FEET


3470 ENCROACHMENT STATIONS=      530.0      586.0  TYPE=       1  TARGET=        56.000
                FIELD SECTION 1 MOVED DOWNSTREAM
  9810.00      6.76    767.30      0.00      0.00    767.78      0.48      2.70      0.28100000.00
    1840.        0.      1840.       0.         0.      332.        0.      112.        45.  100000.00
     0.42      0.00      5.55      0.00     0.000     0.035     0.000     0.000    760.54    530.00
 0.001931      900       1610.     1340.         3         0         0      0.00     56.00    586.00
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	GLOB	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 9840.000

3470 ENCROACHMENT STATIONS= 200.0 240.0 TYPE= 1 TARGET= 40.000

9840.00	6.78	767.38	0.00	0.00	768.29	0.92	0.08	0.44	766.30
1840.	0	1840	0.	0.	240.	0.	113.	45.	100000.00
0.42	0.00	7.68	0.00	0.000	0.035	0.000	0.000	760.60	200.00
0.003985	30	30.	30.	2	0	0	0.00	40.00	240.00

*SECNO 9841.000

3370 NORMAL BRIDGE, NRD= 12 MIN ELTRD= 770.00 MAX ELLC= 769.40

3470 ENCROACHMENT STATIONS= 200.0 240.0 TYPE= 1 TARGET= 40.000
D/S FACE BIRNWICK ROAD

9841.00	6.78	767.38	0.00	0.00	768.35	0.97	0.00	0.05	766.30
1840.	0.	1840.	0.	0.	233.	0.	113.	45.	100000.00
0.42	0.00	7.90	0.00	0.000	0.030	0.000	0.000	760.60	200.00
0.003194	1.	1	1.	0	0	0	-6.68	40.00	240.00

*SECNO 9859.000

3370 NORMAL BRIDGE, NRD= 12 MIN ELTRD= 770.00 MAX ELLC= 769.40

3470 ENCROACHMENT STATIONS= 200.0 240.0 TYPE= 1 TARGET= 40.000
U/S FACE BIRNWICK ROAD

9859.00	6.89	767.49	0.00	0.00	768.42	0.94	0.06	0.02	766.30
1840.	0.	1840.	0.	0.	237.	0.	113.	45.	100000.00
0.42	0.00	7.76	0.00	0.000	0.030	0.000	0.000	760.60	200.00
0.003035	18.	18.	18.	2	0	0	-6.89	40.00	240.00

1490 NH CARD USED
*SECNO 9860.000

3470 ENCROACHMENT STATIONS= 200.0 240.0 TYPE= 1 TARGET= 40.000

9860.00	7.03	767.63	0.00	0.00	768.47	0.84	0.00	0.05	766.30
1840.	0.	1840.	0.	0.	250.	0.	113.	45.	100000.00
0.42	0.00	7.37	0.00	0.000	0.040	0.000	0.000	760.60	200.00
0.004599	1.	1.	1.	2	0	0	0.00	40.00	240 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

1490 NH CARD USED
*SECNO 9873.000
3280 CROSS SECTION 9873.00 EXTENDED 2.07 FEET

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 525.0 591.0 TYPE= 1 TARGET= 66.000

9873.00	7 87	768.50	0.00	0.00	768.78	0.28	0.03	0.28	765.13
1840.	0.	1840.	0.	0.	434	0.	113.	45.	99999.53
0.42	0.00	4.24	0.00	0.000	0.040	0.000	0.000	760.63	525.00
0.001222	13.	13.	13	3	0	0	0.00	66.00	591.00

1490 NH CARD USED
*SECNO 10200.000
3280 CROSS SECTION 10200.00 EXTENDED 2.10 FEET

VALLEY SECTION A, FIELD SECTION 1

10200.00	7.90	769.00	0.00	0.00	769.02	0.02	0.11	0.13	765.60
1840.	4.	716.	1120.	9.	436.	1180.	120.	48.	766.30
0.50	0.48	1.64	0.95	0.050	0.040	0.038	0.000	761.10	519.82
0.000163	327.	327.	327.	2	0	0	0.00	555.18	1075.00

CCHV= 0.300 CEHV= 0.500
*SECNO 11130.000

3470 ENCROACHMENT STATIONS= 355.0 684.0 TYPE= 1 TARGET= 329.000

11130.00	6.81	769.24	0.00	0.00	769.45	0.22	0.33	0.10	766.83
1840.	525.	1082.	233.	216.	239.	190	142.	56.	766.03
0.57	2.43	4.53	1 22	0.035	0.045	0.070	0.000	762.43	355.00
0.001851	790.	930.	790.	2	0	0	0.00	329.00	684.00

CCHV= 0.500 CEHV= 1.000
*SECNO 11530.000

3470 ENCROACHMENT STATIONS= 439.0 602.0 TYPE= 1 TARGET= 163.000

VALLEY SECTION B, FIELD SECTION 2

11530.00	7.07	769.97	0.00	0.00	770.26	0.29	0.73	0.07	767.30
1840.	394.	1229.	218.	126.	249.	131.	147.	58.	766.50
0.59	3.13	4.93	1.66	0.035	0.045	0.070	0.000	762.90	439.00
0.002081	330.	400.	330.	2	0	0	0.00	163.00	602.00

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
*SECNO 11730.000									
11730.00	7.37	770.47	0.00	0.00	770.98	0.51	0.50	0.22	768.20
1840.	13.	1808.	19.	5.	312.	12.	149.	58.	766.80
0 60	2.38	5.79	1.63	0.035	0.045	0 070	0.000	763.10	495.35
0 003065	200.	200.	200.	2	0	0	0.00	65.54	560.89
*SECNO 11731.000									
3370 NORMAL BRIDGE, NRD= 35 MIN ELTRD= 772.50 MAX ELLC= 771.80									
D/S FACE TIPTON HIGHWAY BRIDGE									
11731 00	7.37	ZZ0.47	0.00	0.00	771.01	0.54	0.00	0.03	768.20
1840.	0.	1840.	0.	0.	313.	0.	149.	58.	766.80
0.60	0.00	5.89	0.13	0.000	0.030	0.070	0.000	763.10	495.34
0.001487	1.	1.	1.	0	0	0	-17.05	65.55	560.89
*SECNO 11774.000									
3370 NORMAL BRIDGE, NRD= 35 MIN ELTRD= 772.50 MAX ELLC= 771.80									
U/S FACE TIPTON HIGHWAY BRIDGE									
11774.00	7.46	770.56	0.00	0.00	771.08	0.52	0.06	0.01	768.20
1840.	0.	1840.	0.	0.	318.	0.	149.	58.	766.80
0.60	0.00	5.79	0.12	0.000	0.030	0.070	0.000	763.10	495.14
0.001409	43.	43.	43.	0	0	0	-18.15	65.92	561.06
*SECNO 11775.000									
11775.00	7.52	770.62	0.00	0.00	771.10	0.48	0.00	0.02	768.20
1840.	6.	1802.	32.	6.	321.	13.	149.	58.	766.80
0.60	0.92	5.62	2.49	0.080	0.040	0.040	0.000	763.10	495.04
0.002208	1.	1.	1.	2	0	0	0.00	66.11	561.15
*SECNO 11885.000									
FIELD SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 3									
11885.00	7.89	771.14	0.00	0.00	771.41	0.27	0.20	0.11	768.25
1840.	398.	1441.	1.	372.	310.	1.	150.	59.	770.55
0.61	1.07	4.65	0.63	0.080	0.040	0.040	0.000	763.25	37.63
0 001485	110.	110.	110.	2	0	0	0.00	291.02	328.65

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= 0.300 CEHV= 0.500
*SECNO 12920.000

12920.00	7 81	772.46	0.00	0.00	772.61	0.14	1.16	0.04	769.65
1840.	755.	1085.	0.	352.	305.	1.	166.	66.	771.95
0.71	2.15	3 55	0.44	0.030	0.040	0.040	0.000	764.65	44.35
0.000882	1035.	1035.	1035.	3	0	0	0.00	283.78	328.13

CCHV= 0 500 CEHV= 1.000
*SECNO 13300 000

3470 ENCROACHMENT STATIONS= 240 0 360.0 TYPE= 1 TARGET= 120.000
FILED SECTION 5 MOVED D/S, RT OVERBANK MODIFIED BY SECTION 4

13300.00	7.80	772.96	0.00	0.00	773.39	0.43	0.49	0.29	770 16
1840	176.	1663.	0.	56.	305.	1.	171.	67.	772.46
0.73	3.17	5.46	0.67	0.030	0.040	0.040	0.000	765.16	240.00
0.002094	380.	380.	380.	2	0	0	0.00	88.02	328.02

*SECNO 13400.000

3470 ENCROACHMENT STATIONS= 500.0 540.0 TYPE= 1 TARGET= 40.000

13400.00	7.82	773 22	0.00	0.00	773.93	0.70	0.27	0.27	769.50
1840.	0.	1840.	0.	0.	274.	0.	172.	67.	100000.00
0.73	0.00	6.72	0.00	0.000	0.040	0.000	0.000	765.40	500.00
0.003541	100.	100.	100.	2	0	0	0.00	40.00	540.00

*SECNO 13401.000

3370 NORMAL BRIDGE, NRD= 43 MIN ELTRD= 774.70 MAX ELLC= 775.30

3470 ENCROACHMENT STATIONS= 500.0 540.0 TYPE= 1 TARGET= 40.000
D/S FACE COUNTRY CLUB ROAD

13401.00	7.83	773.23	0 00	0.00	773.93	0.70	0.00	0.00	769 50
1840	0.	1840.	0.	0.	274.	0.	172.	67.	100000.00
0.73	0.00	6.72	0 00	0.000	0.030	0.000	0.000	765.40	500.00
0.001992	1.	1.	1.	0	0	0	-0.12	40.00	540.00

*SECNO 13429.000

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= 43 MIN ELTRD= 774.70 MAX ELLC= 775.30

3470 ENCROACHMENT STATIONS= 500 0 540.0 TYPE= 1 TARGET= 40.000

U/S FACE COUNTRY CLUB ROAD

13429.00	7.90	773.30	0.00	0.00	773.99	0.69	0.05	0.01	769.50
1840.	0.	1840.	0.	0.	277.	0.	172.	67.	100000.00
0.73	0.00	6 65	0.00	0.000	0 030	0.000	0.000	765.40	500 00
0.001927	28.	28.	28.	0	0	0	-0.13	40.00	540.00

*SECNO 13430 000

3470 ENCROACHMENT STATIONS= 500.0 540.0 TYPE= 1 TARGET= 40.000

13430.00	7.91	773.31	0.00	0.00	773.99	0.69	0.00	0.00	769.50
1840.	0.	1840.	0.	0.	277.	0.	172.	67.	100000.00
0.73	0.00	6.64	0.00	0.000	0.035	0.000	0.000	765.40	500.00
0.002616	1.	1.	1.	0	0	0	0.00	40.00	540.00

*SECNO 13630.000

VALLEY SECTION C, FIELD SECTION 5

13630.00	8.20	774.30	0.00	0.00	774.51	0.21	0.28	0.24	771.10
1840.	458.	1377.	4.	447	325.	6.	174.	68.	773.40
0.75	1.03	4.24	0.74	0.070	0.035	0.035	0.000	766.10	20 83
0 000888	200.	200.	200.	3	0	0	0.00	317.41	338.24

CCHV= 0.300 CEHV= 0.500

*SECNO 16750.000

VALLEY SECTION D, FIELD SECTION 6

16750.00	7.13	778.53	0.00	0.00	779.03	0.50	4.37	0.14	777.30
1840.	506.	1327.	7.	283.	202.	4.	218.	89	777.10
0.91	1.79	6.57	1.72	0.050	0.035	0.035	0.000	771.40	113.04
0 002655	2920.	3120.	2970.	3	0	0	0.00	293 02	406.06

*SECNO 18380.000

3280 CROSS SECTION 18380.00 EXTENDED 0.48 FEET

3470 ENCROACHMENT STATIONS= 395.0 610.0 TYPE= 1 TARGET= 215.000

FILED SEECTION 8 MOVED D/S

18380.00	8.37	781 37	0.00	0.00	781.63	0.26	2.53	0 07	777.30
1840.	109.	1603.	128.	102.	367.	115.	238.	97.	776.30
1.03	1.08	4.37	1 11	0 080	0.040	0.080	0.000	773.00	449.01
0 001018	1630.	1630.	1630.	1	0	0	0.00	160.99	610.00

CCHV= 0.500 CEHV= 1.000
*SECNO 18580.000

3470 ENCROACHMENT STATIONS= 497.0 557.0 TYPE= 1 TARGET= 60.000

18580.00	8.45	781.65	0.00	0.00	782.07	0.42	0.28	0.16	781.40
1840.	0.	1840.	0.	0.	354.	0.	240.	98.	100000 00
1.04	0.00	5.19	0.00	0.000	0.040	0.000	0.000	773.20	497.00
0.002107	200.	200.	200.	2	0	0	0.00	60.00	557.00

*SECNO 18581.000

3370 NORMAL BRIDGE, NRD= 42 MIN ELTRD= 785.60 MAX ELLC= 782.70

3470 ENCROACHMENT STATIONS= 497.0 557.0 TYPE= 1 TARGET= 60.000
D/S FACE WOLF CREEK HIGHWAY

18581.00	8.46	781.66	0.00	0 00	782.07	0.42	0.00	0.00	781.40
1840.	0.	1840	0.	0.	354.	0.	240.	98.	100000.00
1 04	0.00	5.19	0.00	0.000	0.030	0 000	0.000	773.20	497.00
0.001184	1.	1.	1.	0	0	0	0.00	60.00	557.00

*SECNO 18633.000

3370 NORMAL BRIDGE, NRD= 42 MIN ELTRD= 785.60 MAX ELLC= 782.70

3470 ENCROACHMENT STATIONS= 497.0 557.0 TYPE= 1 TARGET= 60.000
U/S FACE WOLF CREEK HIGHWAY

18633.00	8.53	781.73	0.00	0.00	782.14	0.41	0.06	0.01	781.40
1840.	0.	1840.	0.	0.	359.	0.	240.	98	100000.00
1.04	0.00	5.12	0.00	0.000	0.030	0.000	0.000	773.20	497.00
0.001133	52.	52.	52.	0	0	0	-0.01	60.00	557.00

*SECNO 18634.000

3470 ENCROACHMENT STATIONS= 497.0 557.0 TYPE= 1 TARGET= 60.000

18634.00	8 53	781.73	0.00	0.00	782.14	0.41	0.00	0.00	781.40
1840.	0.	1840.	0.	0.	359.	0.	240.	98.	100000.00
1.04	0.00	5.12	0.00	0.000	0.035	0.000	0.000	773.20	497.00
0.001547	1.	1.	1.	0	0	0	0.00	60.00	557.00

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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 18834.000
                    VALLEY SECTION E, FIELD SECTION B
 18834.00      7.08     782.08       0.00       0.00     782.46       0.38       0.30       0.02     779.30
    1840.       119.      1569.       152.        46.      301.        52.        242         98.      778.30
     1.05       2.58       5.21       2.94      0.030      0.035      0.030      0.000     775.00     466 07
 0.001434       200.       200.       200.          2          0          0       0.00     115.91     581.97

CCHV=    0.300 CEHV=    0.500
*SECNO 20350.000

3265 DIVIDED FLOW

                    VALLEY SECTION F, FIELD SECTION 9
 20350.00      7.18     784.58       0.00       0.00     784.93       0.34       2.46       0.01     780.50
    1840.       339.      1360.       141.       125.      258.        104        257.       105.      784.10
     1.14       2.72       5.27       1.35      0.035      0.040      0.035      0.000     777.40     109.79
 0.002011       1200.      1516.      1300.          2          0          0       0.00     341.62     527.30

*SECNO 22685.000

3265 DIVIDED FLOW

3280 CROSS SECTION  22685.00 EXTENDED       1.68 FEET

                    FIELD SECTION 11 MOVED D/S
 22685.00      6.87     788.06       0.00       0.00     788.22       0.15       3.23       0.06     788.19
    1840.        97      1113.       629.        81.      297.        337.       286.        124      784.39
     1.35       1.20       3.74       1.87      0.035      0.040      0.035      0.000     781.19     366.24
 0.001098       2000.      2335.      2000.          2          0          0       0.00     475 74     850.00

CCHV=    0.500 CEHV=    1.000
*SECNO 23420.000

3470 ENCROACHMENT STATIONS=      500.0       548.0  TYPE=       1  TARGET=       48.000
 23420.00      7.77     789.27       0.00       0.00     789.83       0.56       1.20       0.41     786.50
    1840.         0.      1840.         0.         0.      306.          0.       295.        129.  100000.00
     1.38       0.00       6.01       0.00      0.000      0.040      0.000      0.000     781 50     500.00
 0.002707       735.       735.       735.          2          0          0       0.00      48.00     548.00
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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 23421 000

3370 NORMAL BRIDGE, NRD= 47 MIN ELTRD=  788.80 MAX ELLC=  793.30


3470 ENCROACHMENT STATIONS=      500.0      548.0  TYPE=      1  TARGET=       48.000
                D/S FACE HAMILTON ROAD
 23421.00      7.77    789.27      0 00       0.00     789.83      0.56       0.00       0.00    786.50
    1840.        0.      1840.        0.         0.       306.        0.        295.        129.  100000.00
     1.38      0 00       6.01      0.00      0.000      0.040     0.000      0.000     781.50    500.00
 0.002706        1.         1         1.         0          0         0      -0.06      48.00    548.00

*SECNO 23437.000

3370 NORMAL BRIDGE, NRD= 47 MIN ELTRD=  788.80 MAX ELLC=  793.30


3470 ENCROACHMENT STATIONS=      500.0      548.0  TYPE=      1  TARGET=       48.000
                U/S FACE HAMILTON ROAD
 23437.00      7.83    789.33      0.00       0.00     789.88      0.55       0.04       0.00    786.50
    1840.        0.      1840.        0.         0.       309.        0.        295.        129.  100000 00
     1.38      0.00       5 96      0.00      0.000      0.040     0.000      0.000     781.50    500.00
 0.002643       16.        16.        16.         1          0         0      -0.06      48.00    548.00

*SECNO 23438.000

3470 ENCROACHMENT STATIONS=      500.0      548 0  TYPE=      1  TARGET=       48.000
 23438.00      7.83    789 33      0.00       0.00     789.88      0.55       0.00       0.00    786.50
    1840.        0.      1840.        0.         0.       309.        0         295.        129  100000.00
     1.38      0.00       5.95      0.00      0.000      0.040     0.000      0.000     781.50    500.00
 0.002629        1.         1         1.         0          0         0      0 00       48.00    548.00

*SECNO 23638.000
3280 CROSS SECTION  23638.00 EXTENDED      2.61 FEET


3470 ENCROACHMENT STATIONS=      300.0      748.0  TYPE=      1  TARGET=      448.000
 23638.00      7.80    790.23      0.00       0.00     790.33      0.09       0.22       0.23    789.43
    1840.       294.      1046.      500.       216.       347.      329.       298        130.     785.63
     1.41       1.36       3 02      1.52      0.035      0.040     0.035      0.000     782.43    338.66
 0.000584       200.       200.      200.         2          0         0       0.00      409.34    748.00
```

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

CCHV= 0.300 CEHV= 0.500
*SECNO 23738.000
3280 CROSS SECTION 23738.00 EXTENDED 2.21 FEET

VALLEY SECTION G, FIELD SECTION 11

23738.00	7.41	790.31	0.00	0.00	790.39	0.08	0.06	0.01	789.90
1840.	173.	910	757.	155.	326.	496.	300.	131.	786.10
1.42	1.12	2.79	1.52	0.035	0.040	0.035	0.000	782.90	349.64
0.000544	100.	100.	100.	2	0	0	0.00	500.36	850.00

*SECNO 24738.000

3265 DIVIDED FLOW

3280 CROSS SECTION 24738.00 EXTENDED 1.37 FEET

24738.00	6.57	791.10	0.00	0.00	791.33	0.23	0.86	0.08	791.53
1840.	54.	1249.	537.	47.	281.	250.	317.	141.	787.73
1.49	1.15	4.45	2.15	0.035	0.040	0.035	0.000	784.53	375.94
0.001655	950.	1000.	950	2	0	0	0.00	394.26	850.00

*SECNO 25738.000

3265 DIVIDED FLOW

3280 CROSS SECTION 25738.00 EXTENDED 1 37 FEET

25738.00	6.57	792.73	0.00	0.00	792.96	0.23	1.63	0.00	793.16
1840.	54.	1250.	536.	47.	281.	249.	330.	149.	789 36
1.57	1.15	4.45	2.15	0.035	0.040	0.035	0.000	786.16	375.99
0 001659	950.	1000.	950.	2	0	0	0.00	393.84	850.00

*SECNO 27738.000

3265 DIVIDED FLOW

3280 CROSS SECTION 27738.00 EXTENDED 1.37 FEET

27738.00	6.57	795.99	0.00	0.00	796.22	0.23	3.26	0.00	796.42
1840.	54.	1249.	537.	47.	281.	250.	356.	167.	792.62
1.72	1.15	4.44	2.15	0.035	0.040	0.035	0 000	789.42	375.90
0.001652	1900.	2000.	1900.	2	0	0	0.00	394.58	850.00

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
*SECNO 29800.000									
	FILED SECTION 12 MOVED D/S								
29800.00	6.90	799 67	0.00	0.00	799.94	0.28	3.70	0.02	798.67
1840.	287.	1553.	0.	146.	343.	0.	380.	180.	799.87
1.85	1.97	4.53	0.00	0 035	0.045	0.000	0.000	792.77	95.79
0.002039	1900.	2062.	1900.	2	0	0	0.00	214.92	310.71
*SECNO 31800.000									
	VALLEY SECTION H, FIELD SECTION 12								
31800.00	7.07	803.47	0.00	0.00	803.71	0.24	3.75	0.01	802.30
1840.	341.	1499.	0.	172.	353.	0.	404.	190.	803.50
2.00	1 98	4.25	0.00	0.035	0.045	0.000	0.000	796.40	92.30
0.001733	2000.	2000.	2000.	2	0	0	0 00	218.66	310.96
*SECNO 32000.000									
	FIELD SECTTION 12 MOVED TO U/S STUDY LIMIT AT US 223								
32000 00	7.06	803.82	0.00	0.00	804.06	0.24	0.35	0.00	802.66
1840.	336.	1504.	0.	169.	352.	0.	406.	191	803.86
2.01	1.98	4.28	0.00	0.035	0.045	0.000	0.000	796.76	92.63
0.001759	200.	200.	200.	2	0	0	0.00	218.31	310.93



1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN TOWNSHIP

3) WATERCOURSE: WOLF CREEK

4) DOCUMENT TYPE: REPORT



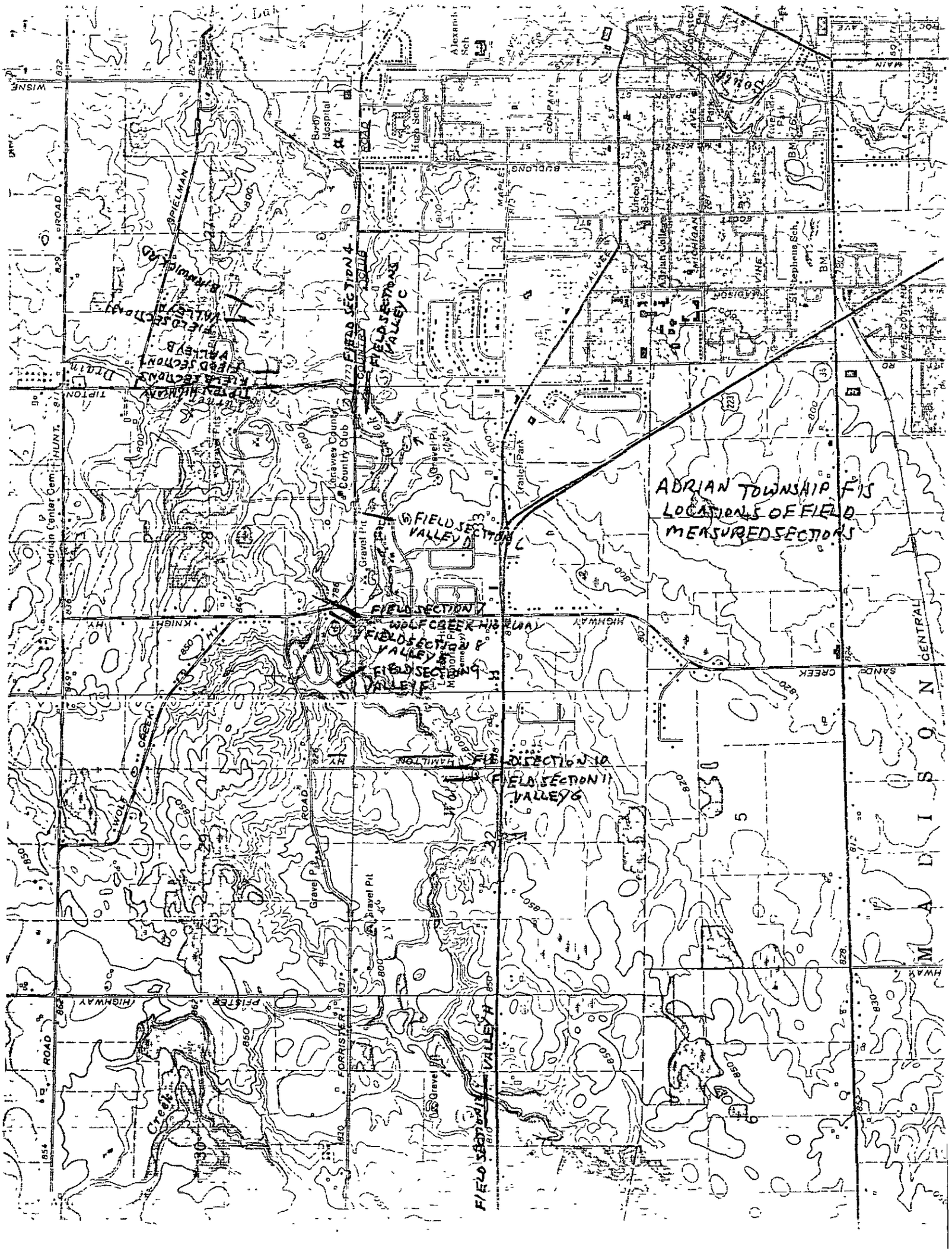
Township of Adrian Michigan FIS
Hydraulic Computation Background Information

Wolf Creek was studied by detailed methods from the downstream corporate limit at Lake Adrian to the upsteam study limit at US 223.

Manning's "n" values were obtained for the study during a site visit.

The hydraulic computations on Wolf Creek were begun at the upstream end of Lake Adrian, which is 5000 feet upstream of the corporate boundary. The starting water surface elevation was estimated based on the Dam Saftey Inspection Report for Bent Oak Dam, which forms Lake Adrian. The starting water surface elevation is 0.5 feet higher than the elevation given for the study discharge at the dam. This is to account for the headloss between the dam and the start of the hydraulic analysis. In the Flood Insurance Study Report, the backwater profile will begin at the township boundary and will start at the elevation for the discharge used in this study, as given by rating curve in the Dam Safety Inspection Report.

For the encroached run on Wolf Creek, the computations were begun using the results from the existing condition profile run.


ADRIAN TOWNSHIP FIS
LOCATIONS OF FIELD
MEASURED SECTIONS
FIELD SECTION 4
VALLEY C
FIELD SECTIONS
VALLEY C
FIELD SECTION 1
VALLEY A
FIELD SECTIONS
VALLEY B
FIELD SECTIONS
VALLEY B
FIELD SECTION 3
VALLEY D
FIELD SECTION 7
WOLF CREEK HIGHWAY
FIELD SECTION 8
VALLEY E
FIELD SECTION 9
VALLEY F
FIELD SECTION 10
FIELD SECTION 11
VALLEY G
FIELD SECTION 12
VALLEY H
Adrian Center Cem
Lenawee County Country Club
Trailer Park
Gravel Pit
Adrian College
Lincoln Sch
St Stephens Sch
Burdy Hospital
Hugh Sch
Alexander Sch
Turner Pit
Drain
Creek
WOLF CREEK
SAND CREEK
MADISON
CENTRAL
HIGHWAY
KNIGHT HY
HAMILTON HY
PFISTER HIGHWAY
FORRISTER ROAD
SPIELMAN ROAD
TIPTON ROAD
HUNT
BIRNWICK RD
WISNE
BUDLONG
MAPLE
VINE
MADISON
MICHIGAN
SCOTT
MAIN
KENZIE
PARK
COMPANY
ST
AVE
RIVER
Park
River Park
South
Lake
825
832
829
827
800
850
854
862
830
828
826
820
818
810
786
846
849
834
223
34
32
29
28
27
5
6

GRAPH PAPER GRAPHIC CONTROL CORPORATION Buffalo, New York SQUARE 10 X 10 TO THE INCH AS 0587 60

ADRIAN - WOLF CREEK
DISMOST BRIDGE IN (BIRNWICK)
SUBDIVISION

$Q = \frac{1.49}{n} AR^{2/3} S^{1/2}$

$n = .03$, $S = .002$

$Q = 2.22\ AR^{2/3}$

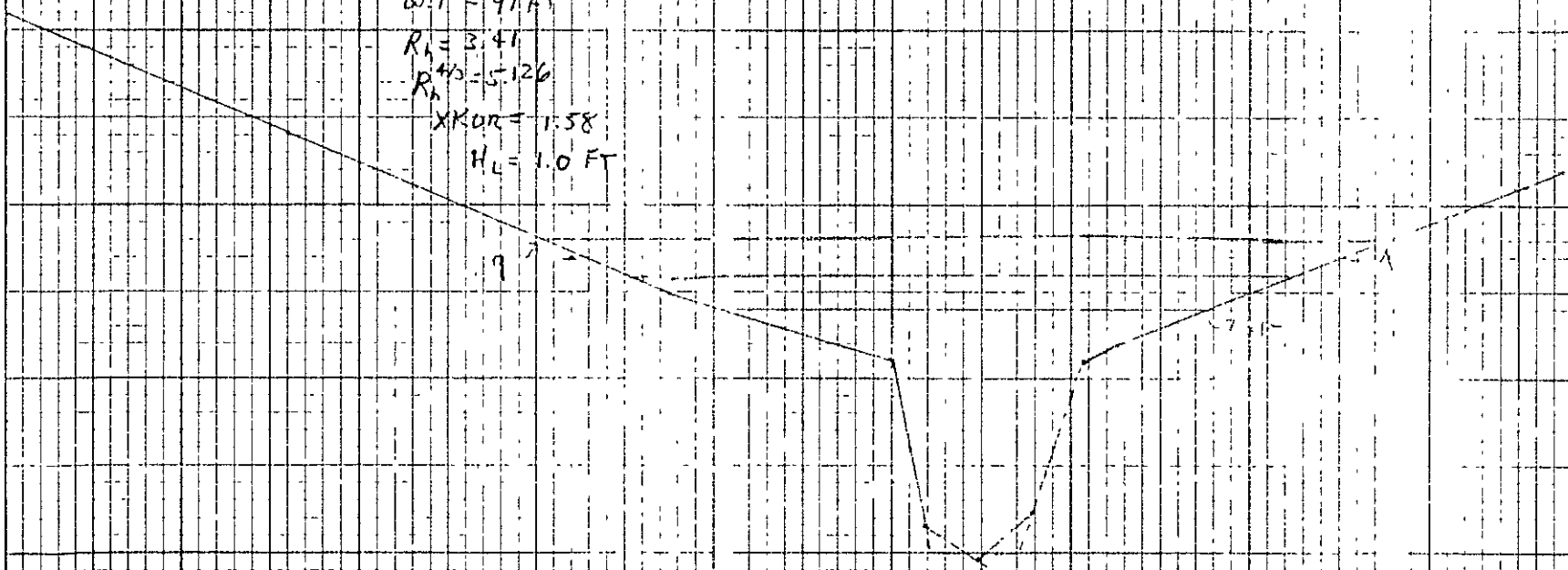
USE $d = 7.5$ FT DEEP

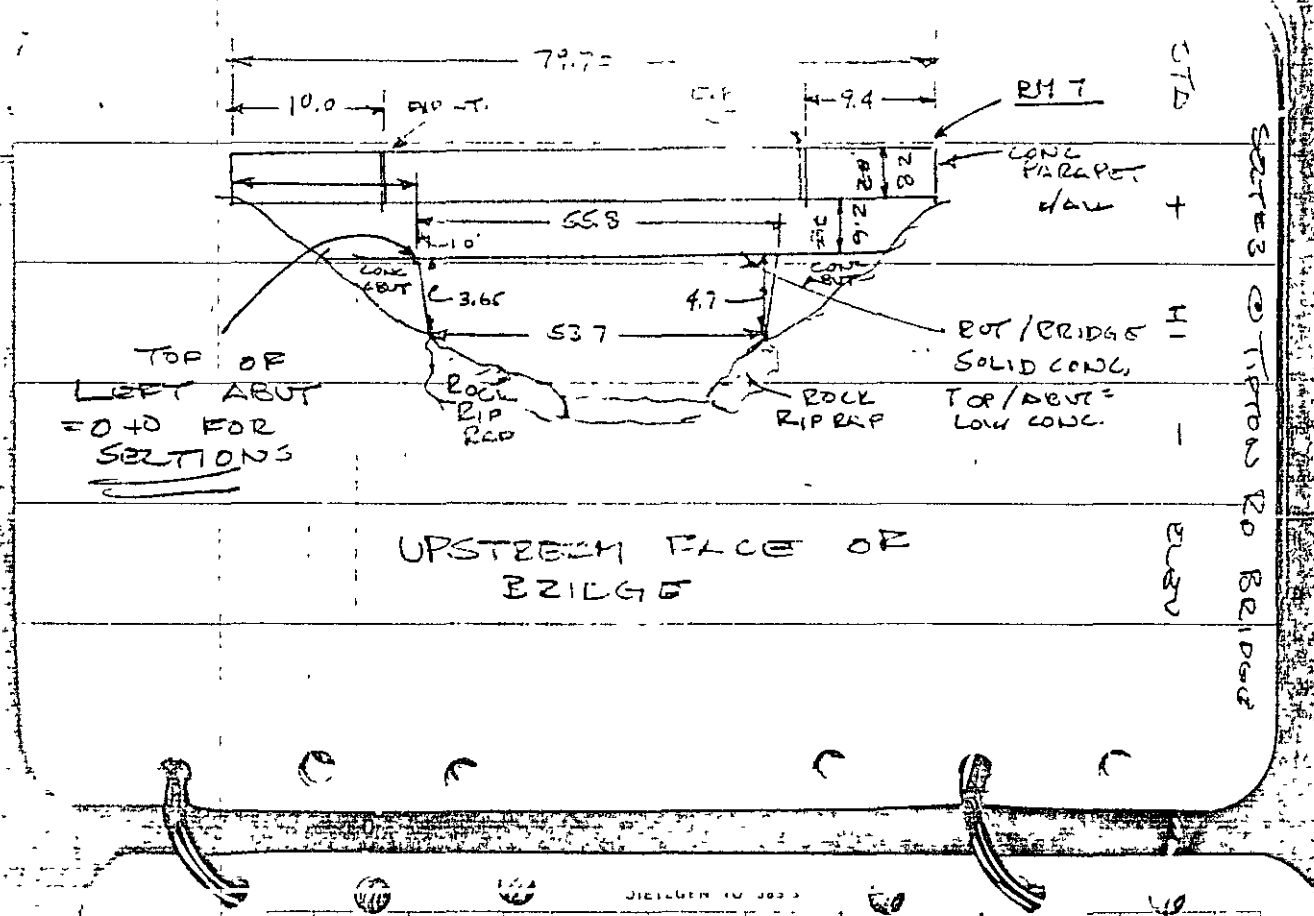
2.0 FT ABOVE BANK

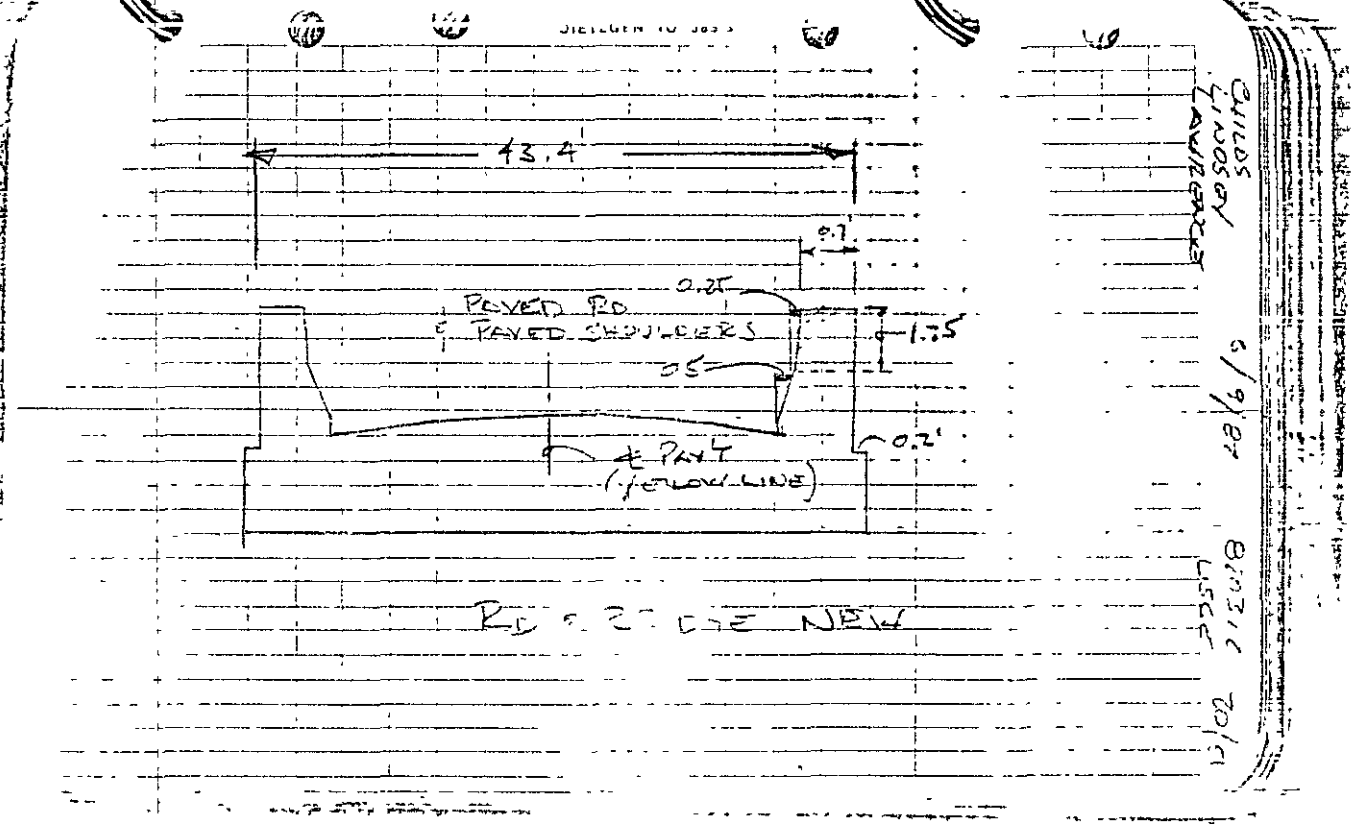
8.15' DEEP (AVG)
38 FT WIDE
310 SQ FT
$V = 6.45$
$V^2/2g = .646$

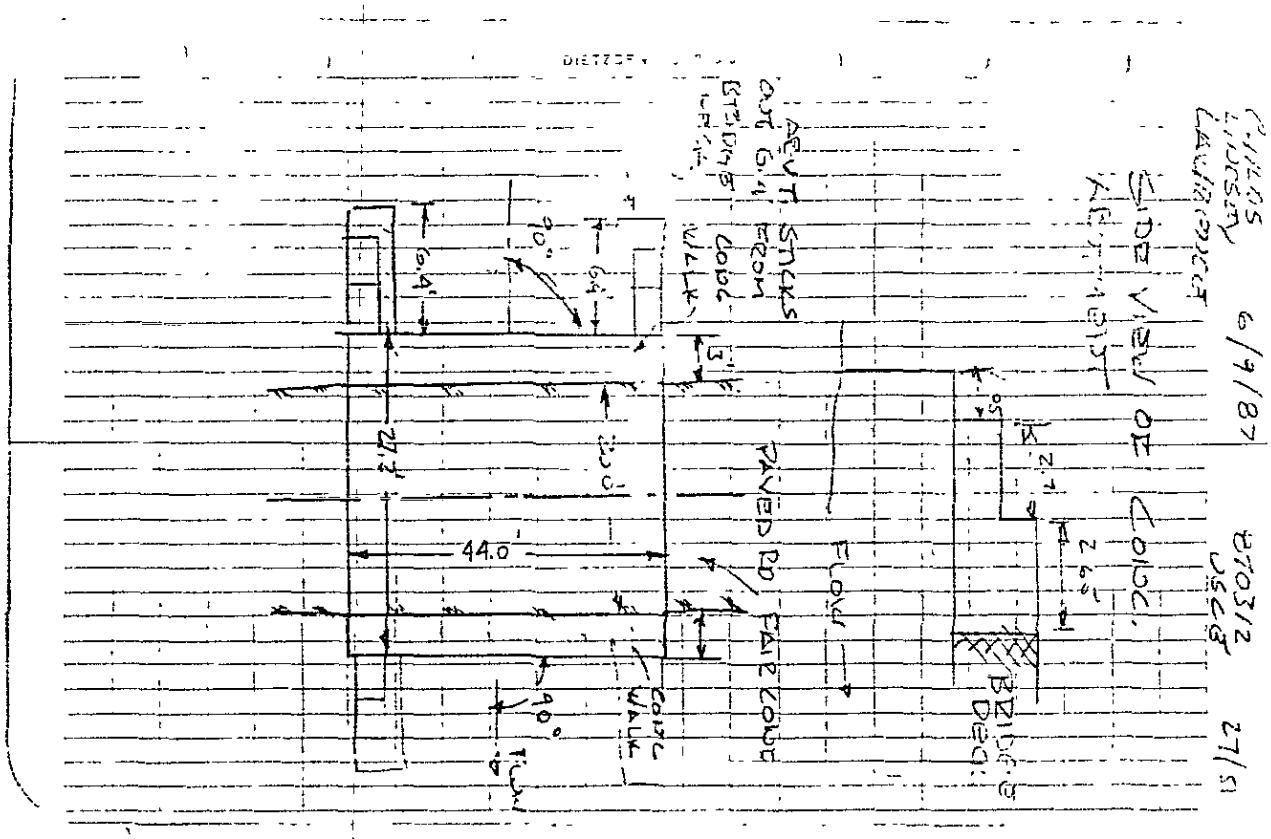
$XKOR = 1 + .5 + \frac{29\ ln^2 L}{R^{4/3}}$

W.P = 91 FT
$R_h = 3.41$
$R_h^{4/3} = 5.126$
XKOR = 1.58
$H_L = 1.0$ FT

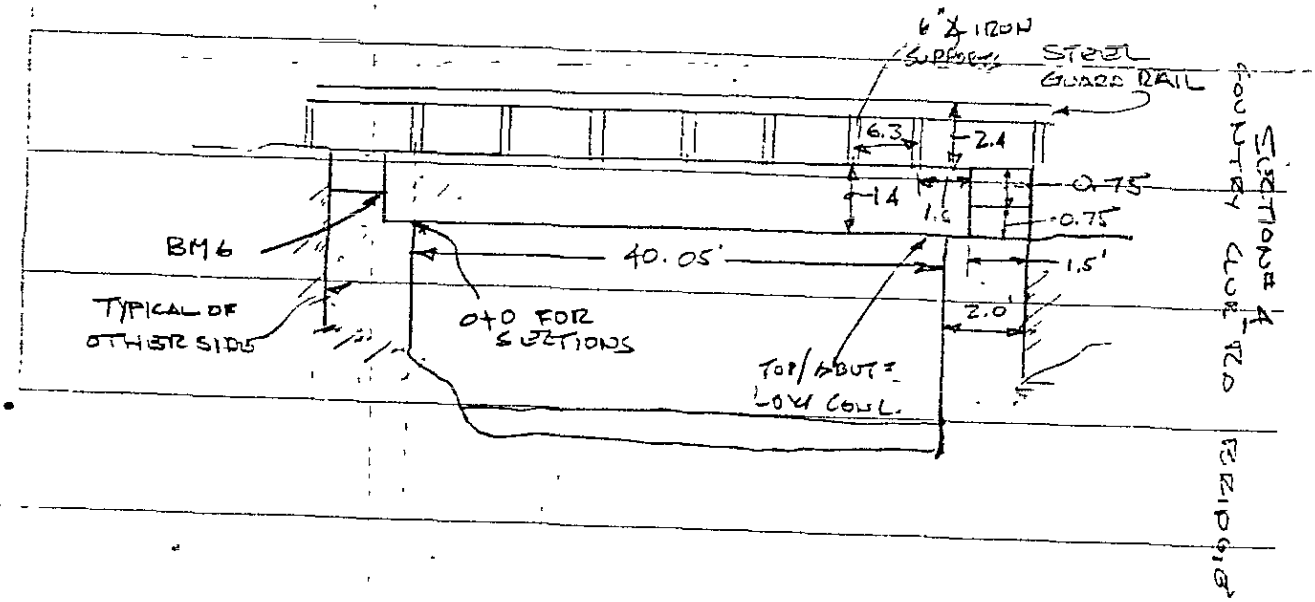


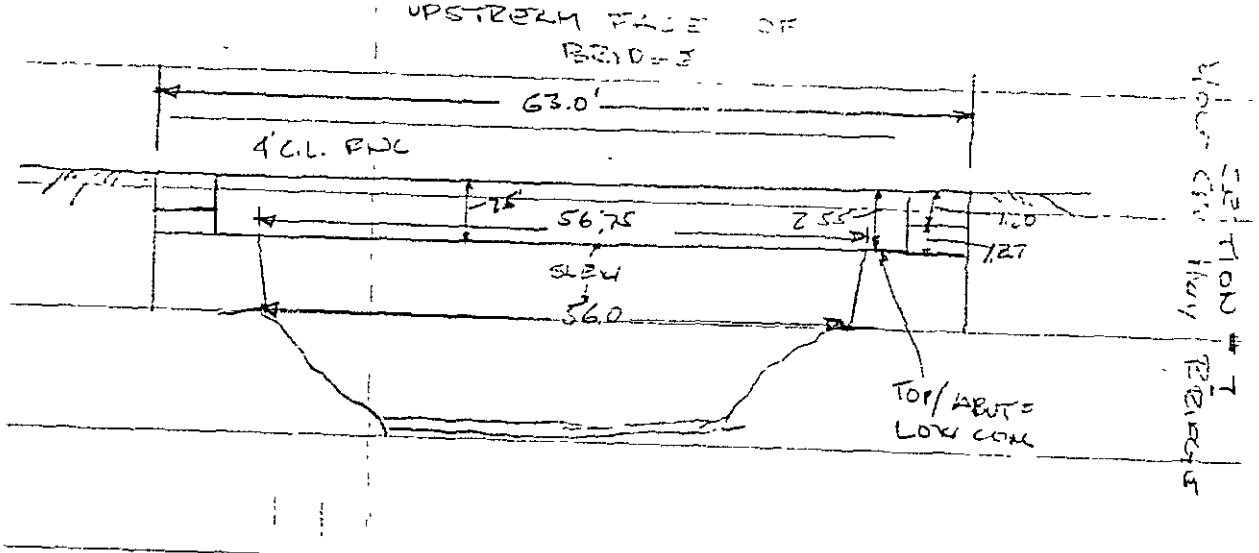

79.7
10.0
9.4
RM 7
CONC PARAPET
55.8
2.8
2.6
1.0'
CONC ABUT
3.65
4.7
53.7
TOP OF LEFT ABUT =0+0 FOR SECTIONS
ROCK RIP RAP
ROCK RIP RAP
BOT/BRIDGE SOLID CONC.
TOP/ABUT = LOW CONC.
UPSTREAM FACE OF BRIDGE
STD
+
H
-
ELEV
SECT #3 @ TIPTON RD BRIDGE

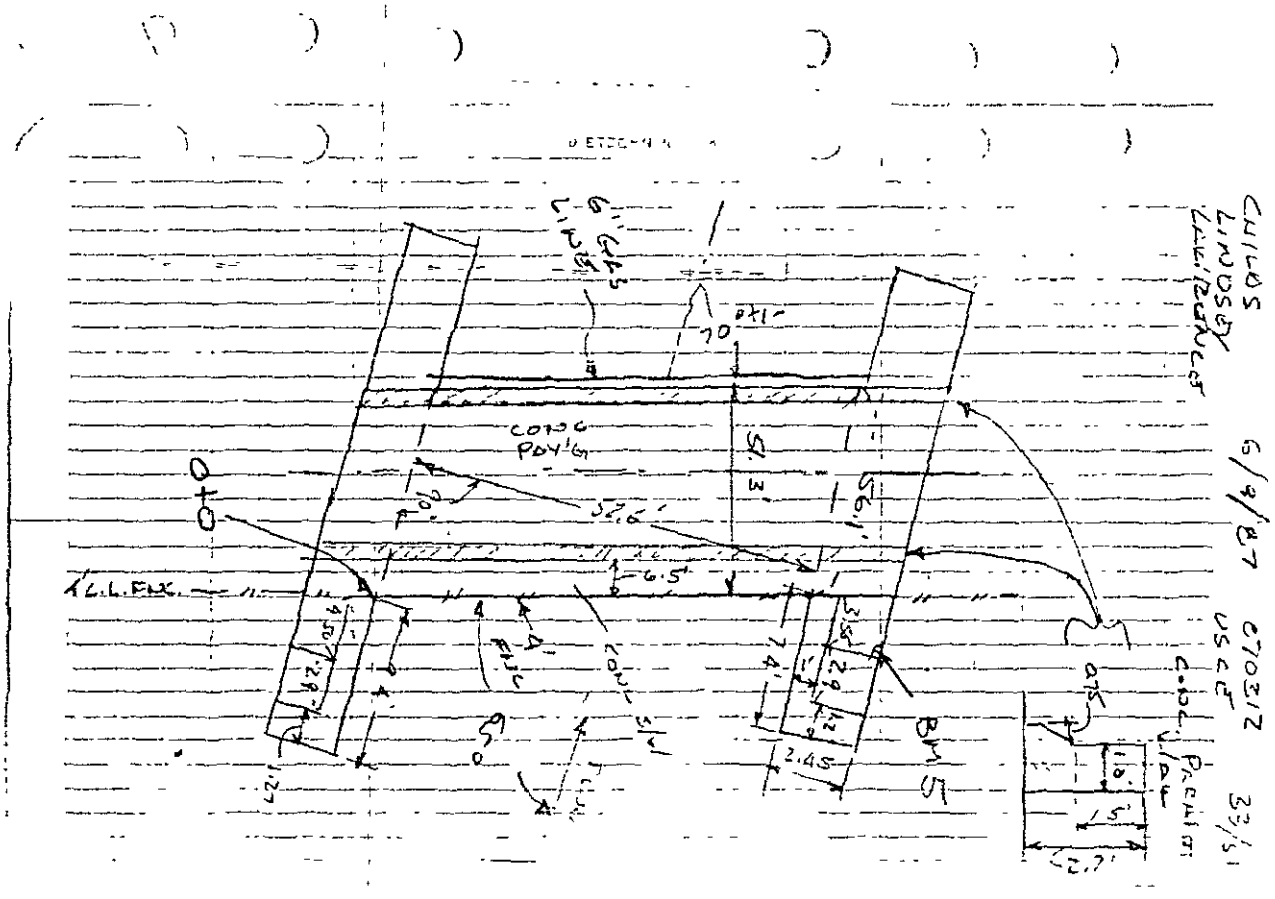

43.4
0.7
0.25
PAVED RD & PAVED SHOULDERS
1.75
0.5
0.2'
℄ PAV'T (YELLOW LINE)
RD & BRIDGE NEW
CHILDS LINDSEY LAWRENCE
6/9/87
8103 C
LEFF
10/02

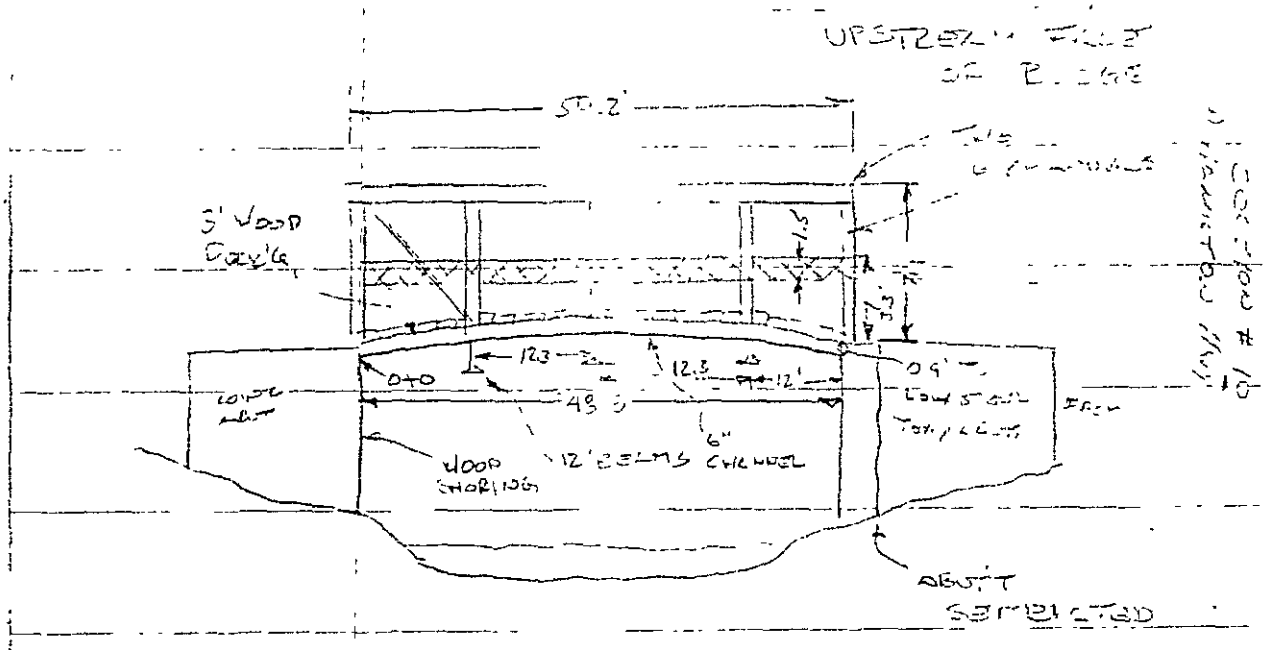


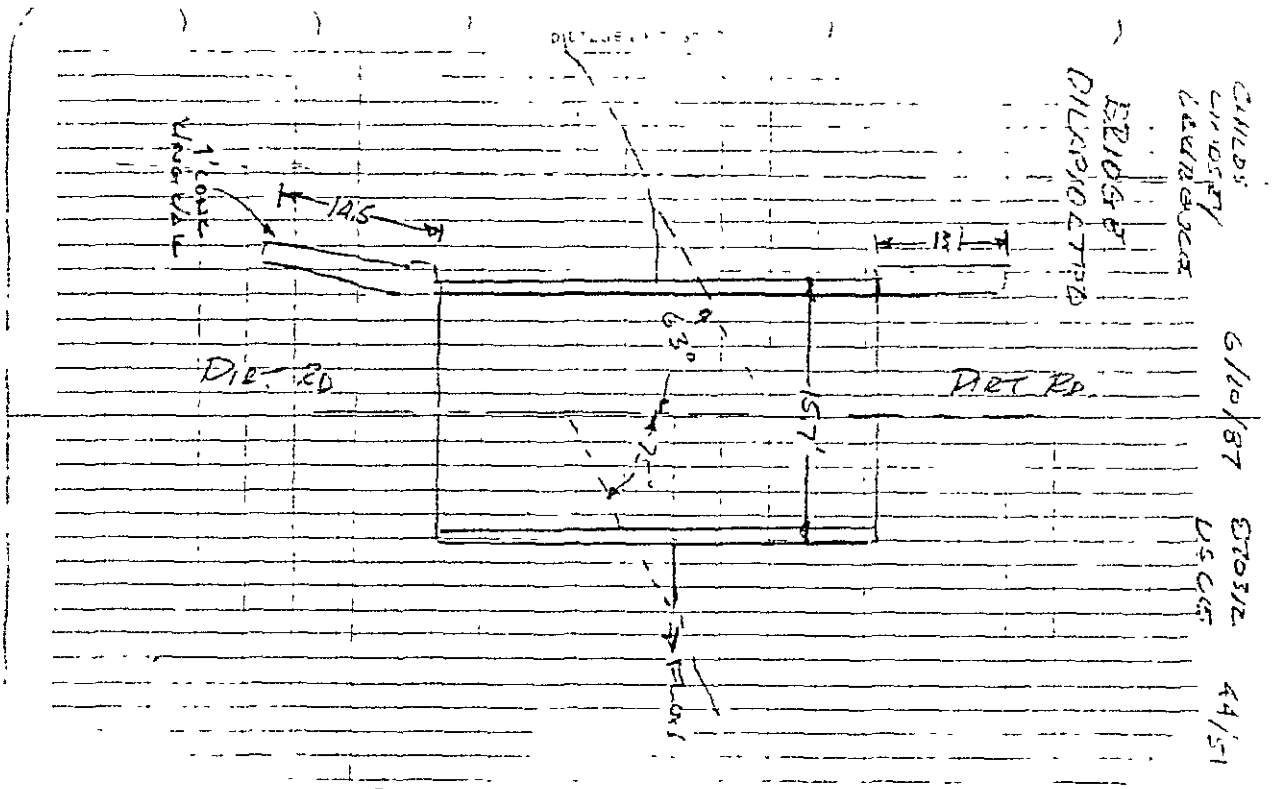
UP STREAM FACE / BRIDGE

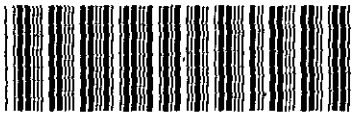



UPSTREAM FACE OF BRIDGE
63.0'
4' C.L. FNC
56.75
SLEW
56.0
TOP/ABUT = LOW CONC
SECTION # 7
HWY BRIDGE


CHILDS LINDSEY LAWRENCE
6/9/87
C70312
USCE
6" GAS LINE
CONC PAV'G
52.6'
6.5'
4' C.L. FNC
BM 5
2.45
1.5'
2.7'


UPSTREAM FACE OF BRIDGE
50.2'
3' WOOD DOOR'G
12.3
12.3
12'
48.3
6"
WOOD SHORING
12' BEAMS CHANNEL
ABUT'T SEMI-ACTED


14.5
13
63°
157'
DIRT RD
DIRT RD
FLOW
6/10/87
44/51



1) COUNTY: LENAWEE

2) STUDY NAME: ADRIAN TOWNSHIP

3) WATERCOURSE: WOLF CREEK

4) DOCUMENT TYPE: SUMMARY



THIS RUN EXECUTED 30 DEC 87 16:06:18

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

100-YEAR DISCHAR

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
5000.000	0 00	0.00	0.00	754.06	1840.00	763.00	0.00	763.02	1.16	1.53	2204.91	1706.94
6600.000	1600.00	0.00	0.00	756.22	1840 00	763.32	0.00	763.40	5.75	2.83	1185.10	767.66
8200.000	1600.00	0.00	0.00	758.38	1840.00	764.60	0.00	764.80	15.30	4.14	732.95	470.35
9810.000	1610.00	0.00	0.00	760.54	1840.00	767.30	0.00	767.78	19.31	5.55	331.51	418 67
9840.000	30.00	0.00	0.00	760.60	1840.00	767.38	0.00	768.29	39.85	7.68	239.58	291.48
9841.000	1.00	770.00	769.40	760.60	1840.00	767.38	0.00	768.35	31.94	7.90	233.02	325.57
9859.000	18.00	770.00	769.40	760.60	1840.00	767.49	0.00	768.42	30.35	7.76	237.02	333.98
9860.000	1.00	0 00	0.00	760.60	1840.00	767.63	0.00	768.47	45.99	7.37	249.65	271.32
9873.000	13.00	0.00	0.00	760.63	1840.00	768.50	0.00	768.78	12.22	4.24	434.30	526 33
10200.000	327.00	0 00	0.00	761.10	1840.00	769.00	0 00	769.02	1.63	1.64	1625.01	1441.52
11130.000	930.00	0.00	0.00	762.43	1840.00	769.24	0.00	769 45	18 51	4.53	645.20	427.70
11530.000	400.00	0.00	0.00	762.90	1840.00	769.97	0.00	770.26	20.81	4.93	505.87	403.31
11730.000	200.00	0.00	0.00	763.10	1840.00	770.47	0.00	770.98	30.65	5.79	329.68	332 38
11731.000	1.00	772.50	771 80	763.10	1840.00	770.47	0.00	771.01	14.87	5.89	312.80	477.15
11774.000	43.00	772.50	771.80	763.10	1840.00	770.56	0.00	771.08	14.09	5.79	318.11	490.16
11775.000	1.00	0.00	0 00	763.10	1840.00	770.62	0.00	771.10	22.08	5.62	339.56	391.59
11885.000	110 00	0.00	0.00	763.25	1840.00	771.14	0.00	771.41	14.85	4.65	683.01	477.50

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
12920.000	1035.00	0.00	0.00	764.65	1840.00	772.46	0.00	772.61	8.82	3.55	658.28	619.54
13300.000	380.00	0.00	0.00	765.16	1840.00	772.96	0.00	773.39	20.94	5.46	360.88	402 09
13400.000	100 00	0 00	0.00	765.40	1840.00	773.22	0.00	773.93	35.41	6.72	273 65	309.21
13401.000	1.00	774.70	775.30	765.40	1840.00	773.23	0.00	773.93	19.92	6.72	273.64	412.22
13429.000	28.00	774.70	775.30	765.40	1840.00	773.30	0.00	773.99	19.27	6 65	276.73	419.15
13430.000	1.00	0 00	0.00	765.40	1840.00	773.31	0.00	773.99	26.16	6.64	276.96	359.77
13630.000	200.00	0.00	0.00	766.10	1840.00	774.30	0.00	774.51	8.88	4.24	777.27	617.56
16750.000	3120.00	0.00	0.00	771.40	1840.00	778.53	0.00	779.03	26.55	6.57	488.99	357.11
18380.000	1630.00	0.00	0.00	773.00	1840.00	781.37	0.00	781.63	10.18	4.37	582.71	576.65
18580.000	200.00	0.00	0.00	773.20	1840.00	781.65	0.00	782.07	21.07	5.19	354.23	400.83
18581.000	1.00	785.60	782.70	773.20	1840.00	781.66	0.00	782.07	11.84	5.19	354.32	534 64
18633.000	52.00	785.60	782.70	773.20	1840.00	781.73	0.00	782.14	11.33	5.12	359.47	546.72
18634.000	1.00	0.00	0.00	773.20	1840.00	781.73	0.00	782.14	15.47	5.12	359.10	467 87
18834.000	200.00	0.00	0.00	775.00	1840.00	782.08	0.00	782.46	14.34	5.21	399.23	485.87
20350.000	1516.00	0.00	0.00	777.40	1840.00	784.58	0.00	784.93	20.11	5.27	486.40	410.33
22685.000	2335.00	0.00	0.00	781.19	1840.00	788.06	0.00	788.22	10.98	3.74	715.51	555.21
23420.000	735.00	0.00	0.00	781.50	1840.00	789.27	0.00	789.83	27.07	6.01	306.14	353.67
23421.000	1.00	788.80	793.30	781.50	1840.00	789.27	0.00	789.83	27.06	6.01	306.18	353 72
23437.000	16.00	788.80	793.30	781.50	1840.00	789.33	0.00	789.88	26.43	5.96	308.57	357.91
23438.000	1.00	0.00	0.00	781.50	1840.00	789.33	0.00	789.88	26.29	5.95	309.09	358.84
23638.000	200 00	0.00	0.00	782.43	1840.00	790.23	0.00	790.33	5.84	3.02	891 53	761.48
23738.000	100.00	0.00	0.00	782 90	1840.00	790.31	0.00	790.39	5.44	2.79	977.21	788.65
24738.000	1000.00	0.00	0.00	784.53	1840.00	791.10	0.00	791.33	16.55	4.45	577.72	452.27
25738 000	1000.00	0.00	0.00	786.16	1840.00	792.73	0.00	792.96	16.59	4.45	577.07	451.79
27738.000	2000.00	0.00	0.00	789.42	1840.00	795 99	0.00	796.22	16.52	4.44	578.23	452 64
29800.000	2062.00	0.00	0.00	792.77	1840.00	799.67	0.00	799.94	20.39	4.53	488.34	407.51

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
31800.000	2000.00	0.00	0.00	796.40	1840.00	803.47	0.00	803.71	17.33	4.25	524.66	442.02
32000.000	200.00	0.00	0.00	796.76	1840.00	803.82	0.00	804.06	17.59	4.28	521.25	438 70

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: BLISSFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

FORM 6413

THIS RUN EXECUTED 3 DEC 81 13:55:05

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56

C
T1 VILLAGE OF BLISSFIELD,MI FIS
T2 100-YEAR FLOOD
T3 RIVER RAISIN, BLISSFIELD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0	2	0	0	0.000005	0.00	0.0	0	682.290	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 VARIABLE CODES FOR SUMMARY PRINTOUT

	150.000	210.000	200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.080	0.080	0.060	0.100	0.300	0.000	0.000	0.000	0.000	0.000
QT	2.000	10830.000	10830.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	449.800	0.100	513.400	0.060	605.800	0.080	944.460	0.050
NH	1833.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	4.100	0.000	1060.100	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION BB									
XI	398.070	41.000	513.400	605.800	0.000	0.000	0.000	0.000	0.000	0.000
GR	683.700	279.000	683.100	320.100	683.100	320.100	683.100	320.100	682.300	353.500
GR	680.600	368.900	680.700	405.200	680.700	427.700	680.300	434.000	680.300	445.100
GR	681.200	449.800	680.100	461.700	677.000	477.500	673.300	485.800	671.000	497.600
GR	669.800	503.100	666.300	513.400	663.800	518.400	662.500	523.400	661.400	528.400
GR	660.800	533.400	659.600	538.400	659.500	543.400	659.800	548.400	660.200	553.400
GR	661.300	558.400	661.900	563.400	660.600	568.400	660.100	573.400	660.900	578.400
GR	661.500	583.400	662.000	587.400	662.000	593.400	663.600	598.400	666.300	605.800
GR	671.900	618.400	674.200	630.700	677.600	639.000	677.200	669.300	676.300	703.700
GR	674.800	745.300	674.300	783.400	673.400	849.700	673.400	894.300	672.400	944.400
GR	672.300	979.900	672.300	1011.100	673.200	1032.800	675.800	1047.400	680.200	1060.100
GR	679.500	1105.700	679.100	1178.000	679.100	1291.300	679.400	1405.700	680.600	1491.700
GR	680.600	1567.300	681.000	1673.300	680.300	1744.600	680.300	1797.100	680.200	1833.000
GR	683.000	1903.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	4.000	0.050	1463.400	0.080	1475.000	0.060	1541.500	0.080	1591.100	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

FORM 6413

	CROSS SECTION CC									
X1	399.300	42.000	1475.000	1481.500	1250.000	1200.000	1330.000	0.000	0.000	0.000
GR	385.300	870.700	695.400	1030.100	684.400	896.600	684.400	475.400	683.200	539.800
GR	380.600	990.800	679.100	830.800	677.900	666.400	676.000	709.400	676.000	756.000
GR	375.600	792.800	674.000	811.900	675.200	845.900	675.200	911.100	674.800	936.700
GR	673.900	1003.600	673.600	1081.000	673.700	1129.200	675.600	1163.500	676.700	1210.100
GR	677.200	1271.700	677.600	1323.100	677.000	1377.800	677.000	1423.600	676.300	1463.400
GR	666.500	1475.000	664.200	1480.000	661.800	1485.000	661.000	1490.000	660.500	1495.000
GR	660.300	1500.000	659.600	1505.000	659.900	1510.000	660.500	1515.000	665.900	1520.000
GR	661.000	1525.000	663.000	1530.000	665.100	1535.000	665.500	1541.500	676.100	1557.200
GR	688.600	1582.800	689.100	1591.100	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.000	0.700	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.030	1719.600	0.100	1775.600	0.060	1848.300	0.100	2002.100	0.045
NH	2193.000	0.070	2346.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	650.000	2250.000	1160.000	2250.000	0.000	0.000	0.000
	CROSS SECTION DD									
X1	400.500	60.000	1775.800	1848.300	1100.000	1230.000	1200.000	0.000	0.000	0.000
GR	694.300	908.600	684.000	496.300	684.400	590.100	682.400	630.200	682.000	687.800
GR	682.300	782.000	682.400	849.000	682.100	938.100	682.000	1007.200	682.000	1052.500
GR	680.100	1095.200	678.600	1149.900	678.600	1180.800	679.300	1235.500	679.200	1277.200
GR	678.300	1314.800	677.500	1348.700	677.100	1384.500	679.300	1416.000	679.500	1479.000
GR	679.700	1540.700	679.500	1588.300	680.100	1624.600	680.200	1671.000	680.400	1719.600
GR	680.400	1754.000	666.700	1775.800	665.100	1780.800	663.900	1785.800	663.500	1750.600
GR	663.200	1795.800	662.700	1800.800	662.600	1805.800	662.400	1810.800	662.500	1815.800
GR	663.100	1820.800	663.900	1825.800	664.700	1830.800	664.700	1835.800	664.900	1840.800
GR	666.700	1848.300	674.200	1863.700	676.400	1902.600	680.000	1922.900	679.200	1949.500
GR	676.200	2002.100	677.200	2079.100	675.800	2141.100	674.700	2193.000	674.000	2239.700
GR	673.600	2277.400	673.700	2285.500	679.500	2298.700	683.400	2310.700	686.300	2323.600
GR	687.000	2331.400	687.300	2346.500	687.200	2346.500	687.200	2346.500	689.100	2346.500
NH	5.000	0.050	2110.000	0.100	2140.000	0.060	2212.500	0.100	2242.000	0.050
NH	2472.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	1.400	700.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION EE									
X1	401.200	30.000	2140.000	2212.500	700.000	700.000	700.000	0.000	0.000	0.000
GR	686.000	0.000	684.000	650.000	680.000	1210.000	679.000	1250.000	680.000	1290.000
GR	681.000	1350.000	680.000	1420.000	679.000	1470.000	680.000	1525.000	680.500	1650.000
GR	680.000	1770.000	680.000	2110.000	666.700	2140.000	665.100	2145.000	663.900	2150.000
GR	663.500	2155.000	663.200	2160.000	662.700	2165.000	662.600	2170.000	662.400	2175.000
GR	662.500	2180.000	663.100	2185.000	663.900	2190.000	664.700	2195.000	664.700	2200.000
GR	664.900	2205.000	666.700	2212.500	680.000	2242.000	688.000	2272.000	688.000	2472.000
NH	7.000	0.050	1653.600	0.060	1742.000	0.060	1871.000	0.080	1939.400	0.050
NH	2681.700	0.070	2764.200	0.035	3392.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	400.000	2450.000	1500.000	2450.000	0.000	0.000	0.000
	CROSS SECTION A									
X1	402.050	94.000	1742.000	1871.000	700.000	900.000	850.000	0.000	0.000	0.000
GR	694.900	290.700	685.000	290.700	685.000	291.100	695.000	291.100	684.600	344.400
GR	684.200	391.900	683.800	411.600	684.500	469.300	684.800	551.900	684.100	604.000
GR	683.200	642.000	682.700	667.000	683.700	749.800	682.900	817.400	683.200	873.900
GR	683.100	920.100	683.100	943.900	681.900	985.600	691.000	1056.300	683.200	1115.900
GR	688.000	1163.000	682.500	1247.300	680.700	1311.500	679.600	1356.900	679.500	1420.400
GR	679.500	1459.300	679.700	1507.300	679.400	1548.200	678.900	1592.700	678.900	1625.300

GR	679.100	1658.600	679.500	1684.700	680.300	1702.000	680.300	1723.100	665.900	1742.000
GR	665.900	1747.000	665.900	1752.000	664.400	1757.000	663.700	1762.000	664.900	1767.000
GR	665.700	1772.000	664.900	1777.000	665.500	1782.000	665.700	1787.000	665.900	1792.000
GR	665.400	1797.000	665.000	1802.000	664.700	1807.000	664.900	1812.000	664.200	1817.000
GR	664.100	1822.000	663.700	1827.000	663.600	1832.000	663.400	1837.000	663.200	1842.000
GR	662.500	1847.000	662.700	1852.000	663.600	1857.000	664.400	1862.000	665.700	1867.000
GR	666.900	1871.000	677.000	1882.300	679.300	1908.600	673.100	1939.400	677.400	1980.500
GR	676.400	2060.000	676.300	2097.800	676.300	2168.600	676.600	2235.000	669.800	2475.900
GR	671.600	2554.000	674.200	2548.500	676.100	2585.000	675.800	2635.400	675.000	2681.700
GR	672.600	2720.900	671.100	2764.200	670.600	2789.600	670.900	2815.100	673.100	2831.300
GR	680.000	2852.600	682.900	2865.700	684.000	2885.200	682.200	2909.200	683.100	2918.100
GR	683.100	2930.900	681.900	2974.200	682.200	3020.000	682.700	3072.400	683.600	3137.900
GR	684.300	3192.000	685.700	3236.600	687.300	3287.300	689.100	3392.000	0.000	0.000
NH	5.000	0.030	815.500	0.080	954.100	0.060	1026.200	0.100	1046.000	0.050
NH	2660.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	525.000	2150.000	725.000	2150.000	0.000	0.000	0.000
	CROSS SECTION B									
X1	403.750	58.000	956.100	1026.200	1100.000	1800.000	1700.000	0.000	0.000	0.000
GR	690.000	232.400	683.700	232.900	696.800	232.800	696.800	314.900	694.300	314.800
GR	684.800	314.800	684.800	314.300	684.300	329.400	683.900	372.500	684.300	420.500
GR	684.900	459.600	684.300	524.300	684.100	567.700	684.100	613.600	684.100	657.700
GR	683.900	713.000	682.900	744.100	679.600	760.100	676.300	779.700	675.900	794.900
GR	675.900	815.300	675.700	927.400	673.600	939.800	667.100	955.700	667.100	956.100
GR	667.100	956.100	665.500	961.100	664.800	966.100	665.200	971.100	664.300	976.100
GR	663.400	981.100	662.900	986.100	663.300	991.100	662.600	996.100	662.400	1001.100
GR	662.100	1006.100	662.200	1011.100	662.700	1016.100	663.700	1021.100	667.100	1026.200
GR	679.700	1048.000	678.700	1065.000	678.300	1110.600	677.700	1150.700	676.600	1188.700
GR	675.600	1216.300	675.600	1226.400	674.400	1250.500	676.200	1271.800	677.500	1311.800
GR	678.400	1362.700	678.200	1492.600	678.000	1780.000	679.600	2150.000	680.000	2275.000
GR	684.000	2320.000	684.600	2425.000	688.000	2660.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.050	610.800	0.040	1041.300	0.050	1370.600	0.080	1477.000	0.040
NH	1541.000	0.100	1542.500	0.050	3650.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	1.400	0.000	3250.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION C									
X1	404.850	75.000	1477.000	1541.000	1150.000	1000.000	1100.000	0.000	0.000	0.000
GR	687.200	0.000	686.400	0.600	686.400	68.900	687.200	115.500	687.300	156.000
GR	686.400	210.300	686.800	246.500	687.000	291.700	686.500	345.100	686.600	401.200
GR	686.200	448.500	686.700	490.600	686.500	537.700	685.300	573.700	684.900	610.800
GR	687.000	1041.300	686.000	1108.600	685.900	1147.000	686.600	1184.400	686.800	1230.600
GR	686.800	1276.600	686.300	1323.800	686.600	1370.600	686.600	1413.400	687.400	1421.400
GR	687.100	1428.900	687.100	1429.300	687.100	1429.300	686.700	1442.000	687.100	1446.200
GR	667.200	1477.000	663.500	1482.000	662.600	1487.000	662.600	1492.000	662.600	1497.000
GR	662.600	1502.000	662.400	1507.000	662.400	1512.000	662.600	1517.000	662.800	1522.000
GR	663.300	1527.000	664.700	1532.000	667.200	1541.000	681.200	1599.100	680.400	1625.200
GR	679.900	1642.500	678.300	1679.100	677.400	1705.500	677.400	1734.400	675.300	1765.300
GR	675.500	1788.200	675.300	1821.200	675.900	1850.900	677.100	1875.600	678.300	1900.000
GR	679.000	1929.300	679.900	1938.400	679.200	1982.700	679.800	2031.900	679.600	2091.000
GR	679.200	2171.000	679.100	2237.000	677.700	2290.900	675.300	2324.600	675.200	2360.500
GR	675.400	2587.300	676.900	2400.000	680.000	2525.000	680.500	2650.000	680.000	2955.000
GR	679.600	3150.000	680.000	3275.000	684.000	3315.000	684.400	3460.000	688.000	3650.000

NH	4.000	0.050	1279.700	0.290	1385.600	0.050	1466.600	0.100	2197.400	0.000
ET	0.000	4.100	0.000	0.000	1975.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION D

X1	406.450	57.000	1385.600	1466.800	1680.000	1450.000	1500.000	0.000	0.000	0.000
GR	696.200	466.800	684.000	478.600	681.100	496.200	679.400	532.600	678.400	573.000
GR	677.500	669.700	677.600	730.700	679.100	779.800	678.200	851.400	677.000	907.000
GR	678.900	949.600	681.100	990.400	680.600	1071.200	680.600	1131.600	680.000	1184.600
GR	679.200	1242.400	679.200	1278.700	680.000	1293.400	680.200	1309.900	678.100	1318.900
GR	678.400	1338.900	672.100	1372.100	667.600	1385.600	665.900	1390.600	664.300	1395.600
GR	662.100	1400.600	659.900	1405.600	657.900	1410.600	656.900	1415.600	655.400	1420.600
GR	655.800	1425.600	655.400	1430.600	655.200	1435.600	655.400	1440.600	655.600	1445.600
GR	656.800	1450.600	659.600	1455.600	663.900	1460.600	667.400	1466.800	683.400	1483.600
GR	681.800	1505.700	691.700	1519.500	680.300	1553.700	681.300	1596.500	681.300	1687.700
GR	681.200	1779.500	680.500	1842.700	680.900	1886.900	683.300	1907.800	684.400	1930.700
GR	685.000	1991.600	664.300	2039.000	684.400	2071.400	684.400	2071.700	685.000	2113.700
GR	655.500	2197.000	694.500	2197.400	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.600	0.000	0.000	0.000	0.000
NH	5.000	0.050	112.700	0.070	152.800	0.060	225.300	0.100	264.900	0.050
NH	1940.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	0.000	900.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION E

X1	407.770	37.000	152.800	223.300	1200.000	1400.000	1320.000	0.000	0.000	0.000
GR	687.600	0.000	686.500	35.600	685.100	61.400	683.400	83.300	682.400	112.700
GR	676.300	135.000	667.500	152.800	665.800	157.800	664.400	162.800	664.300	167.800
GR	664.000	172.800	663.800	177.800	663.600	182.800	663.600	187.800	663.600	192.800
GR	663.600	197.800	663.600	202.800	664.600	207.800	665.400	212.800	666.300	217.800
GR	667.500	225.300	680.000	264.900	678.500	296.000	679.500	422.100	677.700	525.500
GR	677.400	648.200	677.500	721.800	679.100	792.000	681.100	850.600	683.800	912.100
GR	682.900	1005.100	684.700	1143.000	685.100	1220.400	684.800	1269.000	684.000	1420.000
GR	684.000	1500.000	688.000	1940.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.100	58.000	0.060	123.000	0.100	239.900	0.050	2600.000	0.000
ET	0.000	4.100	0.000	0.000	1100.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION F

X1	408.700	45.000	58.000	123.000	950.000	750.000	930.000	0.000	0.000	0.000
GR	687.800	0.000	687.800	0.000	686.900	22.600	686.400	36.700	667.800	58.000
GR	664.200	63.000	663.300	68.000	662.800	73.000	662.600	78.000	662.500	83.000
GR	663.100	88.000	664.400	93.000	665.300	98.000	667.000	103.000	667.200	108.000
GR	667.800	113.000	667.200	118.000	667.800	123.000	667.600	123.000	675.800	140.500
GR	680.600	161.000	679.900	183.600	679.000	206.500	679.200	239.900	679.900	352.400
GR	678.800	415.300	677.800	500.100	677.300	594.800	677.700	699.600	678.200	782.200
GR	678.900	859.800	679.100	946.100	679.300	1038.500	678.800	1114.100	678.200	1179.700
GR	678.300	1211.400	681.400	1246.900	683.100	1285.400	684.800	1303.900	685.200	1490.200
GR	685.200	1582.300	685.300	1599.900	684.000	1935.000	684.500	2250.000	696.000	2600.000
NH	4.000	0.100	27.100	0.060	116.900	0.100	209.300	0.050	3200.000	0.000
ET	0.000	4.100	0.000	0.000	1550.000	0.000	0.000	0.000	0.000	0.000

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	CROSS SECTION 9									
X1	410.070	46.000	27.100	116.900	1440.000	1050.000	1370.000	0.000	0.000	0.000
GR	686.000	0.000	677.300	17.500	668.000	27.100	666.500	32.100	665.500	37.100
GR	665.200	42.100	665.100	47.100	665.000	52.100	665.000	57.100	665.000	62.100
GR	664.800	67.100	664.800	72.100	664.700	77.100	664.700	82.100	665.400	87.100
GR	666.400	92.100	666.800	97.100	667.200	102.100	667.300	107.100	668.000	116.900
GR	679.000	147.900	679.100	209.300	679.100	323.200	679.800	444.700	680.600	556.600
GR	680.600	633.000	680.400	701.400	679.000	790.100	678.400	894.600	678.400	998.500
GR	678.300	1053.400	678.900	1105.900	679.300	1168.300	678.500	1211.000	677.800	1268.600
GR	677.000	1305.100	678.400	1343.000	679.300	1381.700	679.400	1427.000	679.400	1473.300
GR	679.400	1491.200	680.000	1493.200	684.500	1840.000	685.000	2250.000	686.000	2830.000
GR	688.000	3300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	1129.700	0.090	1139.600	0.060	1231.100	0.100	1360.300	0.050
NP	4410.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1000.000	3150.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION H									
X1	411.350	77.000	1129.600	1231.100	1430.000	950.000	1280.000	0.000	0.000	0.000
GR	689.400	0.000	686.700	16.800	685.500	50.300	685.200	99.600	685.200	100.000
GR	685.200	100.000	685.200	158.800	684.200	217.100	685.000	253.100	685.200	278.000
GR	684.800	338.900	684.000	420.900	682.500	457.300	682.500	495.900	683.300	522.500
GR	684.800	551.600	686.700	568.500	687.000	592.000	686.600	654.700	686.600	735.600
GR	686.300	790.300	687.000	828.700	687.000	829.300	686.800	868.300	686.900	931.700
GR	683.700	1123.700	668.400	1139.600	665.700	1144.600	664.000	1149.600	662.900	1154.600
GR	662.300	1159.600	662.500	1164.600	662.500	1169.600	662.300	1174.600	663.300	1179.600
GR	663.800	1184.600	664.300	1189.600	664.600	1194.600	665.200	1199.600	665.400	1204.600
GR	666.300	1209.600	667.500	1214.600	667.700	1219.600	667.800	1224.600	668.400	1231.100
GR	679.900	1255.200	679.900	1277.600	677.200	1295.100	678.700	1360.300	679.400	1423.800
GR	679.500	1487.500	680.300	1600.000	680.300	1753.800	681.400	1854.000	681.000	1938.100
GR	681.600	2044.700	680.900	2126.800	680.100	2198.100	680.100	2251.200	679.300	2297.800
GR	679.300	2322.400	677.700	2389.100	677.700	2420.500	677.900	2459.500	677.800	2505.800
GR	677.800	2551.300	677.900	2581.800	677.200	2605.300	679.100	2628.000	679.800	2662.800
GR	680.300	2701.400	679.700	2724.700	680.000	2755.000	684.000	2940.000	685.000	3450.000
GR	686.000	4000.000	688.000	4410.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.030	1823.500	0.080	1867.400	0.060	1938.800	0.070	1961.200	0.050
NH	3302.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	900.000	1990.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION I									
X1	412.950	90.000	1867.400	1938.800	1200.000	1350.000	1600.000	0.000	0.000	0.000
GR	688.400	0.000	688.300	0.000	688.200	29.300	688.200	29.300	688.200	29.700
GR	708.800	29.700	708.800	68.800	688.600	69.300	688.700	69.300	688.700	69.300
GR	688.900	107.200	687.800	148.900	686.100	189.000	684.200	244.400	683.000	279.000
GR	682.500	333.100	681.900	399.000	681.800	442.000	681.800	542.500	681.300	662.900
GR	680.250	751.300	679.400	793.700	680.000	867.700	678.900	923.500	677.500	942.100
GR	679.000	978.500	679.500	1027.600	679.300	1086.500	678.300	1129.300	679.000	1179.200
GR	678.800	1239.700	678.900	1281.500	678.200	1342.800	679.200	1391.200	679.200	1453.800
GR	677.700	1519.200	680.100	1567.200	679.500	1611.300	680.600	1666.400	680.200	1714.100
GR	680.100	1740.800	680.500	1782.200	678.700	1814.900	680.600	1923.500	680.600	1823.500
GR	668.300	1867.400	667.200	1872.400	666.200	1877.400	665.700	1882.400	665.100	1887.400
GR	665.300	1892.400	664.900	1897.400	664.700	1902.400	664.700	1907.400	664.900	1912.400
GR	665.200	1917.400	665.600	1922.400	665.700	1927.400	666.300	1938.900	684.400	1961.200
GR	685.600	1990.800	695.600	1998.000	685.600	1998.800	695.700	2030.900	695.700	2032.500
GR	685.700	2069.300	696.000	2096.900	686.000	2097.500	698.300	2078.300	686.900	2146.100

GR	687.900	2156.600	687.900	2149.600	687.900	2148.600	685.100	2160.600	685.400	2225.800
GR	685.000	2290.300	685.300	2279.200	685.900	2438.200	686.300	2501.900	686.100	2563.700
GR	685.700	2638.900	685.600	2732.000	686.200	2820.900	686.300	2922.200	686.100	3010.600
GR	686.500	3110.000	686.100	3199.300	686.200	3275.300	687.000	3302.000	687.000	3302.000
NH	4.000	0.050	1410.000	0.080	1588.000	0.060	1689.400	0.080	1819.000	0.000
ET	0.000	4.100	0.000	450.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM									
X1	413.910	28.000	1588.000	1699.400	850.000	900.000	960.000	0.000	0.000	0.000
GR	689.400	0.000	680.400	0.000	680.000	170.000	680.500	280.000	680.000	415.000
GR	676.700	520.000	680.000	680.000	680.000	1080.000	677.000	1410.000	676.500	1500.000
GR	676.300	1530.000	668.200	1588.000	667.200	1593.000	666.200	1598.000	665.700	1605.000
GR	665.100	1608.000	665.500	1613.000	664.900	1618.000	664.700	1623.000	664.700	1658.000
GR	664.900	1663.000	665.200	1668.000	665.400	1673.000	665.700	1678.000	668.300	1689.400
GR	680.000	1699.000	684.000	1719.000	688.000	1819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	1080.000	0.080	1580.000	0.060	1710.000	0.080	3320.000	0.000
ET	0.000	4.100	0.000	450.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT BLISSFIELD DAM									
X1	413.960	17.000	1580.000	1710.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	689.400	0.000	680.400	0.000	680.000	170.000	680.500	280.000	680.000	415.000
GR	676.700	520.000	680.000	680.000	680.000	1080.000	677.000	1410.000	676.500	1500.000
GR	676.300	1580.000	676.300	1710.000	680.000	1720.000	684.000	1740.000	688.000	1840.000
GR	689.500	2340.000	688.000	3320.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	4.000	0.050	2393.300	0.100	2461.200	0.060	2555.900	0.100	2570.100	0.000
ET	0.000	4.100	0.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELD DAM									
X1	414.010	59.000	2461.200	2355.900	50.000	50.000	50.000	0.000	0.500	0.000
GR	688.400	650.000	688.200	679.300	688.200	679.700	688.600	719.300	688.900	757.200
GR	687.800	788.900	686.100	839.000	684.200	894.400	683.000	929.000	682.500	985.100
GR	680.400	1000.000	680.400	1000.000	679.300	1028.800	678.000	1058.300	677.400	1075.000
GR	677.400	1075.000	678.800	1094.900	679.100	1179.000	679.800	1278.200	680.300	1348.100
GR	679.000	1404.500	679.300	1488.400	679.800	1562.400	680.100	1624.000	679.700	1722.100
GR	680.300	1798.200	680.500	1909.900	680.500	1958.400	679.000	1985.800	679.000	2049.800
GR	679.500	2142.500	679.800	2186.200	680.600	2220.600	680.200	2292.400	679.600	2352.100
GR	678.800	2393.300	680.100	2409.400	680.000	2426.400	676.300	2461.200	675.100	2466.200
GR	673.000	2471.200	670.800	2476.200	669.400	2481.200	667.500	2486.200	666.900	2491.200
GR	666.400	2496.200	665.600	2501.200	666.100	2506.200	667.000	2511.200	668.100	2516.200
GR	668.600	2521.200	669.200	2526.200	669.900	2531.200	670.900	2536.200	672.400	2541.200
GR	673.300	2546.200	675.100	2551.200	676.300	2555.900	686.800	2570.100	0.000	0.000
NH	4.000	0.050	2393.300	0.100	2461.200	0.060	2555.900	0.100	2570.100	0.000
ET	0.000	4.100	0.000	1200.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION J									
X1	414.600	54.000	2461.200	2555.900	450.000	650.000	590.000	0.000	0.000	0.000
GR	688.000	150.000	688.000	930.000	684.000	455.000	681.300	750.000	680.000	960.000
GR	680.400	1000.000	680.400	1000.000	679.300	1028.800	678.000	1058.300	677.400	1075.000
GR	677.400	1075.000	678.200	1094.900	679.100	1179.000	679.800	1278.200	680.300	1348.100
GR	679.000	1404.500	679.200	1488.400	679.800	1562.400	680.100	1624.000	679.700	1722.100
GR	680.300	1798.200	680.500	1909.900	680.500	1958.400	679.000	1985.800	679.000	2049.800
GR	679.500	2142.500	679.600	2186.200	680.600	2220.600	680.200	2292.400	679.600	2352.100
GR	678.800	2393.300	680.100	2409.400	680.900	2426.400	676.300	2461.200	675.100	2466.200
GR	673.000	2471.200	670.800	2476.200	669.400	2481.200	667.500	2486.200	666.900	2491.200

1231
2556

GR	656.400	2496.200	665.400	2501.200	668.100	2506.200	667.000	2511.200	668.100	2514.200
GR	668.600	2521.200	669.200	2526.200	669.900	2531.200	670.900	2536.200	672.400	2541.200
GR	673.300	2546.200	675.100	2551.200	676.300	2555.900	686.800	2570.100	0.000	0.000
NH	4.000	0.050	2123.600	0.080	2230.000	0.060	2333.900	0.070	2369.000	0.000
ET	0.000	4.100	0.000	1350.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION K									
X1	415.620	66.000	2230.000	2333.900	850.000	1100.000	1020.000	0.000	0.000	0.000
GR	688.000	360.000	689.600	440.000	688.000	520.000	684.000	710.000	682.000	850.000
GR	681.500	1000.000	681.400	1000.400	682.400	1048.500	682.200	1066.800	681.500	1073.000
GR	684.000	1090.400	682.300	1114.100	681.200	1152.500	681.600	1185.900	680.800	1203.800
GR	680.500	1229.800	680.500	1270.100	680.500	1302.200	679.300	1328.100	678.900	1351.700
GR	679.600	1388.100	679.600	1416.300	679.600	1437.400	679.400	1465.500	679.400	1500.200
GR	680.100	1532.300	680.200	1596.800	679.700	1636.500	679.000	1667.900	677.700	1705.400
GR	677.200	1755.400	677.300	1807.600	677.400	1955.100	677.600	1905.200	678.100	1932.700
GR	678.500	1979.900	678.500	2016.200	679.200	2055.600	679.800	2095.900	679.900	2129.600
GR	680.300	2161.600	679.900	2196.000	678.900	2211.500	676.200	2230.000	674.200	2235.000
GR	672.200	2240.000	670.200	2245.000	668.700	2250.000	668.200	2255.000	667.500	2260.000
GR	667.300	2265.000	667.200	2270.000	669.500	2275.000	667.200	2280.000	667.200	2285.000
GR	667.100	2290.000	666.700	2295.000	665.900	2300.000	666.000	2305.000	666.600	2310.000
GR	667.600	2315.000	669.500	2320.000	670.900	2325.000	673.700	2330.000	676.300	2333.900
GR	691.200	2369.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.500
NH	5.000	0.100	418.700	0.070	723.800	0.060	837.800	0.070	891.700	0.100
NH	985.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	4.100	450.000	855.810	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION L									
X1	416.650	50.000	723.800	837.800	600.000	1100.000	1030.000	0.000	0.000	0.000
GR	681.300	0.000	681.300	0.000	682.000	44.900	682.000	46.100	692.600	47.700
GR	692.600	84.200	684.000	84.200	684.000	84.600	684.000	85.800	683.500	102.900
GR	682.500	119.100	682.500	143.300	682.600	171.900	682.600	171.900	682.500	207.600
GR	682.700	231.000	682.700	258.100	683.400	276.300	683.400	302.500	683.400	330.200
GR	683.600	354.800	683.700	375.100	682.500	418.700	682.800	442.600	682.300	453.300
GR	680.100	470.400	678.600	485.800	679.100	514.400	679.200	533.200	679.800	551.000
GR	678.800	580.700	678.500	609.700	678.000	631.200	678.900	655.900	679.800	685.100
GR	679.300	719.900	676.200	723.800	670.000	733.800	665.000	748.800	662.500	780.800
GR	665.000	812.800	670.000	827.800	676.200	837.800	686.700	858.000	687.100	891.700
GR	687.500	906.200	687.500	927.100	703.100	927.100	703.100	983.500	689.600	985.500
NH	4.000	0.100	1314.000	0.070	1406.000	0.060	1512.000	0.080	2101.200	0.000
ET	0.000	4.100	4.100	1378.000	1558.800	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION M									
X1	417.490	51.000	1406.000	1512.000	840.000	740.000	840.000	0.000	0.000	0.500
GR	687.600	1314.000	697.300	1359.000	687.300	1388.000	676.300	1406.000	673.300	1411.000
GR	670.300	1416.000	667.700	1421.000	665.400	1426.000	664.600	1431.000	661.900	1436.000
GR	660.800	1441.000	660.400	1446.000	660.700	1451.000	661.700	1456.000	662.900	1461.000
GR	663.300	1466.000	664.300	1471.000	664.900	1476.000	665.600	1481.000	666.700	1486.000
GR	667.300	1491.000	668.500	1496.000	670.000	1501.000	671.300	1506.000	675.200	1511.000
GR	676.300	1512.000	685.000	1568.800	681.700	1579.300	680.500	1610.600	680.500	1627.500
GR	683.100	1636.600	682.300	1645.500	684.900	1657.100	684.900	1678.300	684.000	1693.800
GR	682.800	1712.900	686.600	1738.700	683.800	1778.100	686.100	1788.300	686.300	1819.500
GR	684.500	1901.700	684.100	1925.700	683.000	1943.900	681.000	1952.100	681.000	1981.500
GR	680.700	2002.100	681.700	2017.900	682.400	2044.200	682.500	2060.800	689.700	2079.200

FORM 6413

SR	650.000	2101.250	0.000	0.300	0.500	0.000	0.500	0.500	0.000	0.000
NC	0.070	0.070	0.023	0.300	0.500	0.000	0.000	0.500	0.000	0.000
	CROSS SECTION #1 DOWNSTREAM TLE OF EMBANKMENT TO RAILROAD BRIDGE									
X1	417.580	0.000	0.000	0.000	40.000	40.000	40.000	0.500	0.000	0.000
X3	0.000	0.000	0.000	1406.000	0.500	1558.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE									
X1	417.540	54.000	1434.500	1581.500	10.000	10.000	10.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	689.200	690.600	0.000	0.000	0.000	0.000	0.000
GR	696.300	0.000	696.300	0.400	690.100	0.400	690.500	56.100	690.800	126.300
GR	690.600	214.000	690.900	303.300	690.800	377.000	690.900	456.800	690.900	526.500
GR	690.900	599.000	690.900	688.200	691.200	765.500	691.400	847.400	691.400	847.400
GR	691.400	847.900	690.900	968.300	691.200	1095.800	691.300	1188.800	691.600	1263.500
GR	691.100	1326.100	691.100	1327.400	690.600	1422.900	690.600	1433.000	687.300	1433.000
GR	687.300	1434.500	677.200	1434.500	673.400	1450.000	672.200	1460.000	670.200	1470.000
GR	667.700	1480.000	667.300	1490.000	667.200	1500.000	667.600	1510.000	668.100	1520.000
GR	670.300	1530.000	670.700	1540.000	671.500	1550.000	672.700	1560.000	673.000	1570.000
GR	674.500	1581.500	687.300	1581.500	687.300	1583.000	690.600	1583.000	691.000	1648.400
GR	691.600	1731.500	691.700	1918.400	692.000	2004.000	691.800	2088.700	691.800	2159.600
GR	691.800	2232.900	692.200	2297.400	692.200	2338.200	696.200	2338.200	0.000	0.000
	CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE									
X1	417.560	0.000	0.000	0.000	20.000	20.000	20.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	689.200	690.600	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION BETWEEN RAILROAD BRIDGE AND US 223 BRIDGE									
X1	517.570	61.000	1420.500	1588.000	5.000	5.000	5.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1442.000	0.000	1588.000	0.000	0.000	0.000	0.000
GR	696.200	0.000	688.000	0.000	688.000	103.300	687.200	183.800	686.000	273.500
GR	685.400	359.400	685.400	422.700	685.400	500.100	685.000	585.200	685.000	670.700
GR	685.200	762.200	685.700	838.600	686.400	905.100	686.800	994.200	687.500	1082.100
GR	688.100	1147.600	688.900	1217.700	688.900	1293.400	689.100	1312.300	689.100	1345.300
GR	689.100	1376.100	689.400	1404.300	693.200	1420.500	686.000	1420.500	679.000	1442.000
GR	676.200	1450.000	673.900	1460.000	672.000	1470.000	671.300	1480.000	669.900	1490.000
GR	666.700	1500.000	667.400	1510.000	667.800	1520.000	668.500	1530.000	669.200	1540.000
GR	671.200	1550.000	671.700	1560.000	673.800	1570.000	676.200	1580.000	678.000	1589.000
GR	686.000	1609.000	693.700	1609.000	689.700	1676.600	688.900	1786.900	688.900	1890.700
GR	688.900	1980.800	688.700	2100.100	688.700	2216.700	688.900	2281.200	689.500	2350.800
GR	690.800	2430.800	692.000	2513.000	692.100	2589.200	692.600	2636.100	692.600	2721.100
GR	692.200	2769.300	691.200	2819.500	691.000	2894.500	690.400	2954.700	690.400	3008.300
GR	696.300	3008.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	0.000	4.100	1442.000	1588.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE									
X1	417.570	67.000	1442.000	1588.000	5.000	5.000	5.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1442.000	0.000	1588.000	0.000	0.000	0.000	0.000
GR	696.200	0.000	688.000	0.000	688.000	103.300	687.200	183.800	686.000	273.500
GR	685.400	359.400	685.400	422.700	685.400	500.100	685.000	585.200	685.000	670.700
GR	685.200	762.200	685.700	838.600	686.400	905.100	686.800	994.200	687.500	1082.100
GR	688.100	1147.600	688.900	1217.700	688.900	1293.400	689.100	1312.300	689.100	1345.300
GR	689.100	1376.100	689.400	1404.300	693.200	1420.500	686.000	1420.500	679.000	1442.000
GR	676.200	1450.000	673.900	1460.000	672.000	1470.000	671.300	1480.000	670.000	1489.000

GR	670.000	1489.000	669.500	1491.000	669.500	1491.000	666.700	1500.000	667.400	1510.000
GR	667.600	1520.000	668.300	1330.000	669.100	1539.000	669.100	1539.000	669.400	1541.000
GR	669.400	1541.000	671.200	1350.000	671.700	1560.000	673.600	1570.000	676.200	1580.000
GR	678.000	1598.000	686.000	1609.000	693.700	1609.000	689.700	1676.600	688.900	1786.900
GR	688.900	1890.700	688.900	1980.800	688.700	2100.000	688.700	2216.700	688.900	2281.200
GR	689.300	2350.800	690.800	2430.800	692.000	2513.000	692.100	2589.200	692.600	2636.100
GR	692.600	2721.100	692.200	2769.300	691.200	2819.500	691.000	2894.500	690.400	2954.700
GR	690.400	3006.300	696.300	3008.300	0.000	0.000	0.000	0.000	0.000	0.000
SB	1.050	1.710	2.600	189.000	73.000	5.000	2045.000	1.930	0.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT UPSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE									
X1	417.620	0.000	0.000	0.000	55.000	55.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1442.000	0.000	1588.000	0.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	585.900	689.400	0.000	0.000	0.000	0.000	0.000
NH	3.000	0.100	1413.800	0.080	1440.600	0.060	1550.300	0.080	1649.400	0.100
NH	2423.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 223 BRIDGE									
X1	417.660	68.000	1440.600	1550.300	35.000	35.000	35.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1413.800	0.000	1633.000	0.000	0.000	0.000	0.000
GR	689.100	1263.000	687.600	1413.800	676.300	1440.600	673.000	1445.500	671.100	1450.500
GR	669.100	1455.500	668.500	1460.300	667.400	1465.500	666.800	1470.500	666.300	1475.500
GR	665.600	1480.500	665.200	1485.500	665.900	1490.500	665.100	1495.500	665.000	1500.500
GR	664.900	1505.500	665.200	1510.500	665.700	1515.500	667.500	1520.500	668.000	1525.500
GR	668.800	1530.500	670.600	1535.500	672.500	1540.500	676.300	1550.300	683.000	1567.100
GR	682.000	1580.700	682.000	1649.400	682.000	1690.700	685.200	1701.300	685.800	1741.700
GR	687.300	1766.100	687.600	1794.400	687.900	1826.600	687.900	1830.000	687.900	1832.400
GR	688.500	1896.000	688.500	1896.400	688.500	1897.300	685.600	1910.000	686.200	1955.200
GR	686.600	1957.600	686.600	1971.600	686.000	1973.200	686.000	2017.100	687.700	2020.000
GR	687.700	2021.400	687.700	2022.000	689.500	2112.600	689.500	2113.000	689.500	2113.400
GR	688.800	2146.000	688.500	2184.400	688.500	2184.400	687.200	2296.000	687.200	2296.500
GR	687.200	2297.100	687.200	2301.600	687.200	2301.600	687.200	2301.600	688.900	2327.000
GR	688.900	2327.000	688.900	2327.000	688.900	2344.300	691.200	2348.300	691.600	2378.300
GR	691.600	2378.700	691.600	2378.700	691.900	2423.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	1413.800	0.080	1440.600	0.060	1550.300	0.080	1649.400	0.100
NH	2423.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION N									
X1	417.680	0.000	0.000	0.000	20.000	20.000	20.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1413.800	0.000	1673.000	0.000	0.000	0.000	0.000
NC	0.090	0.080	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.100	1149.400	0.055	1462.100	0.060	1563.900	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	1.400	1050.000	2205.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION D									
X1	418.290	63.000	1462.100	1563.900	660.000	620.500	610.000	0.000	0.000	0.000
GR	697.600	854.600	697.600	879.300	688.300	878.700	688.300	878.700	687.800	937.300
GR	687.400	967.900	687.400	968.300	686.500	991.000	686.300	1063.100	684.400	1125.900
GR	679.900	1149.400	678.800	1225.400	678.800	1286.800	660.000	1300.300	680.300	1405.800
GR	681.200	1440.400	681.200	1456.400	676.300	1462.100	673.600	1467.100	671.100	1472.100
GR	669.400	1477.100	669.700	1482.100	667.600	1487.100	666.300	1492.100	665.300	1497.100

GR	665.000	1502.100	665.900	1507.100	665.500	1512.100	666.300	1517.100	666.900	1522.100
GR	667.600	1527.100	666.500	1532.100	668.900	1537.100	670.800	1542.100	672.800	1547.100
GR	673.600	1552.100	673.900	1557.100	674.900	1562.100	676.900	1563.900	679.800	1577.700
GR	662.200	1604.900	682.900	1639.600	682.900	1639.600	682.900	1639.600	662.900	1727.900
GR	682.600	1837.500	681.900	1955.200	681.600	2057.200	681.100	2116.000	681.300	2153.000
GR	681.900	2163.900	681.900	2163.900	681.900	2163.900	693.500	2163.900	693.500	2195.200
GR	684.500	2195.200	684.500	2195.200	684.500	2195.200	686.200	2224.900	689.000	2253.900
GR	692.100	2274.600	695.200	2285.200	696.300	2302.700	0.000	0.000	0.000	0.000
NC	0.040	0.040	0.060	0.300	0.500	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.100	1149.400	0.055	1462.500	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1050.000	2200.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

X1	418.330	45.000	1462.000	1566.000	40.000	40.000	40.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.800	937.300	687.400	967.900	667.400	968.300
GR	686.500	991.000	686.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.800	1286.800	680.000	1330.300	681.000	1405.000	681.500	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1484.000	665.700	1494.000
GR	665.200	1504.000	665.200	1514.000	665.500	1524.000	666.500	1534.000	668.000	1544.000
GR	671.900	1554.000	676.600	1564.000	681.400	1566.000	681.400	1579.600	681.400	1579.600
GR	680.900	1612.500	682.900	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.600	2057.200	681.100	2116.000	681.300	2153.000	681.900	2163.900	684.500	2195.200
GR	686.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700

NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1050.000	2250.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AT DOWNSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

X1	418.340	45.000	1462.000	1566.000	10.000	10.000	10.000	0.000	0.000	0.000
BT	-4.000	1405.000	682.700	682.700	1450.000	689.400	689.400	1579.600	689.400	688.400
BT	0.000	1612.500	680.900	680.900	0.000	0.000	0.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.800	937.300	687.400	967.900	687.400	968.300
GR	686.500	991.000	686.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.800	1286.800	680.000	1330.300	682.700	1405.000	689.400	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1484.000	665.700	1494.000
GR	665.200	1504.000	665.200	1514.000	665.500	1524.000	666.500	1534.000	668.000	1544.000
GR	671.900	1554.000	676.600	1564.000	681.400	1566.000	681.400	1579.600	689.400	1579.600
GR	680.900	1612.500	682.900	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.600	2057.200	681.100	2116.000	681.300	2153.000	681.900	2163.900	684.500	2195.200
GR	686.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700

NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1050.000	2250.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

X1	418.350	0.000	0.000	0.000	6.000	6.000	6.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	688.400	689.400	0.000	0.000	0.000	0.000	0.000

NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1050.000	2250.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION UPSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE									
X1	418.360	45.000	1462.000	1566.000	10.000	10.000	10.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.800	937.300	687.400	967.900	687.400	968.300
GR	686.300	991.000	586.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.600	1286.800	680.000	1330.300	681.000	1405.000	681.500	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1484.000	665.700	1494.000
GR	665.200	1504.000	665.200	1514.000	665.300	1524.000	666.500	1534.000	663.000	1544.000
GR	671.900	1554.000	676.600	1564.000	681.400	1566.000	681.400	1579.600	681.400	1579.600
GR	680.900	1612.500	682.900	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.600	2057.200	681.100	2116.000	681.300	2153.000	681.900	2163.900	684.500	2195.200
GR	686.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1050.000	2250.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION D4									
1050 2235 X1	418.400	0.000	0.000	0.000	40.000	40.000	40.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.050	0.000	0.000
NH	7.000	0.100	1824.300	0.035	1943.100	0.100	2445.100	0.060	2548.300	0.090
NH	2580.500	0.035	2753.000	0.100	2928.300	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	0.000	1700.000	2900.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION P									
X1	418.990	67.000	2445.100	2548.300	600.000	600.000	595.000	0.000	0.000	0.000
GR	689.100	1441.600	688.500	1466.000	687.900	1513.700	686.800	1576.300	686.800	1703.000
GR	685.800	1824.300	685.800	1878.600	684.000	1910.200	682.700	1943.100	680.600	1956.300
GR	676.300	1965.700	674.800	1976.500	674.100	1990.800	675.900	2008.100	676.000	2031.300
GR	678.300	2041.000	678.700	2060.100	679.500	2072.600	678.700	2090.300	678.500	2116.400
GR	677.900	2147.100	676.700	2170.900	676.500	2182.300	677.600	2202.300	677.900	2235.200
GR	677.300	2271.700	675.500	2288.600	675.500	2313.500	676.400	2342.300	677.800	2361.400
1700 GR	677.600	2396.000	680.300	2418.600	680.300	2432.600	676.300	2445.100	676.300	2445.100
2546 GR	674.400	2450.100	670.700	2455.100	668.800	2460.100	668.500	2465.100	666.800	2470.100
GR	665.700	2475.100	665.800	2480.100	663.300	2485.100	663.200	2490.100	661.700	2495.100
GR	661.400	2500.100	661.300	2505.100	662.000	2510.100	662.900	2515.100	663.900	2520.100
GR	665.400	2525.100	667.300	2530.100	669.500	2535.100	672.600	2540.100	676.300	2548.300
GR	683.800	2561.200	682.100	2580.500	681.500	2667.600	681.100	2753.000	681.100	2790.600
GR	682.200	2806.200	685.200	2821.500	687.000	2840.400	689.100	2879.900	689.900	2910.200
GR	690.500	2928.300	690.500	2928.300	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	307.600	0.045	642.600	0.090	686.900	0.060	767.400	0.100
NH	830.900	0.050	1383.600	0.100	1648.100	0.000	0.000	0.000	0.000	0.000
ET	0.000	4.100	6.100	400.000	0.600	400.000	1450.000	0.000	0.000	0.000
	CROSS SECTION G									
X1	419.940	60.000	686.900	767.400	850.000	650.000	950.000	0.000	0.000	0.000
GR	688.600	190.200	686.700	214.700	684.600	236.500	683.000	254.100	683.800	307.600
400 GR	683.400	350.000	683.100	394.200	682.500	446.100	682.200	494.900	681.800	534.500
GR	681.200	571.400	681.200	611.600	681.300	642.600	682.300	670.400	676.400	686.900
1630 GR	673.600	691.900	672.200	696.900	670.400	701.900	668.900	706.900	667.900	711.900
GR	667.700	716.900	667.000	721.900	666.800	726.900	666.500	731.900	666.600	736.900
GR	666.900	741.900	668.000	749.900	669.700	751.900	671.700	756.900	673.600	761.900

	GR	675.300	736.900	676.400	767.400	679.300	782.400	680.100	830.900	679.700	869.500
	GR	676.700	899.100	675.300	941.300	679.400	951.500	679.400	968.400	679.500	968.500
	GR	678.800	1013.900	676.100	1045.300	677.900	1098.800	677.200	1123.000	676.300	1136.200
	GR	675.400	1194.900	675.900	1199.600	676.300	1238.200	677.500	1278.500	677.500	1307.700
	GR	678.400	1356.300	680.100	1363.600	681.300	1421.800	682.400	1449.900	682.400	1478.200
	GR	681.900	1508.500	682.700	1534.600	684.600	1567.800	686.600	1606.600	689.000	1648.100
	NC	0.000	0.000	0.000	0.400	0.700	0.000	0.000	0.000	0.000	0.000
	NH	5.000	0.050	1294.100	0.120	2118.300	0.060	2203.600	0.090	2247.000	0.100
	NH	2554.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	ET	0.000	4.100	1.400	550.000	0.000	0.000	0.000	0.000	0.000	0.000
		CROSS SECTION S									
	X1	421.910	61.000	2118.300	2203.600	400.000	1900.000	1970.000	0.000	0.000	0.000
	GR	690.400	118.700	688.900	145.500	688.900	145.500	688.900	145.900	684.900	182.400
	GR	682.400	226.400	682.400	285.300	682.800	396.900	682.400	489.400	680.700	560.200
	GR	680.000	675.600	680.000	794.600	680.500	862.600	679.500	900.500	678.200	953.400
	GR	679.100	1020.300	679.600	1071.300	678.700	1097.400	677.600	1135.100	677.300	1173.700
	GR	679.600	1202.300	680.400	1234.500	680.000	1294.100	680.000	1433.900	680.000	1541.100
550	GR	680.100	1610.800	679.600	1655.500	676.500	1681.000	676.500	1724.900	679.700	1771.400
	GR	678.400	1852.000	677.600	1935.600	677.800	2015.900	678.700	2036.200	678.700	2046.000
2221	GR	678.700	2080.200	679.700	2102.200	676.300	2118.300	674.100	2123.300	672.900	2128.300
	GR	670.700	2133.300	669.200	2138.300	667.800	2143.300	667.500	2148.300	666.100	2153.300
	GR	665.600	2158.300	665.600	2163.300	667.200	2168.300	667.800	2173.300	668.500	2178.300
	GR	669.500	2183.300	671.300	2186.300	673.000	2193.300	676.300	2203.600	688.900	2223.700
	GR	688.900	2247.000	688.900	2247.000	688.900	2247.000	689.400	2344.800	689.700	2468.000
	GR	690.100	2554.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	NH	4.000	0.050	1712.800	0.120	1878.300	0.060	1990.800	0.080	2059.300	0.000
	ET	0.000	4.100	0.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000
		CROSS SECTION T									
	X1	423.110	70.000	1878.300	1990.800	800.000	1200.000	1200.000	0.000	0.000	0.000
	GR	696.300	0.000	691.200	0.000	690.800	16.600	690.000	37.300	690.000	44.800
	GR	690.000	45.400	690.000	45.400	688.600	67.200	688.600	67.200	688.600	67.600
	GR	688.600	103.000	687.900	138.900	686.900	179.600	684.300	215.100	682.600	270.800
600	GR	682.600	349.800	683.000	420.200	683.800	479.900	684.300	530.100	682.700	589.300
2041	GR	681.700	653.800	681.800	748.300	681.800	849.400	681.800	938.600	682.400	982.400
	GR	681.300	1040.700	681.200	1074.500	680.600	1189.000	679.700	1223.700	680.900	1274.200
	GR	681.100	1322.700	681.000	1382.300	679.900	1448.300	678.800	1490.800	679.600	1533.500
	GR	680.900	1580.900	680.800	1617.900	680.000	1667.600	680.000	1699.500	681.600	1712.800
	GR	681.400	1769.500	681.400	1824.700	682.500	1851.200	676.300	1878.300	674.600	1883.300
	GR	672.900	1888.300	671.100	1893.300	669.500	1898.300	668.400	1903.300	667.900	1908.300
	GR	667.800	1913.300	667.200	1918.300	666.400	1923.300	666.300	1928.300	666.000	1933.300
	GR	665.500	1938.300	665.700	1943.300	662.200	1948.300	666.700	1953.300	667.100	1958.300
	GR	669.100	1953.300	670.900	1968.300	671.500	1973.300	672.000	1979.300	672.500	1983.300
	GR	674.800	1998.300	676.300	1990.800	679.200	2000.400	687.200	2037.000	689.100	2059.300
	NH	6.000	0.050	919.200	0.080	1100.400	0.060	1193.500	0.070	1215.600	1.000
	NH	1709.100	0.050	2066.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	ET	0.000	4.100	6.100	825.000	0.000	825.000	1975.000	0.000	0.000	0.000

FORM 6413

CROSS SECTION U
"N" VALUE SET VERY HIGH (1.00) TO ELIMINATE CONVEYANCE IN ROB

XI	424.260	58.000	1100.400	1193.500	900.000	1400.000	1250.000	0.000	0.000	0.000
GR	688.300	118.100	668.700	157.800	689.000	187.000	687.800	210.100	685.000	252.600
GR	683.500	296.300	683.500	357.300	684.000	465.700	684.900	591.500	684.900	682.700
GR	684.200	730.400	663.300	798.500	683.300	871.000	684.300	919.200	684.900	997.400
GR	685.200	1032.700	664.300	1057.700	682.000	1093.900	676.300	1100.400	673.600	1105.400
GR	672.900	1110.400	672.000	1115.400	670.000	1120.400	668.000	1125.400	667.100	1130.400
GR	666.900	1135.400	666.900	1140.400	667.000	1145.400	667.200	1150.400	668.000	1155.400
GR	668.300	1160.400	669.700	1165.400	670.200	1170.400	668.500	1175.400	670.300	1180.400
GR	670.800	1185.400	672.700	1190.400	676.300	1193.500	681.700	1215.600	681.700	1252.100
GR	681.700	1319.700	681.300	1391.000	680.200	1476.700	679.400	1563.100	679.400	1659.800
GR	679.800	1686.600	678.900	1703.200	681.300	1709.100	677.300	1717.700	679.700	1725.900
GR	679.700	1735.500	677.700	1747.000	676.800	1793.500	676.800	1923.900	678.200	1968.800
GR	682.100	2022.400	683.900	2040.900	688.100	2066.300	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.200	0.400	0.000	0.000	0.000	0.000	0.000
NH	8.000	0.100	1235.600	0.055	1475.250	0.060	1569.400	0.070	1588.900	0.050
NH	1613.700	1.000	2929.400	0.050	2962.200	0.100	3134.600	0.000	0.000	0.000
ET	0.000	0.000	1.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION V
"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

XI	425.460	76.000	1475.200	1569.400	1300.000	500.000	1100.000	0.000	0.000	0.000
GR	689.400	1093.300	689.800	1105.300	689.800	1105.300	689.600	1115.700	687.500	1131.900
GR	684.000	1151.000	678.900	1164.500	677.000	1183.800	675.600	1207.900	675.600	1235.600
GR	676.700	1245.100	677.300	1289.400	678.000	1337.900	680.000	1363.600	681.400	1392.800
GR	682.000	1408.800	683.000	1423.100	683.000	1433.400	682.400	1446.900	676.300	1475.200
GR	674.600	1480.200	672.700	1485.200	670.600	1490.200	668.300	1495.200	667.200	1500.200
GR	667.200	1505.200	667.600	1510.200	667.800	1515.200	667.900	1520.200	668.000	1525.200
GR	667.900	1530.200	668.100	1535.200	668.800	1540.200	669.900	1545.200	670.800	1550.200
GR	671.900	1555.200	672.400	1560.200	673.200	1565.200	676.300	1569.400	685.000	1580.000
GR	685.000	1585.800	682.900	1598.900	682.300	1613.700	682.100	1674.200	682.100	1729.700
GR	682.100	1752.500	682.600	1845.300	681.900	1916.600	681.400	1970.200	682.100	2051.600
GR	681.000	2106.800	680.200	2147.200	681.900	2253.900	681.600	2330.100	681.000	2376.700
GR	681.000	2458.100	681.600	2498.800	683.500	2550.100	685.500	2597.200	683.600	2661.300
GR	682.800	2697.700	681.300	2760.800	681.200	2809.500	680.900	2864.200	681.400	2909.200
GR	684.000	2915.200	681.100	2929.400	676.200	2944.500	676.200	2944.900	680.700	2962.200
GR	682.400	2998.200	682.000	3010.900	679.700	3047.400	682.300	3076.200	684.500	3096.000
GR	689.200	3134.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.080	1447.500	0.060	1522.300	0.080	1558.700	0.050	1609.400	1.000
NH	4052.700	0.050	4818.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION X
"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

XI	427.260	81.000	1447.500	1522.300	1900.000	200.000	1800.000	0.000	0.000	0.000
GR	686.700	1441.600	676.300	1447.500	674.100	1452.500	672.100	1457.500	670.700	1462.500
GR	669.800	1467.500	669.000	1472.500	668.200	1477.500	666.900	1482.500	666.300	1487.500
GR	665.600	1492.500	665.500	1497.500	666.400	1502.500	669.200	1507.500	671.400	1512.500
GR	673.100	1517.500	676.300	1522.300	679.700	1526.800	680.700	1555.100	685.300	1558.700
GR	682.100	1667.500	681.000	1575.100	680.800	1609.400	680.800	1674.400	682.000	1738.300
GR	682.400	1826.100	682.300	1911.000	682.300	2013.900	682.300	2111.700	682.300	2198.400
GR	692.500	2268.100	682.100	2361.500	682.100	2410.300	683.500	2460.400	684.200	2498.500
GR	683.200	2547.600	683.200	2538.400	682.000	2757.200	683.400	2865.600	682.100	2988.300
GR	679.500	3040.000	679.700	3052.500	683.400	3070.500	683.400	3164.200	693.600	3257.100

FORM 6413

GR	683.600	3557.400	683.500	3589.400	693.200	3441.300	682.300	3523.700	682.300	3575.300
GR	683.700	3629.200	685.300	3677.100	687.000	3740.200	687.000	3804.900	686.300	3828.600
GR	684.200	3863.900	682.500	3905.200	681.500	3974.200	681.200	4052.700	684.700	4055.900
GR	684.300	4071.700	682.100	4084.400	680.800	4100.600	679.100	4109.700	681.100	4119.300
GR	682.700	4134.000	682.300	4160.900	682.700	4193.900	683.400	4205.800	683.700	4222.400
GR	687.300	4229.600	688.900	4237.100	688.900	4306.900	689.100	4395.700	689.100	4497.600
GR	688.700	4536.800	688.600	4609.200	688.900	4680.800	689.700	4774.700	690.600	4817.700
GR	696.300	4818.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	2479.800	0.090	2552.000	0.060	2637.400	0.070	2677.600	0.050
MH	3094.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION Z									
X1	429.590	87.000	2552.000	2637.400	900.000	2320.000	2330.000	0.000	0.000	0.000
GR	688.000	450.000	686.000	475.000	684.000	500.000	684.000	650.000	683.000	750.000
GR	680.000	1000.000	681.000	1000.000	681.000	1028.900	681.600	1069.000	681.300	1090.800
GR	680.300	1122.800	678.100	1150.100	678.100	1190.000	678.100	1245.000	678.100	1302.100
GR	678.100	1354.500	678.200	1412.500	678.400	1445.500	679.100	1467.100	680.100	1504.000
GR	681.100	1539.400	681.000	1615.800	681.400	1666.400	680.700	1716.300	680.400	1764.700
5320 GR	680.200	1795.300	679.800	1834.300	680.000	1876.700	681.000	1916.900	681.700	1955.900
2670 GR	682.300	1994.100	682.700	2041.800	682.700	2070.100	682.700	2108.100	681.500	2134.800
GR	680.500	2163.300	679.700	2188.900	679.700	2216.700	680.000	2249.300	681.100	2275.100
GR	682.000	2293.700	682.700	2316.400	683.200	2337.200	683.300	2363.400	682.200	2383.500
GR	681.100	2405.700	680.900	2426.800	680.100	2443.000	680.800	2469.400	681.600	2479.800
GR	684.400	2497.000	679.400	2519.600	679.400	2544.400	676.300	2552.000	674.400	2557.000
GR	672.100	2562.000	670.700	2567.000	670.800	2572.000	670.800	2577.000	671.000	2582.000
GR	671.000	2587.000	671.000	2592.000	670.900	2597.000	670.800	2602.000	670.800	2607.000
GR	670.700	2612.000	671.000	2617.000	671.100	2622.000	672.200	2627.000	672.800	2632.000
GR	676.300	2637.400	679.200	2644.100	682.600	2664.200	684.600	2677.600	684.700	2695.300
GR	683.400	2701.200	683.400	2706.700	685.600	2717.400	686.300	2749.700	687.300	2749.700
GR	688.600	2779.200	689.600	2827.700	689.500	2870.600	689.100	2928.200	689.600	2994.000
GR	690.500	3038.400	690.800	3094.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.090	2445.900	0.060	2533.300	0.070	2556.700	0.050	2958.100	0.000
ET	0.000	4.100	0.000	0.000	2600.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AA									
X1	430.810	80.000	2445.900	2533.300	150.000	1300.000	1220.000	0.000	0.000	0.000
GR	688.000	150.000	684.000	450.000	684.000	500.000	683.000	800.000	680.000	850.000
GR	679.000	1000.000	678.100	1000.000	678.200	1014.800	680.200	1041.300	679.600	1087.200
GR	679.600	1131.600	678.300	1169.600	677.800	1218.000	677.800	1261.900	677.800	1317.100
GR	677.900	1362.700	678.700	1393.400	678.900	1439.900	679.500	1470.300	680.400	1496.600
921 GR	680.400	1527.800	680.100	1561.300	680.000	1575.400	681.200	1601.800	681.800	1627.800
GR	680.200	1651.400	679.000	1683.800	678.900	1719.700	678.500	1776.900	678.100	1819.700
2557 GR	678.100	1861.800	678.800	1988.200	680.600	1916.200	682.700	1940.100	682.900	1978.900
GR	682.900	2019.300	683.300	2062.100	682.600	2111.700	681.900	2156.000	681.200	2193.700
GR	680.800	2237.200	680.800	2284.800	681.600	2315.300	682.500	2345.700	683.000	2368.900
GR	683.700	2389.700	684.100	2411.700	681.600	2428.400	676.300	2444.500	676.300	2444.300
GR	676.300	2445.900	674.100	2450.900	672.200	2455.900	671.500	2460.900	670.800	2465.900
GR	670.200	2470.900	669.800	2475.900	669.600	2480.900	669.300	2485.900	668.500	2490.900
GR	668.500	2495.900	668.800	2500.900	669.100	2505.900	669.500	2510.900	670.300	2515.900
GR	671.400	2520.900	673.200	2525.900	675.300	2533.300	680.000	2537.000	680.900	2546.900
GR	682.700	2556.700	686.400	2559.700	686.400	2574.600	686.400	2575.000	686.400	2575.000
GR	686.600	2612.600	687.100	2696.800	683.200	2779.800	688.600	2861.600	686.700	2956.100
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

THIS RUN EXECUTED 3 DEC 85 13:55:22

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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
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T1 VILLAGE OF BLISSFIELD,MI FIS
T2 100-YEAR FLOOD, ENCROACHED
T3 RIVER RAISIN, BLISSFIELD

J1	ICHECK	ING	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	3.	0.	0.	0.000000	0.00	0.0	0	682.290	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

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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     XML      XNCH     XNR      WTN      ELMIN    SSTA
SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

PROF 2

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 398.070
        CROSS SECTION BB
  398.07    22.79   682.29     0.00   682.29   682.36     0.07     0.00     0.00   666.30
  10830.     561.    5231.    4988.     518.    1908.    3658       0.       0.   666.30
    0.00     0.91     2.77     1.36    0.092    0.060    0.066    0.000   659.50   353.59
0.000228       0.       0.       0.        0        0        0     0.00   693.81  1047.40

1470 NH CARD USED
*SECNO 399.300
2800 NAT Q1=   8962.75  WSEL=    682.55  ENC Q1=   8962.75  WSEL=    682.65  RATIO=  0.0000
NAT Q1=   9140.  RATIOS LOB,CH,ROB=  0.7070  0.2707  0.0183  WSEL=    682.65

3470 ENCROACHMENT STATIONS=     632.1    1551.6  TYPE=     4  TARGET=      0.019
        CROSS SECTION CC
  399.30    22.75   682.55     0.00   682.55   682.59     0.04     0.23     0.00   666.50
  10830.    7665.    3065.      99.    5765.    1368.     131.     190.      23.   666.50
    0.22     1.33     2.24     0.76    0.050    0.060    0.080    0.000   659.80   632.07
0.000151    1250.    1230.    1200.        2        0        0     0.00   919.54  1551.60

CCHV=   0.400 CEHV=   0.700
1490 NH CARD USED
*SECNO 400.500

3470 ENCROACHMENT STATIONS=    1160.0    2250.0  TYPE=     1  TARGET=    1090.000
        CROSS SECTION DD
  400.50    20.38   682.78     0.00   682.77   682.86     0.08     0.24     0.02   666.70
  10830.    2782.    4212.    3836.    2294.    1367.    2530.     368.      49.   666.70
    0.37     1.21     3.08     1.52    0.054    0.060    0.061    0.000   662.40  1160.00
0.000313    1100.    1200     1250.        1        0        0     0.00  1090.00  2250.00

1490 NH CARD USED
*SECNO 401.200
2800 NAT Q1=   4712.49  WSEL=    683.02  ENC Q1=   4712.49  WSEL=    683.12  RATIO=  0.0000
NAT Q1=   4856.  RATIOS LOB,CH,ROB=  0.4555  0.5052  0.0393  WSEL=    683.12

3470 ENCROACHMENT STATIONS=    1070.7    2229.0  TYPE=     4  TARGET=      0.030
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FORM 6413

CROSS SECTION E2

401.20	20.64	663.04	0.00	660.05	683.25	0.15	0.28	0.05	666.70
10830	4836.	3709.	262.	3352	1367	208.	457.	67.	666.70
0.44	1.44	4.12	1.36	0.054	0.060	0.100	0.000	662.40	1070.72
0.000548	700.	700.	700.	2	0	0	0.00	1158.23	2228.95

1490 NH CARD USED
*SECNO 402.050

3470 ENCROACHMENT STATIONS= 1500.0 2450.0 TYPE= 1 TARGET= 950.000

CROSS SECTION A

402.05	20.89	663.30	0.00	603.34	683.42	0.03	0.18	0.05	666.90
10830.	814.	4513.	5503.	1090.	2423.	4515.	579.	86.	666.90
0.60	0.75	1.86	1.22	0.059	0.060	0.051	0.000	662.50	1500.00
0.000115	700.	850.	700	0	0	0	0.00	950.00	2450.00

666

1490 NH CARD USED
*SECNO 403.750

3470 ENCROACHMENT STATIONS= 725.0 2150.0 TYPE= 1 TARGET= 1425.000

CROSS SECTION B

403.75	21.50	660.60	0.00	683.53	683.63	0.03	0.20	0.00	667.10
10830	1529.	2790.	6511.	1621.	1393.	6276.	910.	131.	667.10
0.97	0.94	2.00	1.04	0.071	0.060	0.052	0.000	662.10	725.00
0.000126	1100.	1700.	1800.	2	0	0	0.00	1425.00	2150.00

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 404.850
2800 NAT Q1= 9360.72 WSEL= 683.67 ENC Q1= 9360.72 WSEL= 683.77 RATIO= 0.0000
NAT Q1= 10026. RATIOS LOB,CH,ROB= 0.0143 0.2348 0.7509 WSEL= 683.77

3470 ENCROACHMENT STATIONS= 1477.0 3114.7 TYPE= 4 TARGET= 0.066

CROSS SECTION C

404.85	21.34	683.74	0.00	683.67	683.77	0.03	0.14	0.00	667.20
10830.	0.	2443.	8387.	0.	1299.	7919.	1129.	167.	667.20
1.20	0.00	1.88	1.06	0.000	0.060	0.053	0.000	662.40	1477.00
0.000146	1150.	1100.	1000.	1	0	0	0.00	1637.71	3114.71

1490 NH CARD USED
*SECNO 456.450
2800 NAT Q1= 8146.15 WSEL= 683.88 ENC Q1= 8146.15 WSEL= 683.98 RATIO= 0.0000
NAT Q1= 8389. RATIOS LOB,CH,ROB= 0.4673 0.4818 0.0509 WSEL= 683.98

3470 ENCROACHMENT STATIONS= 527.5 1812.7 TYPE= 4 TARGET= 0.022

FORM 6413

CROSS SECTION D

406.45	28.77	693.97	0.00	693.83	684.03	0.06	0.25	0.01	667.40
10830.	5042.	3847.	440	6482	1997.	1033.	1424.	218.	667.40
1.43	1.13	2.68	0.40	0.055	0.060	0.100	0.000	655.20	537.54
0.000178	1380.	1650.	1450.	2	0	0	0.00	1235.32	1812.86

CONV= 0.300 CENV= 0.500
1490 NH CARD USED
#SECNO 407.770
2500 NAT Q1= 6477.60 WSEL= 684.16 ENC Q1= 6477.60 WSEL= 684.25 RATIO= 0.0000
NAT Q1= 6705. RATIOS LOB,CH,ROB= 0.0467 0.3789 0.5744 WSEL= 684.26

3470 ENCROACHMENT STATIONS= 133.7 344.3 TYPE= 4 TARGET= 0.034
CROSS SECTION E

407.77	20.65	684.25	0.00	684.16	684.33	0.03	0.29	0.01	667.50
10830.	390	4228	6212.	230.	1421.	3898.	1420.	348.	667.50
1.60	1.70	2.98	1.59	0.070	0.060	0.054	0.000	663.60	133.74
0.000278	1200.	1320.	1400.	0	0	0	0.00	710.61	844.35

1490 NH CARD USED
#SECNO 408.700
2300 NAT Q1= 7249.45 WSEL= 684.40 ENC Q1= 7249.45 WSEL= 684.50 RATIO= 0.0000
NAT Q1= 8585. RATIOS LOB,CH,ROB= 0.0094 0.2594 0.7312 WSEL= 684.50

3470 ENCROACHMENT STATIONS= 58.0 1022.2 TYPE= 4 TARGET= 0.156
CROSS SECTION F

408.70	22.00	684.50	0.00	684.40	684.55	0.05	0.21	0.01	667.80
10830.	0.	5993.	7337.	0.	1266.	5432	1731	262.	667.80
1.74	0.00	2.36	1.44	0.000	0.060	0.054	0.000	662.50	58.00
0.000243	950	930.	750.	2	0	0	0.00	964.24	1022.24

1490 NH CARD USED
#SECNO 410.070
2800 NAT Q1= 9931.72 WSEL= 684.61 ENC Q1= 9931.72 WSEL= 684.71 RATIO= 0.0000
NAT Q1= 10730 RATIOS LOB,CH,ROB= 0.0081 0.2761 0.7158 WSEL= 684.71

3470 ENCROACHMENT STATIONS= 27.1 1465.0 TYPE= 4 TARGET= 0.074
CROSS SECTION G

410.07	20.02	684.72	0.00	684.61	684.75	0.02	0.19	0.01	668.00
10830	0	2976.	7854.	0.	1695.	7675	1936.	292.	668.00
1.99	0.00	1.76	1.02	0.000	0.060	0.053	0.000	664.70	27.10
0.000126	1440.	1370.	1050.	0	0	0	0.00	1437.90	1465.00

1490 NH CARD USED

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

*SECNO 411.350
2800 NAT Q1= 10260.38 WSEL= 684.74 ENC Q1= 10260.38 WSEL= 684.84 RATIO= 0.0000
NAT Q1= 10582. RATIOS LOB,CH,ROB= 0.0129 0.3103 0.6768 WSEL= 684.84

3470 ENCROACHMENT STATIONS= 1139.6 2803.7 TYPE= 4 TARGET= 0.030
CROSS SECTION H

411.35	22.35	684.85	0.00	684.74	684.88	0.02	0.13	0.00	668.40
10830.	0.	3204.	7626.	0.	1825.	8136.	2161.	326.	668.40
2.24	0.00	1.76	0.93	0.000	0.060	0.054	0.000	662.50	1139.60
0.000113	1450.	1230.	950.	1	0	0	0.00	1664.13	2803.73

1490 NH CARD USED
*SECNO 412.950
2800 NAT Q1= 7845.40 WSEL= 684.92 ENC Q1= 7845.40 WSEL= 685.02 RATIO= 0.0000
NAT Q1= 9823. RATIOS LOB,CH,ROB= 0.7367 0.2478 0.0155 WSEL= 685.02

3470 ENCROACHMENT STATIONS= 904.9 1938.8 TYPE= 4 TARGET= 0.201
CROSS SECTION I

412.95	20.35	685.05	0.00	684.92	685.09	0.04	0.21	0.01	668.30
10830.	7794.	3036.	0.	5742.	1377.	0.	2425.	367.	668.30
2.48	1.36	2.20	0.00	0.052	0.060	0.000	0.000	664.70	904.89
0.000205	1200.	1600.	1350.	2	0	0	0.00	1033.91	1938.80

1490 NH CARD USED
*SECNO 413.910
2800 NAT Q1= 10571.16 WSEL= 685.07 ENC Q1= 10571.16 WSEL= 685.17 RATIO= 0.0000
NAT Q1= 12768. RATIOS LOB,CH,ROB= 0.7101 0.2821 0.0078 WSEL= 685.17

3470 ENCROACHMENT STATIONS= 468.0 1689.4 TYPE= 4 TARGET= 0.172
CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM

413.91	20.50	685.20	0.00	685.07	685.23	0.03	0.13	0.00	668.30
10830.	7397.	3433.	0.	7356.	2003.	0.	2590.	389.	668.30
2.68	1.01	1.71	0.00	0.055	0.060	0.000	0.000	664.70	467.98
0.000111	850.	960.	900.	2	0	0	0.00	1221.42	1689.40

1490 NH CARD USED
*SECNO 413.960
2800 NAT Q1= 7269.10 WSEL= 685.03 ENC Q1= 7269.10 WSEL= 685.18 RATIO= 0.0000
NAT Q1= 9434. RATIOS LOB,CH,ROB= 0.8622 0.1300 0.0078 WSEL= 685.18

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SECNO    DEPTH    CWSEL    CRIWS    WSELK    EQ       HV       HL       OLOSS   DANK 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=      466.2     1710.0  TYPE=      4  TARGET=        0 229
        CROSS SECTION AT BLISSFIELD DAM
  413.96     8.91   685.21     0.00   685.08   685.24     0 03     0.01     0.00   676.30
  10830.    9072.    1758.       0     7274.    1158.       0.    2601.     391.    676.30
    2.69     1.25     1.52     0.00    0.063    0.060    0.000    0.000   676.30   466.17
0.000222      50.      50.      50.        0        0        0     0 00  1243.83  1710.00

490 NH CARD USED
*SECNO 414.010
2800 NAT Q1=    6623.18  WSEL=     685.08  ENC Q1=    6623 18  WSEL=     685.18  RATIO=  0.0000
NAT Q1=    8471.  RATIOS LOB,CH,ROB=  0.7610  0 2372  0.0019  WSEL=     685.18

3470 ENCROACHMENT STATIONS=     1344.3     2555.9  TYPE=      4  TARGET=        0.218
        CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELD DAM
  414.01    19.11   685.21     0 00   685.08   685.26     0.04     0.01     0 01   676.80
  10830.    7686.    3144       0.     5571.    1288.       0.    2610.     392.    676.80
    2.70     1.38     2.27     0 00    0.052    0.060    0 000    0.000   666.10  1344.30
0.000271      50       50.      50.        0        0        0     0.00  1211.60  2555.90

1490 NH CARD USED
*SECNO 414.600
2800 NAT Q1=    8303.73  WSEL=     685 21  ENC Q1=    8303.73  WSEL=     685.31  RATIO=  0.0000
NAT Q1=   11293.  RATIOS LOB,CH,ROB=  0.8076  0.1907  0.0017  WSEL=     685.31

3470 ENCROACHMENT STATIONS=     1230.9     2555.9  TYPE=      4  TARGET=        0.265
        CROSS SECTION J
  414.60    19.74   685.34     0.00   685.21   685.37     0 03     0.10     0.00   676.30
  10830.    8154.    2676.       0.     6856.    1446.       0.    2693.     405.    676.30
    2.80     1.19     1.85     0.00    0.052    0.060    0.000    0.000   665.60  1230.91
0.000173     450.     550.     650.        2        0        0     0.00  1324.99  2555.90

1490 NH CARD USED
*SECNO 415.620
2800 NAT Q1=    8515.72  WSEL=     685 35  ENC Q1=    8515.72  WSEL=     685.45  RATIO=  0.0000
NAT Q1=   10479.  RATIOS LOB,CH,ROB=  0.7368  0.2579  0.0052  WSEL=     685.45

3470 ENCROACHMENT STATIONS=     1365.8     2333.9  TYPE=      4  TARGET=        0.187
        CROSS SECTION K
  415.62    19.59   685.49     0.00   685.35   685.52     0.04     0.15     0.00   676.20
  10830.    7526.    2302.       0.     5738.    1726.       0.    2853.     428.    676.30
    2.96     1.31     1.91     0.00    0 052    0.060    0.000    0.000   665.90  1365.80
0 000165     850.    1020.    1100        1        0        0     0.00   963 10  2333 90
```

SECNO	DEPTH	CNSEL	CRIWS	ASELC	EG	KV	HL	QLOBS	BANK ELEV
G	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= 0.500 CEHV= 1.000
1490 NH CARD USED
*SECNO 416.650

3470 ENCROACHMENT STATIONS= 450.0 835.0 TYPE= 1 TARGET= 405.810
CROSS SECTION L

416.65	23.19	685.69	0.00	685.56	685.85	0.16	0.21	0.12	676.20
10830.	2803.	7926.	100.	1801.	2202.	37.	2952	439.	676.20
3.04	1.56	3.60	1.16	0.070	0.060	0.070	0.000	662.50	450.00
0.000433	600.	1030.	1100.	2	0	0	0.00	403.81	855.81

1490 NH CARD USED
*SECNO 417.490

3470 ENCROACHMENT STATIONS= 1378.0 1558.8 TYPE= 1 TARGET= 180.800
CROSS SECTION R

417.49	25.77	686.17	0.00	686.05	686.52	0.35	0.47	0.19	676.30
10830.	122.	10304.	403.	80.	2128.	258.	3015.	444.	676.30
3.09	1.53	4.84	1.56	0.070	0.060	0.080	0.000	660.40	1389.85
0.000767	840.	840.	740.	2	0	0	0.00	168.94	1558.80

CCHV= 0.300 CEHV= 0.500
*SECND 417.530

3470 ENCROACHMENT STATIONS= 1406.0 1558.0 TYPE= 1 TARGET= 152.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO RAILROAD BRIDGE

417.53	25.76	686.16	0.00	686.04	686.54	0.38	0.01	0.02	676.30
10830.	0.	10637.	193.	0.	2127.	257.	3017.	445.	676.30
3.09	0.00	5.00	0.75	0.000	0.023	0.070	0.000	660.40	1406.00
0.000134	40.	40.	40.	2	0	0	0.00	152.00	1558.00

*SECND 417.540

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 690.60 MAX ELLC= 689.20

CROSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

417.54	19.00	686.20	0.00	686.08	686.55	0.38	0.00	0.01	687.30
10830.	0.	10830.	0.	0.	2264.	0.	3018.	445.	687.30
3.09	0.00	4.78	0.00	0.000	0.023	0.000	0.000	667.20	1434.50
0.000173	10	10.	10	2	0	0	0.00	147.00	1581.50

FORM 6413

SECNO	DEPTH	CHSEL	CRINS	KDELK	EG	HV	HL	CLOSS	BANK ELEV
Q	QLOJ	QCH	QROB	ALOJ	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 417.560

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 690.60 MAX ELLC= 689.20

CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

417.56	19.00	686.20	0.00	686.08	686.56	0.36	0.00	0.00	687.30
10830.	0.	10830.	0.	0.	2264.	0.	3019.	445.	687.30
3.09	0.00	4.79	0.00	0.000	0.023	0.000	0.000	667.20	1434.50
0.000173	20.	20.	20.	0	0	0	0.00	147.00	1581.50

*SECNO 517.570

3470 ENCROACHMENT STATIONS= 1442.0 1588.0 TYPE= 1 TARGET= 146.000

CROSS SECTION BETWEEN RAILROAD BRIDGE AND US 223 BRIDGE

517.57	19.48	686.18	0.00	686.06	686.58	0.39	0.00	0.02	100000.00
10830.	0.	10830.	0.	0.	2150.	0.	3019.	445.	100000.00
3.09	0.00	5.04	0.00	0.000	0.023	0.000	0.000	666.70	1442.00
0.000196	5.	5.	5.	1	0	0	0.00	146.00	1588.00

*SECNO 417.570

3470 ENCROACHMENT STATIONS= 1442.0 1588.0 TYPE= 1 TARGET= 146.000

CROSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE

417.57	19.48	686.18	0.00	686.06	686.58	0.39	0.00	0.00	679.00
10830.	0.	10830.	0.	0.	2152.	0.	3019.	445.	100000.00
3.09	0.00	5.03	0.00	0.000	0.023	0.000	0.000	666.70	1442.00
0.000196	5	5.	5.	0	0	0	0.00	146.00	1588.00

SPECIAL BRIDGE

5070, VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.71	2.80	189.00	73.00	5.00	2045.00	1.93	666.70	666.70

*SECNO 417.620
*PRESSURE FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELA	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
EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD	
686.93	686.90	0.02	0.	10930.	2045.	2017.	685.90	689.40	

3470 ENCROACHMENT STATIONS= 1342.0 1588.0 TYPE= 1 TARGET= 146.000
CROSS SECTION AT UPSTREAM FACE OF US 323 (ADRIAN ST.) BRIDGE

417.62	19.85	686.55	0.00	686.43	686.93	0.37	0.35	0.00	679.00
10830.	0.	10830.	0.	0.	2206.	0.	3022.	445	100000.00
3.10	0.00	4.91	0.00	0.000	0.023	0.000	0.000	656.70	1342.00
0.000181	55	55.	55.	2	0	0	0.00	146.00	1588.00

3490 NH CARD USED
SECNO 417.660

3470 ENCROACHMENT STATIONS= 1413.8 1633.0 TYPE= 1 TARGET= 219.200
CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 223 BRIDGE

417.66	21.69	686.59	0.00	686.46	686.94	0.36	0.01	0.00	676.30
10830.	195.	9990.	645.	125.	2006.	412.	3024.	445.	676.30
3.10	1.55	4.98	1.57	0.080	0.060	0.080	0.000	664.90	1416.20
0.000879	35.	35.	35.	2	0	0	0.00	216.80	1633.00

CCHV= 0.500 CEHV= 1.000
3490 NH CARD USED
SECNO 417.680

3470 ENCROACHMENT STATIONS= 1413.8 1673.0 TYPE= 1 TARGET= 259.200
CROSS SECTION N

417.68	21.74	686.64	0.00	686.52	686.98	0.33	0.02	0.01	676.30
10830.	192.	9751.	887.	127.	2013.	602	3025.	445.	676.30
3.10	1.51	4.84	1.47	0.080	0.060	0.083	0.000	664.90	1416.07
0.000829	20.	20.	20.	2	0	0	0.00	256.93	1673.00

3490 NH CARD USED
#SECNO 418.290
3300 NAT Q1= 8417.92 WSEL= 687.16 ENC Q1= 8417.92 WSEL= 687.26 RATIO= 0.0000
NAT Q1= 8621. RATIOS LOB,CH,ROB= 0.2974 0.3514 0.3512 WSEL= 687.26

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= 1146.2 2136.2 TYPE= 4 TARGET= 0.024
CROSS SECTION D

418.29	22.27	687.27	0.00	687.16	687.31	0.04	0.19	0.14	676.30
10830.	3184.	3885.	3761.	2396.	1830.	2947.	3097.	454.	676.30
3.21	1.33	2.12	1.26	0.055	0.060	0.045	0.000	665.00	1146.21
0.000164	660.	610	620.	2	0	0	0.00	989.99	2136.20

CONV= 0.300 CEHV= 0.500
1490 NH CARD USED
*SECNO 418.330
2800 NAT Q1= 9487.82 WSEL= 687.17 ENC Q1= 8487.82 WSEL= 687.27 RATIO= 0.0000
NAT Q1= 5682. RATIOS LOB,CH,ROB= 0.2853 0.3632 0.3515 WSEL= 687.27

3470 ENCROACHMENT STATIONS= 1145.5 2154.5 TYPE= 4 TARGET= 0.022
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

418.33	22.09	687.28	0.00	687.17	687.32	0.04	0.01	0.00	681.50
10830.	3048.	4009.	3772	2340.	1937.	3026	3103	455.	681.40
3.21	1.30	2.07	1.25	0.055	0.060	0.045	0.000	665.20	1145.55
0.000161	40.	40.	40.	0	0	0	0.00	1008.97	2154.52

1490 NH CARD USED
*SECNO 418.340
2800 NAT Q1= 8083.46 WSEL= 687.17 ENC Q1= 8083.46 WSEL= 687.27 RATIO= 0.0000
NAT Q1= 8266. RATIOS LOB,CH,ROB= 0.2607 0.3815 0.3578 WSEL= 687.27

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 4 MIN ELTRD= 690.90 MAX ELLC= 689.40

3470 ENCROACHMENT STATIONS= 1144.9 2156.3 TYPE= 4 TARGET= 0.022
CROSS SECTION AT DOWNSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

418.34	22.08	687.28	0.00	687.17	687.33	0.05	0.00	0.00	681.50
10830.	2775.	4210.	3845.	2081.	1937.	2916.	3105.	455.	681.40
3.22	1.33	2.17	1.32	0.055	0.060	0.044	0.000	665.20	1144.86
0.000178	10.	10.	10.	0	0	0	0.00	989.00	2156.28

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	KV	AL	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

1490 NH CARD USED
*SECNO 418.350
2800 NAT Q1= 8081.52 WSEL= 687.17 ENC Q1= 8081.52 WSEL= 687.27 RATIO= 0.0000
NAT Q1= 8268. RATIOS LOB,CH,ROB= 0.2607 0.3814 0.3579 WSEL= 687.27

3265 DIVIDED FLOW

3670 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 689.40 MAX ELLC= 688.40

3470 ENCROACHMENT STATIONS= 1145.1 2155.7 TYPE= 4 TARGET= 0.023
CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

418.35	22.08	687.26	0.00	687.17	687.33	0.05	0.00	0.00	681 50
10830.	2775.	4212.	3843.	2079.	1937.	2912.	3106.	455.	681.40
3.22	1.33	2.17	1.32	0.055	0.060	0.044	0.000	665.20	1145.09
C 000178	6.	6.	6.	0	0	0	0 00	988.16	2155.68

1490 NH CARD USED
*SECNO 418.360
2800 NAT Q1= 8491.00 WSEL= 687.18 ENC Q1= 8491.00 WSEL= 687.28 RATIO= 0.0000
NAT Q1= 8697. RATIOS LOB,CH,ROB= 0.2854 0.3628 0.3518 WSEL= 687.28

3470 ENCROACHMENT STATIONS= 1146.3 2152.6 TYPE= 4 TARGET= 0.024
CROSS SECTION UPSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

418.36	22.09	687.29	0.00	697.18	687.33	0.04	0.00	0.00	681.50
10830.	3051.	4015.	3764.	2336.	1937.	3017.	3108.	456.	681.40
3.22	1.31	2.07	1.25	0.055	0.060	0.045	0.000	665.20	1146.26
0.000162	10.	10.	10.	0	0	0	0.00	1006.37	2152.62

1490 NH CARD USED
*SECNO 418.400
2800 NAT Q1= 8514.82 WSEL= 687.19 ENC Q1= 8514.82 WSEL= 687.29 RATIO= 0.0000
NAT Q1= 8710. RATIOS LOB,CH,ROB= 0.2854 0.3625 0.3521 WSEL= 687.29

3470 ENCROACHMENT STATIONS= 1145.5 2154.5 TYPE= 4 TARGET= 0.022
CROSS SECTION 04

418.40	22.10	687.30	0.00	687.19	687.34	0.04	0.01	0.00	681.50
10830.	3049.	4001.	3780.	2345.	1939.	3036	3114.	457.	681.40
3.23	1 30	2.06	1.25	0.055	0.060	0 045	0.000	665.20	1145.52
0.000160	40.	40.	40.	0	0	0	0.00	1008.95	2154.48

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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    ITRIAL   IDC      ICONT    CORAR    TOPWID   ENDST

CCHV=   0.100 CEHV=   0.300
1490 NH CARD USED
*SECNO 418.990
 2800 NAT Q1=   9021.36  WSEL=    687.28  ENC Q1=   9021 36  WSEL=    687.38  RATIO=  0.0000
 NAT Q1=   9174.  RATIOS LOB,CH,ROB=  0.4052  0.4138  0.1810  WSEL=    687.38

3470 ENCROACHMENT STATIONS=    1876 7    2791.1  TYPE=     4  TARGET=       0.017
          CROSS SECTION P
   418.99    26.09   687.39     0.00   687.28   687.43     0.04     0.09     0.00   676.30
   10830.    4367.    4550.    1914.    5187.    2123.    1426.    3225.     470.   676.30
     3.34     0.84     2.14     1.34    0.096    0.060    0.043    0.000   661.30  1876.71
 0 000143     600.     595.     600.        0        0        0     0 00   914.41  2791 12

1490 NH CARD USED
 SECNO 419.940

3470 ENCROACHMENT STATIONS=     400.0    1450.0  TYPE=     1  TARGET=    1050.000
          CROSS SECTION Q
   419.94    20.99   687.49     0.00   687.39   687.52     0.02     0.09     0.00   676.40
   10830.    1485.    2235.    7111.    1645.    1443.    6167.    3387.     487.   676.40
     3.52     0.90     1.55     1.15    0 050    0.060    0.054    0.000   666.50   400.00
 0.000089     850.     950.     650.        1        0        0     0.00  1050.00  1450.00

CCHV=   0.400 CEHV=   0.700
1490 NH CARD USED
*SECNO 421.910
 2800 NAT Q1=  13199.78  WSEL=    687.49  ENC Q1=  13199.78  WSEL=    687.59  RATIO=  0.0000
 NAT Q1=  15106.  RATIOS LOB,CH,ROB=  0.8321  0 1648  0.0032  WSEL=    687.59

3470 ENCROACHMENT STATIONS=     573.9    2203.6  TYPE=     4  TARGET=       0.126
          CROSS SECTION S
   421.91    22.01   687.61     0.00   687.49   687.62     0.01     0.09     0.01   676.30
   10830.    8918.    1912.       0.   12945.    1516.       0.    3655.     514.   676.30
     3.94     0.69     1.26     0.00    0.074    0.060    0.000    0.000   665.60   573.92
 0.000069     400.    1970.    1900.        1        0        0     0.00  1629.68  2203.60

1490 NH CARD USED
*SECNO 423.110
 2800 NAT Q1=  11701.01  WSEL=    687.56  ENC Q1=  11701.01  WSEL=    687.66  RATIO=  0 0000
 NAT Q1=  13358.  RATIOS LOB,CH,ROB=  0.7257  0.2623  0.0120  WSEL=    687.66
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	KV	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= 612.2 1990.8 TYPE= 4 TARGET= 0.124

CROSS SECTION T

423.11	25.47	687.67	0.00	687.56	687.69	0.02	0.07	0.01	676.30
10830.	7731.	3099.	0.	2413.	2091.	0.	3901	543.	676.30
4.17	0.92	1.46	0.00	0.054	0.060	0.000	0.000	662.20	612.16
0.000088	800.	1200.	1300.	0	0	0	0.00	1378.64	1990.80

1490 NH CARD USED
*SECNO 424.360

3470 ENCROACHMENT STATIONS= 825.0 1975.0 TYPE= 1 TARGET= 1150.000

CROSS SECTION U

"N" VALUE SET VERY HIGH (1.00) TO ELIMINATE CONVEYANCE IN ROB

424.36	20.91	687.91	0.00	687.69	687.85	0.04	0 15	0.01	676.30
10830.	837.	3943.	6050.	1049.	1685.	6612.	4159.	574.	676.30
4.40	0.80	2.34	0.91	0.065	0.060	0.096	0.000	666.90	825.00
0.000200	900.	1250.	1400.	2	0	0	0.00	1150.00	1975.00

CCHV= 0.200 CEHV= 0.400
1490 NH CARD USED
*SECNO 425.460
2800 NAT Q1= 7245.81 WSEL= 687.86 ENC Q1= 7245.81 WSEL= 687.96 RATIO= 0.0000
NAT Q1= 7363. RATIOS LOB,CH,ROB= 0.4250 0.3810 0.1940 WSEL= 687.96

3470 ENCROACHMENT STATIONS= 1160.8 3076.5 TYPE= 4 TARGET= 0.016

CROSS SECTION V

"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

425.46	20.80	688.00	0.00	687.86	688.05	0.05	0.19	0.01	676.30
10830.	4597.	4167.	2065.	2946.	1694.	9292.	4353.	598.	676.30
4.55	1.56	2.46	0.22	0.064	0.060	0.337	0.000	667.20	1160.85
0.000219	1300.	1100.	500.	1	0	0	0.00	1915.61	3076.45

1490 NH CARD USED
*SECNO 427.260
2800 NAT Q1= 4499.40 WSEL= 688.25 ENC Q1= 4499.40 WSEL= 688.35 RATIO= 0.0000
NAT Q1= 4580. RATIOS LOB,CH,ROB= 0.0034 0.5158 0.4808 WSEL= 688.35
2820 CROSS SECTION 427.26 EXTENDED 1.70 FEET

SECNO	DEPTH	CHSEL	CRIWS	ASELC	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= 1647.5 4210.4 TYPE= 4 TARGET= 0.018
CROSS SECTION X
"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

427.26	22.90	688.40	0.00	688.25	688.52	0.12	0.44	0.03	676.30
10830.	0.	5407.	5423.	0.	1404.	15057.	4537.	618.	676.30
4.72	0.00	3.85	0.36	0.000	0.060	0.336	0.000	665.50	1447.50
0.000628	1900.	1800.	200.	2	0	0	0.00	2762.94	4210.44

1490 NH CARD USED
RSECNO 429.590
2800 NAT Q1= 20582.46 WSEL= 688.53 ENC Q1= 20582.46 WSEL= 688.63 RATIO= 0.0000
NAT Q1= 21011. RATIOS LOB,CH,ROB= 0.8690 0.1106 0.0204 WSEL= 688.63
3280 CROSS SECTION 429.59 EXTENDED 0.66 FEET

3470 ENCROACHMENT STATIONS= 531.7 2670.0 TYPE= 4 TARGET= 0.020
CROSS SECTION Z

429.59	17.96	688.66	0.00	688.53	688.67	0.01	0.13	0.02	676.30
10830.	9498.	1220.	112.	15541.	1450.	262.	5182.	716.	676.30
5.46	0.61	0.84	0.43	0.051	0.060	0.070	0.000	670.70	531.70
0.000027	900.	2330.	2320.	2	0	0	0.00	2138.28	2669.98

1490 NH CARD USED
RSECNO 430.810
2800 NAT Q1= 13426.93 WSEL= 688.54 ENC Q1= 13426.93 WSEL= 688.64 RATIO= 0.0000
NAT Q1= 13820. RATIOS LOB,CH,ROB= 0.7913 0.1862 0.0224 WSEL= 688.64
3280 CROSS SECTION 430.81 EXTENDED 0.67 FEET

3470 ENCROACHMENT STATIONS= 421.5 2550.8 TYPE= 4 TARGET= 0.028
CROSS SECTION AA

430.81	20.17	688.67	0.00	688.54	688.68	0.01	0.01	0.00	676.30
10830.	8668.	2071.	91.	15937.	1554.	149.	5284.	726.	676.30
5.59	0.54	1.33	0.61	0.090	0.060	0.070	0.000	668.50	421.49
0.000064	150.	1220.	1300.	2	0	0	0.00	2129.34	2550.83

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: BLISSFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

THIS RUN EXECUTED 29 NOV 85 11:26:53

HECQ RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56

C
T1 VILLAGE OF BLISSFIELD MI FIS
T2 10-YEAR FLOOD
T3 RIVER RAISIN, BLISSFIELD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	2.	0.	0	0.000222	0.00	-1.0	0	0.000	0.000

J2	NPROF	IPLOT	PREVS	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 VARIABLE CODES FOR SUMMARY PRINTOUT

	150.000	201.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.080	0.080	0.060	0.100	0.300	0.000	0.000	0.000	0.000	0.000
QT	5.000	6770.000	9600.000	10830.000	13730.000	11800.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	449.800	0.100	513.400	0.060	605.800	0.080	944.400	0.050
NH	1833.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION BB									
X1	398.070	61.000	513.400	605.800	0.000	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1060.100	0.000	0.000	0.000	0.000
GR	683.700	279.000	683.100	320.100	683.100	320.100	683.100	320.100	682.300	353.500
GR	680.600	368.900	680.700	405.200	680.700	427.700	680.300	434.000	680.300	445.100
GR	681.200	449.800	680.100	461.700	677.000	477.500	673.300	485.800	671.000	497.600
GR	669.800	503.100	666.300	513.400	663.800	518.400	662.500	523.400	661.400	528.400
GR	660.800	533.400	659.600	538.400	659.500	543.400	659.800	548.400	660.200	553.400
GR	661.300	558.400	661.900	563.400	660.600	568.400	660.100	573.400	660.900	578.400
GR	661.500	583.400	662.000	587.400	662.000	593.400	663.600	598.400	666.300	605.800
GR	671.900	618.400	674.200	630.700	677.600	639.000	677.200	669.800	676.300	703.700
GR	674.800	745.500	674.300	783.400	673.400	849.700	673.400	894.300	672.400	944.400
GR	672.300	979.900	672.300	1011.100	673.200	1032.800	675.800	1047.400	680.200	1060.100
GR	679.500	1105.900	679.100	1178.000	679.100	1291.300	679.400	1405.700	680.600	1491.700
GR	680.600	1587.300	681.000	1673.300	680.300	1744.600	680.300	1797.100	680.200	1833.000
GR	688.000	1833.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	1463.400	0.080	1475.000	0.060	1541.500	0.080	1591.100	0.000
	CROSS SECTION CC									
X1	399.300	42.000	1475.000	1541.500	1250.000	1200.000	1230.000	0.000	0.000	0.000
GR	685.500	270.700	685.400	330.100	684.400	396.600	684.400	476.400	683.200	539.800
GR	680.600	590.800	679.100	630.800	677.900	666.400	676.000	709.400	676.000	756.000
GR	675.600	792.800	674.000	811.900	675.200	845.900	675.200	911.100	674.800	956.700
GR	673.900	1002.600	673.600	1081.000	673.700	1129.200	675.600	1162.500	676.700	1210.100

GR	677.200	1271.700	677.600	1325.100	677.000	1377.800	677.000	1423.600	676.300	1463.400
GR	664.500	1475.000	664.300	1490.000	661.800	1485.000	661.000	1490.000	660.500	1495.000
GR	660.300	1500.000	659.800	1505.300	659.900	1510.000	660.500	1515.000	660.900	1520.000
GR	661.000	1525.000	663.000	1530.000	665.100	1535.000	666.500	1541.500	676.100	1567.200
GR	688.600	1582.800	689.100	1591.100	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.400	0.700	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.050	1719.400	0.100	1775.800	0.040	1848.300	0.100	2000.100	0.045
NH	2193.000	0.070	2346.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION DD									
X1	400.500	60.000	1775.800	1848.300	1100.000	1250.000	1200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	2250.000	0.000	0.000	0.000	0.000
GR	684.300	408.600	684.300	496.300	684.400	590.100	683.400	630.200	682.000	687.800
GR	682.300	782.000	682.400	869.000	682.100	938.100	682.000	1007.200	682.000	1052.500
GR	680.100	1096.200	678.600	1149.900	678.600	1180.800	679.300	1235.500	679.200	1277.300
GR	678.300	1314.800	677.500	1348.700	677.100	1384.500	679.300	1416.000	679.500	1475.000
GR	679.700	1540.700	679.500	1588.300	680.100	1624.600	680.200	1671.000	680.400	1719.600
GR	680.400	1754.000	666.700	1775.800	665.100	1780.800	663.900	1785.900	663.500	1790.800
GR	663.200	1795.800	662.700	1800.800	662.600	1805.800	662.400	1810.800	662.500	1815.800
GR	663.100	1820.800	663.900	1825.800	664.700	1830.800	664.700	1835.900	664.900	1840.800
GR	666.700	1848.300	674.200	1863.700	676.400	1902.600	680.000	1922.900	679.200	1949.500
GR	678.200	2002.100	677.200	2078.100	675.800	2141.100	674.700	2182.000	674.000	2229.700
GR	673.600	2277.400	673.700	2285.500	679.500	2298.700	683.400	2310.700	686.300	2323.600
GR	687.000	2331.400	687.200	2346.500	687.200	2346.500	687.200	2346.500	689.100	2344.500
NH	5.000	0.050	2110.000	0.100	2140.000	0.040	2212.500	0.100	2242.000	0.050
NH	2472.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION EE									
X1	401.200	30.000	2140.000	2212.500	700.000	700.000	700.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	700.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	686.000	0.000	684.000	650.000	680.000	1210.000	679.000	1250.000	680.000	1290.000
GR	681.000	1350.000	680.000	1420.000	679.000	1470.000	680.000	1525.000	680.500	1450.000
GR	680.000	1770.000	680.000	2110.000	666.700	2140.000	665.100	2145.000	663.900	2150.000
GR	663.500	2155.000	663.200	2160.000	662.700	2165.000	662.600	2170.000	662.400	2175.000
GR	662.500	2180.000	663.100	2185.000	663.900	2190.000	664.700	2195.000	664.700	2200.000
GR	664.900	2205.000	666.700	2212.500	680.000	2242.000	688.000	2272.000	688.000	2472.000
NH	7.000	0.050	1658.600	0.080	1742.000	0.060	1871.000	0.080	1939.400	0.050
NH	2681.700	0.070	2764.200	0.035	3392.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION A									
X1	402.050	94.000	1742.000	1871.000	700.000	900.000	850.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	400.000	0.000	2450.000	0.000	0.000	0.000	0.000
GR	694.900	290.700	685.000	290.700	685.000	291.100	685.000	291.100	684.600	344.400
GR	684.200	391.900	683.900	411.400	684.500	469.300	684.800	551.900	684.100	604.000
GR	683.200	642.000	682.700	687.000	683.700	749.800	682.900	817.400	683.200	873.900
GR	683.100	920.100	683.100	943.800	681.900	985.800	681.000	1056.300	681.200	1115.900
GR	688.000	1183.000	682.500	1247.300	680.700	1311.500	679.600	1358.900	679.500	1420.400
GR	679.500	1459.300	679.700	1507.900	679.400	1549.200	678.800	1593.700	678.900	1625.300
GR	679.100	1658.600	679.500	1684.700	680.300	1702.000	680.300	1723.100	666.900	1742.000
GR	665.900	1747.000	665.400	1752.000	664.400	1757.000	663.700	1762.000	664.900	1767.000
GR	665.700	1772.000	664.900	1777.000	665.500	1782.000	665.700	1787.000	665.900	1792.000
GR	665.400	1797.000	665.000	1802.000	664.700	1807.000	664.300	1812.000	664.200	1817.000
GR	664.100	1822.000	663.700	1827.000	663.500	1832.000	663.400	1837.000	663.200	1842.000
GR	662.500	1847.000	662.700	1852.000	662.900	1857.000	664.400	1862.000	665.700	1867.000

GR	666.900	1371.000	677.000	1882.300	679.300	1908.600	678.100	1939.400	677.400	1980.500
GR	676.400	2040.000	674.300	2087.800	674.300	2142.400	674.400	2245.000	668.200	2475.900
GR	671.600	2504.000	674.200	2548.500	676.100	2585.000	675.800	2635.400	675.000	2681.700
GR	672.600	2750.900	671.100	2764.200	670.600	2789.600	670.900	2815.100	673.100	2831.300
GR	680.000	2882.600	682.900	2865.700	684.000	2895.200	682.200	2909.200	683.100	2919.100
GR	683.100	2950.900	681.600	2974.200	682.200	3020.000	682.700	3072.400	683.600	3137.900
GR	684.300	3192.000	685.700	3236.400	687.500	3287.300	689.100	3392.000	0.000	0.000
NH	5.000	0.050	815.300	0.080	956.100	0.060	1026.200	0.100	1048.000	0.050
NH	2460.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION B										
X1	403.750	58.000	956.100	1024.200	1100.000	1800.000	1700.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	525.000	0.000	2150.000	0.000	0.000	0.000	0.000
GR	690.000	232.400	688.700	232.800	694.900	232.800	696.800	314.800	684.900	314.800
GR	684.800	314.800	684.800	314.800	684.300	329.400	683.800	372.500	684.300	420.500
GR	684.900	459.600	684.300	524.300	684.100	567.300	684.100	613.600	684.100	657.900
GR	683.900	713.000	682.900	744.100	679.600	760.100	676.800	779.700	675.900	794.900
GR	675.900	815.300	675.700	927.400	673.600	939.800	667.100	955.700	667.100	956.100
GR	667.100	956.100	665.500	961.100	664.800	966.100	665.200	971.100	664.300	976.100
GR	663.400	981.100	662.900	986.100	663.300	991.100	662.400	996.100	662.400	1001.100
GR	662.100	1006.100	662.200	1011.100	662.700	1016.100	663.700	1021.100	667.100	1026.200
GR	679.700	1048.000	678.700	1065.000	678.300	1110.600	677.700	1150.700	676.600	1188.700
GR	675.600	1216.300	675.600	1226.400	674.400	1250.500	676.200	1271.800	677.500	1311.800
GR	679.600	1362.700	679.200	1492.600	678.000	1780.000	679.600	2150.000	680.000	2275.000
GR	684.000	2320.000	684.600	2425.000	688.000	2660.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.050	610.800	0.040	1041.300	0.050	1370.600	0.080	1477.000	0.060
NH	1541.000	0.100	1642.500	0.050	3650.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION C										
X1	404.850	75.000	1477.000	1541.000	1150.000	1000.000	1100.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	3250.000	0.000	0.000	0.000	0.000
GR	687.200	0.000	686.400	0.600	686.400	68.900	687.200	115.500	687.300	156.000
GR	684.400	210.300	694.900	246.500	687.000	291.700	694.500	345.100	686.600	401.200
GR	686.200	448.500	686.700	490.600	686.500	537.700	685.300	573.700	684.900	610.800
GR	687.000	1041.300	686.000	1108.600	685.900	1147.000	694.600	1184.400	686.900	1230.600
GR	686.800	1276.600	686.800	1323.800	686.600	1370.600	686.600	1413.400	687.400	1421.400
GR	687.100	1428.900	687.100	1429.300	687.100	1429.300	686.700	1442.900	687.100	1444.300
GR	667.200	1477.000	663.500	1482.000	662.600	1487.000	662.600	1492.000	662.600	1497.000
GR	662.600	1502.000	662.400	1507.000	662.400	1512.000	662.600	1517.000	662.900	1522.000
GR	663.300	1527.000	664.700	1532.000	667.200	1541.000	681.200	1599.100	680.400	1625.200
GR	679.900	1642.500	678.300	1679.100	677.400	1705.500	677.400	1734.400	675.300	1765.300
GR	675.500	1788.200	675.300	1821.200	675.900	1850.300	677.100	1875.600	678.300	1900.000
GR	679.000	1929.300	679.000	1938.400	679.200	1982.700	679.800	2031.900	679.400	2091.000
GR	679.200	2171.000	679.400	2237.000	677.900	2290.900	675.800	2324.600	675.200	2360.500
GR	675.400	2387.300	676.000	2400.000	680.000	2525.000	680.500	2450.000	680.000	2955.000
GR	679.600	3150.000	680.000	3275.000	684.000	3315.000	684.400	3460.000	688.000	3650.000
NH	4.000	0.050	1278.700	0.090	1385.600	0.060	1466.800	0.100	2137.400	0.000

CROSS SECTION D

X1	404.450	57.000	1385.600	1445.800	1480.000	1450.900	1500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1975.000	0.000	0.000	0.000	0.000
GR	686.200	666.300	684.000	479.400	681.100	496.200	479.400	532.600	673.400	573.000
GR	677.600	668.700	677.600	730.700	679.100	779.800	678.200	851.400	677.000	907.000
GR	678.900	948.600	681.100	990.600	680.600	1071.200	680.600	1131.600	680.000	1184.800
GR	679.200	1242.400	679.200	1278.700	680.000	1293.400	680.200	1309.900	678.100	1318.900
GR	678.400	1338.900	672.100	1372.100	667.400	1385.600	665.900	1390.600	664.300	1395.600
GR	662.100	1400.600	659.900	1405.600	657.900	1410.600	656.900	1415.600	656.400	1420.600
GR	655.800	1425.600	655.400	1430.600	655.200	1435.600	655.400	1440.600	655.600	1445.600
GR	656.800	1450.600	659.600	1455.600	663.900	1460.600	667.400	1466.800	683.400	1483.600
GR	681.900	1505.700	681.700	1519.500	680.300	1553.700	681.300	1596.500	681.300	1687.700
GR	681.200	1779.500	680.500	1942.700	680.900	1886.900	683.300	1907.800	684.400	1930.700
GR	685.000	1991.600	684.900	2039.000	684.400	2071.400	684.400	2071.700	685.000	2113.700
GR	685.500	2137.000	694.200	2137.400	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.300	0.500	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	112.700	0.070	150.800	0.060	225.300	0.100	264.900	0.050
NH	1940.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION E

X1	407.770	37.000	152.800	225.300	1200.000	1400.000	1320.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	900.000	0.000	0.000	0.000	0.000
GR	687.600	0.000	686.500	33.400	685.100	61.400	683.400	83.300	682.400	112.700
GR	676.300	135.000	667.500	152.800	665.800	157.800	664.400	162.800	664.300	167.800
GR	664.000	172.800	663.600	177.800	663.600	182.800	663.600	187.800	663.600	192.800
GR	663.400	197.800	663.400	202.800	664.600	207.800	665.400	212.800	664.300	217.800
GR	667.500	225.300	680.000	264.900	678.500	296.000	678.500	422.100	677.700	525.500
GR	677.400	648.200	677.500	721.800	679.100	792.000	681.100	850.600	683.800	912.100
GR	682.900	1005.100	684.700	1143.000	685.100	1220.400	684.800	1269.000	684.000	1420.000
GR	684.000	1500.000	688.000	1940.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.100	58.000	0.040	123.000	0.100	239.900	0.050	2600.000	0.000

CROSS SECTION F

X1	409.700	45.000	58.000	123.000	950.000	750.000	930.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	1100.000	0.000	0.000	0.000	0.000
GR	687.800	0.000	687.800	0.000	686.900	22.600	686.400	36.700	667.800	58.000
GR	664.300	63.000	663.300	68.000	662.800	73.000	662.600	78.000	662.500	83.000
GR	663.100	88.000	664.400	93.000	665.300	98.000	667.000	103.000	667.200	108.000
GR	667.800	113.000	667.200	118.000	667.800	123.000	667.800	123.000	675.800	140.500
GR	690.600	161.000	679.900	193.800	679.000	206.500	679.200	239.900	679.900	352.400
GR	678.800	415.300	677.800	500.100	677.300	594.800	677.700	699.600	678.200	782.200
GR	678.800	859.800	679.100	946.100	679.200	1038.500	678.800	1114.100	678.200	1179.700
GR	678.300	1211.400	681.400	1246.900	683.100	1285.400	684.800	1303.900	685.200	1490.200
GR	685.200	1582.300	685.300	1592.900	684.000	1935.000	684.500	2250.000	688.000	2600.000
NH	4.000	0.100	27.100	0.040	116.900	0.100	209.300	0.050	3200.000	0.000

CROSS SECTION G

X1	410.070	46.000	27.100	116.900	1440.000	1050.000	1370.000	0.000	0.000	0.000
XC	0.000	0.000	0.000	0.000	0.000	1550.000	0.000	0.000	0.000	0.000
GR	689.000	0.000	677.700	17.500	669.000	27.100	666.500	32.100	665.500	37.100
GR	665.200	42.100	665.100	47.100	665.000	52.100	665.000	57.100	665.000	62.100
GR	664.800	67.100	664.800	72.100	664.700	77.100	664.700	82.100	665.400	87.100
GR	666.400	92.100	666.800	97.100	667.200	102.100	667.500	107.100	668.000	116.900
GR	679.000	147.900	679.100	209.300	679.100	328.200	679.800	444.700	680.400	554.800

GR	680.600	653.000	685.400	701.400	679.000	790.100	678.400	894.600	678.400	998.500
GR	679.300	1053.400	678.600	1105.800	678.600	1140.200	678.500	1211.000	677.800	1248.400
GR	677.000	1305.100	678.400	1373.000	679.500	1381.700	679.400	1427.000	679.400	1473.300
GR	679.400	1621.200	680.000	1693.200	686.000	1860.000	685.000	2290.000	686.000	2930.000
GR	689.000	3200.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	1123.700	0.090	1139.600	0.060	1231.100	0.100	1360.300	0.050
NH	4412.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION H									
X1	411.350	77.000	1139.600	1261.100	1450.000	950.000	1280.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1000.000	0.000	3150.000	0.000	0.000	0.000	0.000
GR	688.400	0.000	684.700	14.800	685.500	50.300	685.200	99.600	685.200	100.000
GR	685.200	100.000	685.200	158.800	684.200	217.100	685.000	253.100	685.200	278.000
GR	684.800	358.900	684.000	420.900	682.500	457.300	682.500	495.900	683.300	522.500
GR	684.800	551.600	686.700	568.500	687.000	592.000	686.600	654.700	686.600	735.600
GR	686.300	790.500	687.000	828.700	687.000	829.300	686.800	868.300	686.800	921.700
GR	683.700	1123.700	668.400	1139.600	665.700	1144.600	664.000	1149.600	662.900	1154.600
GR	662.800	1159.600	662.500	1164.600	662.500	1169.600	662.800	1174.600	663.300	1179.600
GR	663.800	1184.600	664.300	1189.600	664.600	1194.600	665.200	1199.600	665.400	1204.600
GR	666.300	1209.600	667.500	1214.600	667.700	1219.600	667.800	1224.600	668.400	1231.100
GR	679.900	1255.200	679.900	1277.600	677.200	1295.100	678.700	1360.300	679.400	1423.800
GR	679.500	1487.500	680.300	1600.000	680.300	1753.800	681.400	1854.000	681.000	1938.100
GR	681.600	2044.700	660.900	2126.800	680.100	2198.100	680.100	2251.200	679.300	2297.800
GR	679.300	2322.400	677.700	2389.100	677.700	2420.500	677.900	2459.500	677.900	2505.800
GR	677.800	2551.300	677.900	2581.800	677.200	2605.300	679.100	2628.000	679.800	2662.800
GR	680.300	2701.400	679.700	2724.700	680.000	2755.000	684.000	2940.000	685.000	3450.000
GR	686.000	4000.000	688.000	4410.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	1823.500	0.080	1867.400	0.060	1938.800	0.070	1961.200	0.050
NH	3302.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION I									
X1	412.950	90.000	1967.400	1938.800	1200.000	1350.000	1400.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	900.000	0.000	1990.000	0.000	0.000	0.000	0.000
GR	688.400	0.000	688.300	0.000	688.200	29.300	688.200	29.300	688.200	29.700
GR	708.800	29.700	708.800	68.800	688.600	69.300	688.700	69.300	688.700	69.300
GR	688.900	107.200	687.800	148.900	686.100	189.000	684.200	244.400	683.000	279.000
GR	682.500	333.100	681.900	399.000	681.800	442.000	681.800	542.500	681.300	662.900
GR	680.200	751.300	679.400	793.700	680.000	867.700	678.900	923.500	677.900	942.100
GR	679.000	978.500	679.500	1027.600	679.300	1086.500	678.300	1129.300	679.000	1179.200
GR	678.800	1239.700	678.900	1281.500	679.200	1342.800	679.200	1391.200	679.200	1453.800
GR	679.700	1519.200	680.100	1567.200	679.500	1611.300	680.600	1666.400	680.200	1714.100
GR	680.100	1740.800	680.000	1782.200	679.700	1814.900	680.400	1823.500	680.600	1823.500
GR	668.300	1867.400	667.200	1872.400	666.200	1877.400	665.700	1882.400	665.100	1887.400
GR	665.300	1892.400	664.900	1897.400	664.700	1902.400	664.700	1907.400	664.900	1912.400
GR	665.200	1917.400	665.400	1922.400	665.700	1927.400	668.300	1938.800	684.400	1961.200
GR	685.600	1990.900	685.600	1998.000	685.600	1998.800	685.700	2030.900	685.700	2032.500
GR	685.700	2049.300	686.000	2096.900	686.000	2097.500	688.800	2098.300	688.800	2148.100
GR	687.900	2148.600	687.900	2149.600	687.900	2149.600	685.100	2160.400	685.400	2234.800
GR	685.000	2290.200	685.500	2378.200	685.900	2438.200	686.300	2501.900	686.100	2563.700
GR	685.700	2632.900	685.600	2722.300	685.600	2820.900	686.300	2932.200	686.100	3010.600
GR	686.500	3110.000	686.100	3199.300	686.500	3273.300	689.000	3302.000	689.000	3302.000

ER	4.000	0.050	1410.000	0.080	1588.000	0.040	1688.400	0.080	1819.300	0.000
	CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM									
X1	413.910	28.000	1588.000	1689.600	850.000	900.000	960.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	689.400	0.000	680.400	0.000	680.000	170.000	680.500	280.000	680.000	415.000
GR	676.700	520.000	680.000	680.000	680.000	1080.000	677.000	1410.000	674.500	1500.000
GR	674.300	1580.000	668.300	1588.000	667.200	1593.000	666.300	1598.000	665.700	1603.000
GR	665.100	1608.000	665.300	1613.000	664.900	1618.000	664.700	1623.000	664.700	1658.000
GR	664.900	1663.000	665.200	1668.000	665.400	1673.000	665.700	1678.000	668.000	1688.400
GR	680.000	1699.000	684.000	1719.000	688.000	1819.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	1080.000	0.080	1580.000	0.060	1710.000	0.080	3320.000	0.000
	CROSS SECTION AT BLISSFIELD DAM									
X1	413.960	17.000	1560.000	1710.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	689.400	0.000	680.400	0.000	680.000	170.000	680.500	280.000	680.000	415.000
GR	676.700	520.000	680.000	680.000	680.000	1080.000	677.000	1410.000	674.500	1500.000
GR	676.300	1580.000	676.300	1710.000	680.000	1720.000	684.000	1740.000	688.000	1840.000
GR	689.500	2340.000	688.000	2320.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	2393.300	0.100	2461.200	0.060	2555.900	0.100	2570.100	0.000
	CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELD DAM									
X1	414.010	59.000	2461.200	2555.900	50.000	50.000	50.000	0.000	0.500	0.000
X3	0.000	0.000	0.000	1300.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	683.400	650.000	688.200	679.300	688.200	679.700	683.400	719.300	688.900	757.200
GR	687.800	788.900	686.100	839.000	684.200	894.400	683.000	929.000	682.500	983.100
GR	680.400	1000.000	680.400	1000.000	679.300	1028.800	678.000	1058.300	677.400	1075.000
GR	677.400	1075.000	678.800	1094.900	679.100	1179.000	679.800	1278.200	680.300	1348.100
GR	679.000	1404.500	679.300	1488.400	679.800	1562.400	680.100	1624.000	679.700	1722.100
GR	680.300	1798.200	680.500	1909.900	680.500	1958.400	679.000	1985.800	679.000	2049.800
GR	679.500	2142.500	679.800	2196.200	680.600	2220.600	680.200	2292.400	679.600	2352.100
GR	678.800	2393.300	680.100	2409.400	680.000	2426.400	676.300	2461.200	675.100	2466.200
GR	673.000	2471.200	670.900	2476.200	669.400	2481.200	667.500	2486.200	666.900	2491.200
GR	666.400	2496.200	665.600	2501.200	666.100	2506.200	667.000	2511.200	668.100	2516.200
GR	668.600	2521.200	669.200	2526.200	669.900	2531.200	670.900	2536.200	672.400	2541.200
GR	673.300	2546.200	675.100	2551.200	676.300	2555.900	686.800	2570.100	0.000	0.000
NH	4.000	0.050	2393.300	0.100	2461.200	0.060	2555.900	0.100	2570.100	0.000
	CROSS SECTION J									
X1	414.600	54.000	2461.200	2555.900	450.000	650.000	590.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1200.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	688.000	150.000	688.000	330.000	684.000	455.000	681.300	750.000	680.000	960.000
GR	680.400	1000.000	680.400	1000.000	679.300	1028.800	678.000	1058.300	677.400	1075.000
GR	677.400	1075.000	678.800	1094.900	679.100	1179.000	679.800	1278.200	680.300	1348.100
GR	679.000	1404.500	679.300	1488.400	679.800	1562.400	680.100	1624.000	679.700	1722.100
GR	680.300	1798.200	680.500	1909.900	680.500	1958.400	679.000	1985.800	679.000	2049.800
GR	679.500	2142.500	679.800	2186.200	680.600	2220.600	680.200	2292.400	679.600	2352.100
GR	679.800	2393.300	680.100	2409.400	680.900	2426.400	676.300	2461.200	675.100	2466.200
GR	673.000	2471.200	670.800	2476.200	669.400	2481.200	667.500	2486.200	666.900	2491.200
GR	666.400	2496.200	665.600	2501.200	666.100	2506.200	667.000	2511.200	668.100	2516.200
GR	668.600	2521.200	669.200	2526.200	669.900	2531.200	670.900	2536.200	672.400	2541.200
GR	673.300	2546.200	675.100	2551.200	676.300	2555.900	686.800	2570.100	0.000	0.000

NH	0.000	0.000	2128.500	0.080	2230.000	0.060	2338.900	0.070	2369.000	0.000
	CROSS SECTION K									
X1	415.490	64.000	0230.500	2283.500	850.000	1100.000	1020.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1350.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	688.000	960.000	688.400	440.000	688.000	520.000	684.000	710.000	682.000	850.000
GR	681.500	1000.000	681.400	1000.400	682.400	1048.500	682.200	1066.800	681.500	1073.000
GR	680.000	1090.400	682.300	1116.100	681.200	1152.500	681.400	1185.900	680.800	1203.800
GR	680.500	1229.800	680.500	1270.100	680.500	1302.200	679.300	1328.100	678.800	1351.900
GR	679.600	1388.100	679.600	1419.300	679.600	1437.400	679.400	1465.500	679.400	1500.200
GR	680.100	1552.300	680.200	1596.800	679.700	1636.500	679.000	1667.900	677.700	1705.400
GR	677.200	1755.400	677.300	1807.600	677.400	1855.100	677.600	1905.200	678.100	1938.700
GR	678.500	1979.900	678.500	2016.200	679.200	2055.600	679.800	2095.900	679.900	2128.600
GR	680.300	2141.600	679.900	2188.000	678.900	2211.500	676.300	2220.000	674.300	2235.000
GR	672.200	2240.000	670.200	2245.000	668.700	2250.000	668.200	2255.000	667.500	2260.000
GR	667.300	2265.000	667.200	2270.000	669.500	2275.000	667.200	2280.000	667.200	2285.000
GR	667.100	2290.000	666.700	2295.000	665.900	2300.000	666.000	2305.000	666.600	2310.000
GR	667.600	2315.000	668.500	2320.000	670.900	2325.000	673.700	2330.000	676.300	2333.900
GR	691.200	2369.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	418.700	0.070	723.900	0.060	837.900	0.070	891.700	0.100
NH	985.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION L									
X1	416.650	50.000	723.800	837.800	600.000	1100.000	1030.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	450.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	681.300	0.000	681.300	0.000	682.000	44.900	682.000	46.100	692.600	47.700
GR	692.600	84.200	684.000	84.200	684.000	84.600	684.000	85.800	683.500	102.900
GR	682.500	119.100	682.500	143.300	682.600	171.900	682.600	171.900	682.500	207.600
GR	682.700	231.000	682.700	258.100	682.400	276.300	683.400	302.500	683.400	330.200
GR	683.600	354.800	683.700	375.100	682.500	418.700	682.800	442.600	682.300	453.300
GR	680.100	470.400	678.600	485.800	679.100	514.400	679.200	533.200	678.800	551.000
GR	678.800	580.700	678.500	609.700	678.000	631.200	678.900	655.900	679.800	685.100
GR	679.300	719.900	674.200	723.800	670.000	723.800	665.000	748.800	662.500	780.800
GR	665.000	812.800	670.000	827.800	676.200	837.800	686.700	858.000	687.100	891.700
GR	687.500	926.200	687.500	927.100	703.100	927.100	703.100	983.500	689.400	985.500
NH	4.000	0.100	1314.000	0.070	1406.000	0.060	1512.000	0.080	2101.200	0.000
	CROSS SECTION M									
X1	417.490	51.000	1406.000	1512.000	840.000	740.000	840.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1378.000	0.000	1558.800	0.000	0.000	0.000	0.000
GR	687.600	1314.000	687.300	1359.000	687.300	1388.000	676.300	1406.000	673.300	1411.000
GR	670.300	1415.000	667.700	1421.000	665.400	1426.000	664.600	1431.000	661.900	1436.000
GR	660.800	1441.000	660.400	1446.000	660.700	1451.000	661.700	1456.000	662.800	1461.000
GR	663.300	1466.000	664.300	1471.000	664.900	1476.000	665.600	1481.000	666.700	1486.000
GR	667.300	1491.000	668.500	1496.000	670.000	1501.000	671.300	1506.000	673.200	1511.000
GR	676.300	1512.000	685.000	1558.800	681.700	1579.300	680.500	1610.600	680.500	1627.500
GR	683.100	1636.600	682.300	1645.500	684.800	1657.100	684.900	1678.300	684.000	1693.800
GR	682.800	1712.900	683.600	1738.700	683.800	1778.100	686.100	1788.800	686.300	1819.500
GR	684.500	1901.700	684.100	1925.700	683.000	1943.900	681.000	1952.100	681.000	1981.500
GR	680.700	2002.100	681.700	2017.800	682.400	2044.200	682.500	2060.800	689.700	2079.200
GR	690.300	2101.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NC	0.070	0.070	0.033	0.300	0.500	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO RAILROAD BRIDGE									
X1	417.560	0.000	0.000	0.000	40.000	40.000	40.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1406.000	0.000	1558.800	0.000	0.000	0.000	0.000
	CROSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE									
X1	417.560	54.000	1434.500	1581.500	10.000	10.000	10.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	689.200	690.600	0.000	0.000	0.000	0.000	0.000
GB	696.300	0.000	696.000	0.400	690.100	0.400	690.500	54.100	690.900	124.300
GR	690.600	214.000	690.800	303.300	690.800	377.000	690.900	456.800	690.900	528.500
GB	690.900	599.000	690.900	698.200	691.200	765.500	691.400	847.400	691.400	847.400
GR	691.400	847.800	690.900	968.300	691.200	1095.800	691.300	1188.800	691.600	1263.500
GB	691.100	1326.100	691.100	1327.400	690.600	1422.900	690.600	1433.000	687.300	1433.000
GR	687.300	1434.500	677.200	1434.500	673.400	1450.000	672.200	1460.000	670.200	1470.000
GB	667.700	1490.000	667.900	1490.000	667.200	1500.000	667.600	1510.000	668.100	1520.000
GR	670.300	1530.000	670.700	1540.000	671.500	1550.000	672.700	1560.000	673.000	1570.000
GB	674.500	1581.500	687.300	1581.500	687.300	1583.000	690.600	1583.000	691.000	1648.400
GR	691.600	1731.500	691.700	1918.400	692.000	2004.000	691.800	2088.700	691.800	2159.600
GB	691.800	2232.800	692.200	2297.400	692.200	2339.200	696.200	2339.200	0.000	0.000
	CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE									
X1	417.560	0.000	0.000	0.000	20.000	20.000	20.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	689.200	690.600	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION BETWEEN RAILROAD BRIDGE AND US 223 BRIDGE									
X1	517.570	61.000	1420.500	1588.000	5.000	5.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1442.000	0.000	1588.000	0.000	0.000	0.000	0.000
GR	696.200	0.000	688.000	0.000	688.000	103.300	687.200	183.800	686.000	273.500
GB	685.400	359.400	685.400	422.700	685.400	500.100	685.000	585.200	685.000	670.700
GR	685.200	762.200	685.700	838.600	686.400	905.100	686.800	994.200	687.500	1082.100
GB	688.100	1147.600	688.900	1217.700	688.900	1293.400	689.100	1312.300	689.100	1345.300
GR	689.100	1376.100	689.400	1404.300	693.200	1420.500	686.000	1420.500	679.000	1442.000
GB	676.200	1450.000	673.900	1460.000	672.000	1470.000	671.300	1490.000	669.900	1490.000
GR	666.700	1500.000	667.400	1510.000	667.800	1520.000	668.500	1530.000	669.200	1540.000
GB	671.200	1550.000	671.700	1560.000	673.800	1570.000	676.200	1580.000	678.000	1588.000
GR	686.000	1609.000	693.700	1609.000	689.700	1676.600	688.900	1786.900	688.900	1890.700
GB	688.900	1980.800	689.700	2100.100	688.700	2216.700	693.900	2281.200	699.500	2350.800
GR	690.800	2430.800	692.000	2513.000	692.100	2589.200	692.600	2636.100	692.600	2721.100
GB	692.200	2768.300	691.200	2819.500	691.000	2894.500	690.400	2954.700	690.400	3009.300
GR	696.300	3008.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE									
X1	417.570	67.000	1442.000	1588.000	5.000	5.000	5.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1442.000	0.000	1588.000	0.000	0.000	0.000	0.000
GB	696.200	0.000	688.000	0.000	688.000	103.300	687.200	183.800	686.000	273.500
GR	685.400	359.400	685.400	422.700	685.400	500.100	685.000	585.200	685.000	670.700
GB	685.200	762.200	685.700	838.600	686.400	905.100	686.800	994.200	687.500	1082.100
GR	688.100	1147.600	688.900	1217.700	688.900	1293.400	689.100	1312.300	689.100	1345.300
GB	689.100	1376.100	689.400	1404.300	693.200	1420.500	686.000	1420.500	679.000	1442.000
GR	676.200	1450.000	673.900	1460.000	672.000	1470.000	671.300	1480.000	670.000	1469.000
GB	670.000	1489.000	669.500	1491.000	669.500	1491.000	666.700	1500.000	667.400	1510.000
GR	667.800	1520.000	668.500	1530.000	669.100	1539.000	669.100	1539.000	669.400	1541.000
GB	669.400	1561.000	671.300	1550.000	671.700	1560.000	673.600	1570.000	676.300	1580.000

GR	576.000	1783.000	685.000	1609.000	693.700	1605.500	689.700	1676.600	688.900	1785.900
GR	689.500	2050.800	690.800	2430.800	692.000	2513.000	692.100	2589.200	692.600	2636.100
GR	690.400	3003.300	696.300	3008.300	0.000	0.000	0.000	0.000	0.000	0.000
SI	1.050	1.710	2.800	199.000	73.000	5.000	2045.000	1.930	0.000	0.000

CROSS SECTION AT UPSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE

X1	417.620	0.000	0.000	0.000	55.000	55.000	55.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	1442.000	0.000	1589.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	1413.800	0.080	1440.600	0.060	1550.300	0.080	1649.400	0.100

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 223 BRIDGE

X1	417.660	68.000	1440.600	1550.300	35.000	35.000	35.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1413.800	0.000	1633.000	0.000	0.000	0.000	0.000
GR	669.100	1455.500	668.300	1460.500	667.400	1465.500	666.800	1470.500	666.300	1475.500
GR	664.900	1505.500	665.200	1510.500	665.700	1515.500	667.500	1520.500	668.000	1525.500
GR	682.000	1580.700	682.000	1649.400	682.000	1690.700	685.200	1701.300	685.800	1741.700
GR	688.500	1896.000	688.500	1896.400	688.500	1897.300	685.600	1910.000	686.200	1955.200
GR	687.700	2021.400	687.700	2022.000	689.500	2112.600	689.500	2113.000	689.500	2113.400
GR	687.200	2297.100	687.200	2301.600	687.200	2301.600	687.200	2301.600	688.900	2327.000
GR	691.600	2378.700	691.600	2378.700	691.900	2423.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.500	1.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.100	1413.800	0.080	1440.600	0.060	1550.300	0.080	1649.400	0.100
NH	2423.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION N

X1	417.680	0.000	0.000	0.000	20.000	20.000	20.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1413.800	0.000	1473.000	0.000	0.000	0.000	0.000
NC	0.080	0.080	0.060	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.100	1149.400	0.055	1462.100	0.060	1563.900	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION O

X1	418.290	63.000	1462.100	1563.900	660.000	420.000	410.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2200.000	0.000	0.000	0.000	0.000
GR	697.600	854.600	697.600	878.300	688.300	878.700	688.300	878.700	687.900	937.300
GR	687.400	967.900	687.400	968.300	686.500	991.000	686.300	1063.100	684.400	1125.900
GR	679.900	1149.400	678.800	1224.400	679.800	1286.800	680.000	1330.300	680.300	1405.800
GR	681.200	1440.400	681.200	1456.400	676.300	1462.100	673.600	1467.100	671.100	1472.100
GR	665.000	1502.100	665.200	1507.100	665.600	1512.100	666.300	1517.100	666.800	1522.100
GR	673.800	1552.100	673.900	1557.100	674.800	1562.100	676.300	1563.900	679.800	1577.700
GR	682.200	1604.900	682.900	1639.600	682.900	1639.600	682.900	1639.600	682.900	1727.900

GR	662.800	1837.500	681.900	1955.200	681.600	2057.200	681.100	2116.000	661.300	2153.000
GR	661.500	2163.900	681.300	2163.500	681.900	2163.900	683.500	2163.900	683.300	2195.200
GR	684.500	2195.200	684.500	2195.200	684.500	2195.200	686.200	2224.900	689.000	2253.900
GR	692.100	2274.600	695.200	2285.200	696.300	2302.700	0.000	0.000	0.000	0.000
NC	0.040	0.040	0.040	0.300	0.800	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE										
X1	418.330	45.000	1462.000	1566.000	40.000	40.000	40.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2200.000	0.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.900	937.300	687.400	967.900	687.400	968.300
GR	686.500	991.000	686.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.800	1286.800	680.000	1330.300	681.000	1405.000	681.500	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1484.000	665.700	1494.000
GR	665.200	1504.000	665.200	1514.000	665.500	1524.000	666.500	1534.000	668.000	1544.000
GR	671.900	1554.000	676.600	1564.000	681.400	1566.000	681.400	1579.600	681.400	1579.600
GR	680.900	1612.500	682.900	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.600	2057.200	681.100	2116.000	681.300	2153.000	681.900	2163.900	684.500	2195.200
GR	684.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION AT DOWNSTREAM FACE OF PEDESTRIAN BRIDGE. ELLIS PLAYGROUND										
X1	418.340	45.000	1462.000	1566.000	10.000	10.000	10.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2250.000	0.000	0.000	0.000	0.000
BT	-4.000	1405.000	682.700	682.700	1450.000	689.400	689.400	1579.600	689.400	688.400
BT	0.000	1612.500	680.900	680.900	0.000	0.000	0.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.800	937.300	687.400	967.900	687.400	968.300
GR	686.500	991.000	686.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.800	1286.800	680.000	1330.300	682.700	1405.000	689.400	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1494.000	665.700	1494.000
GR	665.200	1504.000	665.200	1514.000	665.500	1524.000	666.500	1534.000	668.000	1544.000
GR	671.900	1554.000	676.600	1564.000	681.400	1566.000	681.400	1579.600	689.400	1579.600
GR	680.900	1612.500	682.900	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.600	2057.200	681.100	2116.000	681.300	2153.000	681.900	2163.900	684.500	2195.200
GR	686.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE. ELLIS PLAYGROUND										
X1	418.350	0.000	0.000	0.000	6.000	6.000	6.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	688.400	689.400	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2250.000	0.000	0.000	0.000	0.000
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION UPSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE										
X1	418.360	65.000	1462.000	1566.000	10.000	10.000	10.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2250.000	0.000	0.000	0.000	0.000
GR	697.600	878.300	688.300	878.700	687.800	937.300	687.400	967.900	687.400	968.300
GR	686.500	991.000	686.300	1063.100	684.400	1125.900	679.900	1149.400	678.800	1226.400
GR	678.600	1286.800	680.000	1330.300	681.000	1405.000	681.500	1450.000	681.500	1450.000
GR	681.500	1462.000	676.600	1464.000	671.100	1474.000	666.700	1494.000	665.700	1494.000

GR	665.200	1504.000	665.500	1514.000	665.500	1524.000	666.800	1534.000	668.000	1546.000
GR	677.800	1554.000	674.400	1564.000	681.400	1566.000	681.400	1579.600	681.400	1579.600
GR	680.900	1618.500	682.500	1639.600	682.900	1727.900	682.800	1837.500	681.900	1955.200
GR	681.400	2057.300	681.100	2114.000	681.000	2153.000	681.500	2163.500	684.500	2195.200
GR	686.200	2224.900	689.000	2253.900	692.100	2274.600	695.200	2285.200	696.300	2302.700
NH	6.000	0.100	1149.400	0.055	1462.000	0.060	1566.000	0.090	1639.600	0.035
NH	2057.200	0.100	2302.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000
CROSS SECTION DA										
X1	419.400	0.000	0.000	0.000	40.000	40.000	40.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	2250.000	0.000	0.000	0.000	0.000
MC	0.000	0.000	0.000	0.100	0.300	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	1824.300	0.035	1943.100	0.100	2445.100	0.060	2548.300	0.090
NH	2580.500	0.035	2753.000	0.100	2928.300	0.000	0.000	0.000	0.000	0.000
CROSS SECTION B										
X1	418.990	67.000	2445.100	2548.300	600.000	600.000	595.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1700.000	0.000	2800.000	0.000	0.000	0.000	0.000
GR	689.100	1441.600	688.500	1466.000	687.900	1513.700	686.800	1576.300	686.800	1703.000
GR	685.800	1824.300	685.800	1878.600	684.000	1910.200	682.700	1943.100	680.600	1954.300
GR	676.300	1965.700	674.800	1976.500	674.100	1990.800	675.900	2008.100	676.000	2031.300
GR	678.300	2041.000	678.700	2060.100	679.500	2072.600	678.700	2090.300	678.500	2116.400
GR	677.900	2147.100	676.700	2170.900	676.500	2182.300	677.600	2202.300	677.900	2235.200
GR	677.300	2271.700	675.500	2288.600	675.500	2313.500	676.400	2342.300	677.800	2361.400
GR	677.600	2396.000	680.300	2418.600	680.300	2432.600	676.300	2445.100	676.300	2445.100
GR	674.400	2450.100	670.700	2455.100	668.900	2460.100	668.500	2465.100	666.800	2470.100
GR	665.700	2475.100	665.800	2480.100	663.300	2485.100	663.200	2490.100	661.700	2495.100
GR	661.400	2500.100	661.300	2505.100	662.000	2510.100	662.900	2515.100	663.900	2520.100
GR	665.400	2525.100	667.300	2530.100	669.500	2535.100	672.600	2540.100	676.300	2548.300
GR	683.900	2561.200	682.100	2580.500	681.500	2667.600	681.100	2753.000	681.100	2790.600
GR	682.200	2806.200	685.200	2821.500	687.000	2840.400	689.100	2879.900	689.900	2910.200
GR	690.500	2928.300	690.500	2928.300	0.000	0.000	0.000	0.000	0.000	0.000
NH	7.000	0.100	307.400	0.045	642.600	0.090	686.900	0.040	747.400	0.100
NH	830.900	0.050	1383.600	0.100	1648.100	0.000	0.000	0.000	0.000	0.000
CROSS SECTION 0										
X1	419.940	60.000	686.900	767.400	850.000	650.000	950.000	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	688.600	190.200	686.700	214.700	684.600	236.500	683.000	254.100	683.800	307.600
GR	683.400	350.000	683.100	394.300	682.500	446.100	682.200	494.900	681.800	534.500
GR	681.200	571.400	681.200	611.600	681.300	642.600	682.500	670.400	676.400	686.900
GR	673.800	691.900	672.200	696.900	670.400	701.900	668.900	706.900	667.900	711.900
GR	667.700	716.900	667.000	721.900	666.800	726.900	666.500	731.900	666.600	736.900
GR	666.900	741.900	668.000	749.900	669.700	751.900	671.700	756.900	673.600	761.900
GR	675.300	766.900	676.400	767.400	679.200	782.400	690.100	830.900	679.700	869.500
GR	678.900	898.100	679.500	921.300	679.400	951.500	679.400	968.400	679.500	968.500
GR	678.800	1013.900	678.100	1045.300	677.800	1098.800	677.200	1128.000	676.300	1156.200
GR	675.400	1184.900	675.900	1199.600	676.500	1238.200	677.500	1278.500	677.500	1307.700
GR	678.400	1356.300	680.100	1383.600	681.300	1421.800	682.400	1449.900	682.400	1478.200
GR	681.900	1508.500	682.700	1534.600	684.600	1567.900	686.600	1606.600	688.000	1648.100

NC	0.000	0.000	0.000	0.405	0.700	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.050	1294.100	0.120	2119.300	0.060	2203.600	0.090	2247.000	0.100
NH	2554.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION S									
X1	421.910	41.000	2118.300	2303.600	600.000	1900.000	1970.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	550.000	0.000	0.000	0.000	0.000	0.000	0.000
OB	690.400	118.700	688.900	145.500	688.900	145.500	688.900	145.900	684.900	183.400
GR	682.400	226.400	682.400	285.300	682.800	396.900	682.400	489.400	680.700	560.200
OB	680.000	475.600	680.000	794.600	680.500	862.600	679.500	900.500	678.200	953.400
GR	679.100	1020.300	679.600	1071.300	678.700	1097.400	677.600	1135.100	677.300	1173.700
OB	679.600	1202.300	680.400	1234.500	680.000	1294.100	680.000	1433.900	680.000	1541.100
GR	680.100	1610.800	679.600	1655.500	676.500	1681.000	676.500	1724.900	679.700	1771.400
OB	678.400	1852.000	677.900	1935.600	677.900	2015.900	678.700	2026.200	678.700	2044.000
GR	678.700	2080.200	679.700	2103.200	676.300	2118.300	674.100	2123.300	672.900	2128.300
OB	670.700	2133.300	668.200	2138.300	667.800	2143.300	667.500	2148.300	666.100	2153.300
GR	665.600	2158.300	665.600	2163.300	667.200	2168.300	667.800	2173.300	668.500	2178.300
OB	669.500	2183.300	671.300	2188.300	673.000	2193.300	676.300	2203.600	688.900	2222.700
GR	688.900	2247.000	688.900	2247.000	688.900	2247.000	689.400	2344.800	689.700	2468.000
OB	690.100	2554.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.050	1712.900	0.120	1878.300	0.060	1990.800	0.080	2059.300	0.000
	CROSS SECTION T									
X1	423.110	70.000	1878.300	1990.800	900.000	1200.000	1200.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	600.000	0.000	0.000	0.000	0.000	0.000	0.000
OB	696.300	0.000	691.200	0.000	690.800	16.600	690.000	37.300	690.000	44.900
GR	690.000	45.400	690.000	45.400	688.600	67.200	688.600	67.200	688.600	67.600
OB	688.600	103.000	687.900	139.900	686.900	179.600	684.300	215.100	682.600	270.900
GR	682.600	349.800	683.000	420.200	683.900	479.900	684.300	530.100	682.700	589.300
OB	681.700	653.800	681.900	748.200	681.800	849.400	681.800	939.600	682.400	982.400
GR	681.300	1040.700	681.200	1074.500	680.600	1189.000	679.700	1223.700	680.900	1274.200
OB	681.100	1322.700	681.000	1382.300	679.900	1448.300	678.800	1490.800	679.600	1533.500
GR	680.900	1580.900	680.800	1617.900	680.000	1667.600	680.000	1699.500	681.600	1712.800
OB	681.400	1769.500	681.400	1824.700	682.500	1951.200	676.300	1878.300	674.600	1883.300
GR	672.900	1888.300	671.100	1893.300	669.500	1898.300	668.400	1903.300	667.900	1908.300
OB	667.800	1913.300	667.200	1918.300	666.400	1923.300	666.300	1928.300	666.000	1933.300
GR	665.500	1938.300	665.700	1943.300	662.200	1948.300	666.700	1953.300	667.100	1958.300
OB	669.100	1963.300	670.900	1968.300	671.500	1973.300	672.000	1978.300	672.500	1983.300
GR	674.800	1988.300	676.300	1990.800	679.200	2000.400	687.200	2037.000	689.100	2059.300
NH	6.000	0.050	919.200	0.080	1100.400	0.060	1193.500	0.070	1215.600	1.000
NH	1709.100	0.050	2066.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION U									
	"N" VALUE SET VERY HIGH (1.00) TO ELIMINATE CONVEYANCE IN ROB									
X1	424.360	58.000	1100.400	1193.500	900.000	1400.000	1250.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	825.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	688.300	118.100	688.700	157.800	689.000	187.000	687.800	210.100	685.000	252.600
OB	683.500	296.300	683.500	387.300	684.000	465.700	684.900	591.500	684.900	682.700
GR	684.200	730.400	683.500	798.500	683.300	871.000	684.300	919.200	684.900	997.400
OB	685.200	1032.700	684.300	1057.700	682.000	1093.900	676.300	1100.400	675.600	1105.400
GR	672.900	1110.400	672.000	1115.400	670.000	1120.400	668.000	1125.400	667.100	1130.400
OB	666.900	1135.400	666.900	1140.400	667.000	1145.400	667.200	1150.400	668.000	1155.400
GR	668.300	1160.400	669.700	1165.400	670.200	1170.400	668.500	1175.400	670.300	1180.400
OB	670.800	1185.400	672.700	1190.400	674.300	1193.500	691.700	1215.600	691.700	1252.100

GR	681.700	1349.700	681.300	1391.000	680.200	1476.700	679.400	1563.100	679.400	1659.800
GR	679.700	1735.500	677.700	1747.000	676.800	1793.500	676.800	1923.900	678.200	1988.800
NC	0.000	0.000	0.000	0.200	0.400	0.000	0.000	0.000	0.000	0.000
NH	8.000	0.100	1235.600	0.055	1475.200	0.060	1569.400	0.070	1588.900	0.050
NH	1413.700	1.000	2929.400	0.050	2962.200	0.100	3134.400	0.000	0.000	0.000
	CROSS SECTION V									
	"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB									
X1	425.460	76.000	1475.200	1569.400	1300.000	500.000	1100.000	0.000	0.000	0.000
GR	689.400	1093.300	689.900	1105.300	689.800	1105.300	689.600	1115.700	687.500	1131.900
GR	684.000	1151.000	678.900	1164.500	677.000	1183.800	675.600	1207.900	675.600	1235.600
GR	676.700	1245.100	677.300	1289.400	678.000	1337.900	680.000	1363.400	681.400	1392.800
GR	682.000	1408.800	683.000	1423.100	683.000	1433.400	682.400	1446.900	676.300	1475.200
GR	674.600	1490.200	672.700	1495.200	670.600	1490.200	668.300	1495.200	667.200	1500.200
GR	667.200	1505.200	667.600	1510.200	667.800	1515.200	667.900	1520.200	668.000	1525.200
GR	667.900	1530.200	668.100	1535.200	668.300	1540.200	669.900	1545.200	670.800	1550.200
GR	671.900	1555.200	672.400	1560.200	673.200	1565.200	676.300	1569.400	685.000	1580.000
GR	685.000	1585.800	682.900	1598.900	682.200	1613.700	682.100	1674.200	682.100	1729.700
GR	682.100	1752.500	682.600	1845.300	681.900	1916.600	681.400	1970.200	682.100	2051.600
GR	681.000	2104.900	680.200	2147.200	681.900	2253.800	681.600	2330.100	681.000	2376.700
GR	681.000	2458.100	681.600	2498.800	683.500	2550 100	685.500	2597.200	683 600	2661.300
GR	682.800	2697.700	681.300	2760.800	681.200	2809.500	680.900	2864.200	681.400	2909.200
GR	684.000	2915.200	681 100	2929 400	676 200	2944.500	676.200	2944.900	680.700	2962.200
GR	682.400	2988.200	682.000	3010.900	679.700	3047.400	682.200	3074.200	684.500	3094.000
GR	689.200	3134.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	6.000	0.080	1447.500	0.060	1522.300	0.080	1558.700	0.050	1609.400	1.000
NM	4052.700	0.050	4818.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION X									
	"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB									
X1	427.260	81.000	1447.500	1522.300	1900.000	200 000	1800.000	0.000	0.000	0.000
GR	686.700	1441.600	676.300	1447.500	674.100	1452.500	672.100	1457.500	670.700	1462.500
GR	669.800	1467.500	669.000	1472.500	668.200	1477.500	666.900	1482.500	666 300	1487.500
GR	665.600	1492.500	665.500	1497.500	666.400	1502.500	669.200	1507.500	671.400	1512.500
GR	673.100	1517.500	676.300	1522.300	679.700	1526.800	680.700	1555.100	685.300	1558.700
GR	683.100	1547.500	681.000	1575.100	680.800	1609.400	680.800	1674.400	682.000	1738.300
GR	682.400	1824.100	682.300	1911.000	682.300	2013.900	682.300	2111.700	682.300	2198.400
GR	682.600	2288.100	682.100	2361.500	682.100	2410.500	683.500	2460.400	684.200	2498.500
GR	683.200	2547.600	683.200	2638.400	682.000	2757.200	683.400	2865.600	682.100	2988.300
GR	679.500	3040.000	679.700	3052.500	683.400	3070.500	683.400	3164.200	683.600	3257.100
GR	683.600	3287.400	683.500	3339.400	683.200	3441.300	682.300	3523.700	682.300	3575.300
GR	683.700	3629.200	685.800	3677.100	687.000	3740.200	687.000	3804.900	686.300	3828.600
GR	684.200	3863.900	682.600	3905 200	681.500	3974.200	681.200	4052.700	684.700	4055.900
GR	684.300	4071.700	682.100	4084.400	680.900	4100.600	678.100	4109.700	681.100	4119.300
GR	682.700	4134.000	682.800	4160.900	682.700	4193.900	683.400	4205.800	683.700	4222.400
GR	687.500	4229.600	688.900	4237.100	689.900	4306.900	689.100	4395.700	689.100	4497.600
GR	688.700	4536.800	688.600	4608.200	688.900	4680.800	689.700	4774.700	690.600	4817.700
GR	694.300	4818.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

NH	5.000	0.050	2275.300	0.090	2550.000	0.040	2637.400	0.070	2677.400	0.050
NH	3094.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	CROSS SECTION 7									
X1	429.590	87.000	2552.000	2637.400	900.000	2320.000	2330.000	0.000	0.000	0.000
GR	688.000	450.000	684.000	475.000	684.000	500.000	684.000	650.000	683.000	750.000
GR	680.000	1000.000	681.000	1000.000	681.000	1028.900	681.600	1069.000	681.300	1090.800
GR	680.300	1122.800	678.100	1150.100	678.100	1190.000	678.100	1245.000	678.100	1302.100
GR	678.100	1354.500	678.200	1412.500	678.400	1445.500	679.100	1467.100	680.100	1504.000
GR	681.100	1539.400	681.000	1615.800	681.400	1666.400	680.700	1716.300	680.400	1764.700
GR	680.200	1795.300	679.900	1834.300	680.000	1876.700	681.000	1916.900	681.700	1955.900
GR	682.300	1994.100	682.700	2041.800	682.700	2070.100	682.700	2108.100	681.900	2134.800
GR	680.500	2163.300	679.700	2188.900	679.700	2216.700	680.000	2249.300	681.100	2275.100
GR	682.000	2293.700	682.700	2316.400	683.200	2337.200	683.300	2363.400	682.200	2383.500
GR	681.100	2405.700	680.900	2426.800	680.100	2443.000	680.800	2469.400	681.600	2479.800
GR	684.400	2497.000	679.400	2519.600	679.400	2544.400	676.300	2550.000	674.400	2557.000
GR	672.100	2562.000	670.700	2567.000	670.800	2572.000	670.800	2577.000	671.000	2582.000
GR	671.000	2587.000	671.000	2592.000	670.900	2597.000	670.800	2602.000	670.800	2607.000
GR	670.700	2612.000	671.000	2617.000	671.100	2622.000	672.200	2627.000	672.800	2632.000
GR	676.300	2637.400	679.200	2644.100	682.600	2664.200	694.600	2677.600	684.700	2695.300
GR	683.400	2701.200	683.400	2706.700	685.600	2717.400	686.300	2749.700	687.300	2749.700
GR	688.600	2779.200	689.600	2827.700	689.500	2870.600	689.100	2928.200	685.600	2994.000
GR	690.500	3038.400	690.800	3094.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	0.090	2445.900	0.060	2533.300	0.070	2556.700	0.050	2958.100	0.000
	CROSS SECTION 8									
X1	430.810	80.000	2445.900	2533.300	150.000	1300.000	1220.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	2600.000	0.000	0.000	0.000	0.000
GR	688.000	150.000	684.000	450.000	684.000	500.000	683.000	800.000	680.000	850.000
GR	679.000	1000.000	678.100	1000.000	678.200	1014.800	680.200	1041.300	679.600	1087.200
GR	679.600	1131.600	678.300	1169.600	677.800	1218.000	677.800	1261.900	677.800	1317.100
GR	677.900	1362.700	679.700	1393.400	678.900	1439.900	679.500	1470.300	680.400	1496.400
GR	680.400	1527.800	680.100	1561.800	680.000	1575.400	681.200	1601.800	681.800	1627.800
GR	680.200	1651.400	679.000	1683.800	678.900	1719.700	678.500	1776.900	678.100	1819.700
GR	678.100	1861.800	678.800	1888.200	680.600	1916.200	682.700	1940.100	682.900	1978.900
GR	682.900	2019.300	683.300	2062.100	682.600	2111.700	681.900	2156.000	681.200	2193.700
GR	680.800	2237.200	680.800	2284.800	681.600	2315.300	682.500	2345.700	683.000	2368.900
GR	683.700	2389.700	684.100	2411.700	681.600	2428.400	676.300	2444.500	676.300	2444.500
GR	676.300	2445.900	674.100	2450.900	672.200	2455.900	671.500	2460.900	670.800	2465.900
GR	670.200	2470.900	669.900	2475.900	669.600	2480.900	669.300	2485.900	668.600	2490.900
GR	668.500	2495.900	668.800	2500.900	669.100	2505.900	669.500	2510.900	670.300	2515.900
GR	671.400	2520.900	673.200	2525.900	676.300	2533.300	680.000	2537.000	680.900	2546.900
GR	682.700	2556.700	686.400	2559.700	686.400	2574.600	686.400	2575.000	686.400	2575.000
GR	686.600	2612.600	687.100	2698.800	688.200	2779.800	688.600	2861.600	688.700	2958.100
EJ	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

THIS RUN EXECUTED 29 NOV 85 11:37:15

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CODE = 01,02,03,04,05,06
MODIFICATION = 50,51,52,53,54,55,56

T1 VILLAGE OF BLISSFIELD,MI FIS
T2 100-YEAR FLOOD
T3 RIVER RAISIN, BLISSFIELD

J1	ICHECK	INQ	NINV	IDIR	STRT	METRIC	HVINS	Q	WSEL	FQ
	0.	4.	0.	0.	0.000223	0.00	-1.0	0	0.000	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

SECNO	DEPTH	CNSEL	CRIWS	WSELA	EG	HV	HL	QLOSS	BANK ELEV
G	QLOB	QCH	QROB	A-OB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	XCONT	CORAR	TOPWID	ENDST

FORM 6413

**PROF 3

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 398.070
2094 WSEL NOT GIVEN, AVG OF MAX,MIN USED

3470 ENCROACHMENT STATIONS= 0.0 1060.1 TYPE= 1 TARGET= 1060.099
CROSS SECTION BB

398.07	22.79	682.29	0.00	0.00	682.37	0.07	0.00	0.00	666.30
10830.	556.	5232.	5042.	619.	1909.	3715.	0.	0.	666.30
0.00	0.90	2.74	1.36	0.092	0.060	0.068	0.000	659.50	353.55
0.000223	0.	0.	0.	0	0	8	0.00	706.55	1060.10

1490 NH CARD USED
*SECNO 399.300
CROSS SECTION CC

399.30	22.75	682.55	0.00	0.00	682.59	0.04	0.22	0.00	666.50
10830.	7626.	3006.	198.	5922.	1369.	319.	194.	24.	666.50
0.22	1.29	2.20	0.90	0.050	0.060	0.080	0.000	659.80	552.39
0.000145	1250.	1230.	1200.	1	0	0	0.00	1018.04	1570.43

CCHV= 0.400 CEHV= 0.700
1490 NH CARD USED
*SECNO 400.500

3470 ENCROACHMENT STATIONS= 650.0 2250.0 TYPE= 1 TARGET= 1600.000
CROSS SECTION DD

400.50	20.37	682.77	0.00	0.00	682.84	0.07	0.23	0.02	666.70
10830.	3083.	4059.	3688.	2813.	1747.	2525.	382.	58.	666.70
0.39	1.10	2.97	1.46	0.054	0.060	0.061	0.000	662.40	656.28
0.000291	1100.	1200.	1250.	0	0	0	0.00	1593.72	2250.00

1490 NH CARD USED
*SECND 401.200

3470 ENCROACHMENT STATIONS= 700.0 2472.0 TYPE= 1 TARGET= -700.000
CROSS SECTION EE

401.20	20.62	683.02	0.00	0.00	683.16	0.14	0.27	0.05	666.70
10830.	4811.	5589.	430.	3608.	1385.	302.	478.	80.	666.70
0.46	1.33	4.04	1.42	0.054	0.060	0.098	0.000	662.40	787.68
0.000528	700.	700.	700.	2	0	0	0.00	1465.63	2253.31

SECNO	DEPTH	CWSEL	CRIWS	MSELK	EC	HV	HL	CLOSS	BANK ELEV
Q	GLOB	QCH	QROB	A CR	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

1490 NH CARD USED
*SECNO 402.050

2265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 400.0 2450.0 TYPE= 1 TARGET= 2050.000
CROSS SECTION A

402.05	20.84	683.34	0.00	0.00	683.37	0.03	0.16	0.05	666.90
10830.	1454.	4239.	5137.	2279.	2417.	4485.	612.	110.	666.90
0.63	0.64	1.75	1.15	0.055	0.060	0.051	0.000	662.50	635.89
0.000102	700.	850.	900.	1	0	0	0.00	1661.42	2450.00

1490 NH CARD USED
*SECNO 403.750

3470 ENCROACHMENT STATIONS= 525.0 2150.0 TYPE= 1 TARGET= 1625.000
CROSS SECTION B

403.75	21.43	683.53	0.00	0.00	683.56	0.03	0.19	0.00	667.10
10830.	1531.	2819.	6480.	1605.	1388.	6196.	956.	164.	667.10
0.99	0.95	2.03	1.05	0.071	0.060	0.051	0.000	662.10	724.48
0.000130	1100.	1700.	1800.	2	0	0	0.00	1425.52	2150.00

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
*SECNO 404.850

3470 ENCROACHMENT STATIONS= 0.0 3250.0 TYPE= 1 TARGET= 3249.999
CROSS SECTION C

404.85	21.27	683.67	0.00	0.00	683.69	0.03	0.13	0.00	667.20
10830.	159.	2622.	8049.	210.	1294.	8321.	1180.	201.	667.20
1.23	0.76	2.03	0.97	0.080	0.060	0.053	0.000	662.40	1451.53
0.000126	1150.	1100.	1000.	0	0	0	0.00	1798.47	3250.00

1490 NH CARD USED
*SECNO 406.450

3470 ENCROACHMENT STATIONS= 0.0 1975.0 TYPE= 1 TARGET= 1974.999
CROSS SECTION D

406.45	28.67	683.87	0.00	0.00	683.94	0.06	0.23	0.01	667.40
10830.	4998.	5301.	531.	4510.	1989.	1275.	1491.	258.	667.40
1.47	1.11	2.67	0.42	0.055	0.060	0.100	0.000	655.20	479.40
0.000177	1680.	1600.	1450.	0	0	0	0.00	1440.22	1919.63

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
0	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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CCHV= 0.300 CEHV= 0.500
1490 NH CARD USED
*SECNO 407.770

3470 ENCROACHMENT STATIONS= 0.0 900.0 TYPE= 1 TARGET= 899.999
CROSS SECTION E

407.77	20.55	684.15	0.00	0.00	684.23	0.08	0.29	0.01	667.50
10830.	507.	4133.	6139.	366.	1413.	3959.	1694.	292.	667.50
1.64	1.39	2.96	1.55	0.069	0.060	0.054	0.000	663.60	73.59
0.000276	1200.	1320.	1400.	2	0	0	0.00	926.41	900.00

1490 NH CARD USED
*SECNO 408.700

3470 ENCROACHMENT STATIONS= 0.0 1100.0 TYPE= 1 TARGET= 1099.999
CROSS SECTION F

408.70	21.88	684.38	0.00	0.00	684.43	0.05	0.19	0.01	667.80
10830.	114.	3176.	7540.	157.	1258.	5736.	1812.	309.	667.80
1.78	0.73	2.52	1.31	0.100	0.060	0.054	0.000	662.50	39.01
0.000208	950.	930.	750.	2	0	0	0.00	1060.99	1100.00

1490 NH CARD USED
*SECNO 410.070

3470 ENCROACHMENT STATIONS= 0.0 1550.0 TYPE= 1 TARGET= 1549.999
CROSS SECTION G

410.07	19.89	684.59	0.00	0.00	684.61	0.03	0.17	0.01	668.00
10830.	92.	3156.	7583.	158.	1483.	7880.	2027.	341.	668.00
2.04	0.58	1.88	0.96	0.100	0.060	0.053	0.000	664.70	5.58
0.000116	1440.	1370.	1050.	2	0	0	0.00	1544.42	1550.00

1490 NH CARD USED
*SECNO 411.350

3470 ENCROACHMENT STATIONS= 1000.0 3150.0 TYPE= 1 TARGET= 2150.000
CROSS SECTION H

411.35	22.21	684.71	0.00	0.00	684.73	0.03	0.12	0.00	668.40
10830.	85.	3455	7290.	169.	1811.	8350.	2261.	382.	668.40
2.28	0.50	1.91	0.87	0.090	0.060	0.054	0.000	662.50	1061.31
0.000113	1450.	1280.	950.	2	0	0	0.00	2088.69	3150.00

SECNO	DEPTH	CWSEL	CRITWS	LEWLK	EG	HV	KL	QLOSS	BANK ELEV
	Q CR	CCH	CRICD	WTN	ACH	ACOR	VQ	TKA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XMCH	XNR	WTN	ELMIN	SSTA
SLOPE	YLOB	YLCH	YLOB	ITRIAL	IPC	ICONT	CORAR	TOPWID	ENDST

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1490 NH CARD USED
*SECNO 413.950

3470 ENCROACHMENT STATIONS= 900.0 1990.0 TYPE= 1 TARGET= 1090.000
CROSS SECTION I

413.95	20.20	684.90	0.00	0.00	684.94	0.05	0.20	0.01	668.30
10830.	7280.	3344.	206.	5620.	1366.	195.	2531.	430.	668.30
2.51	1.30	2.65	1.06	0.052	0.060	0.070	0.000	664.70	900.00
0.000193	1200.	1600.	1350.	2	0	0	0.00	1073.46	1973.46

1490 NH CARD USED
*SECNO 413.910

3470 ENCROACHMENT STATIONS= 450.0 1819.0 TYPE= 1 TARGET= -450.000
CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM

413.91	20.35	685.05	0.00	0.00	685.07	0.03	0.12	0.01	668.30
10830.	7063.	3469.	98.	7291.	1987.	179.	2698.	453.	668.30
2.71	0.97	1.85	0.55	0.055	0.060	0.080	0.000	664.70	450.00
0.000106	850.	960.	900.	1	0	0	0.00	1295.02	1745.02

1490 NH CARD USED
*SECNO 413.960

3470 ENCROACHMENT STATIONS= 450.0 3320.0 TYPE= 1 TARGET= -450.000
CROSS SECTION AT BLISSFIELD DAM

413.96	8.76	685.04	0.00	0.00	685.08	0.03	0.01	0.00	676.30
10830.	8930.	1795.	105.	7204.	1138.	144.	2709.	454.	676.30
2.72	1.24	1.58	0.73	0.063	0.060	0.080	0.000	676.30	450.00
0.000225	50.	50.	50.	0	0	0	0.00	1316.33	1766.33

1490 NH CARD USED
*SECNO 414.010

3470 ENCROACHMENT STATIONS= 1300.0 2570.1 TYPE= 1 TARGET= -1300.000
CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELD DAM

414.01	18.96	685.06	0.00	0.00	685.10	0.05	0.01	0.01	676.80
10830	7541.	3263	25.	5592.	1373.	46.	2717.	456.	676.80
2.73	1.35	2.39	0.54	0.052	0.060	0.100	0.000	666.10	1300.00
0.000271	50.	50.	50.	0	0	0	0.00	1247.07	2567.07

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	YLOBL	YLCH	YLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

1490 NH CARD USED
*SECNO 414.600

3470 ENCROACHMENT STATIONS= 1200.0 2570.1 TYPE= 1 TARGET= -1200.000
CROSS SECTION J

414.60	19.58	685.18	0.00	0.00	685.21	0.03	0.10	0.00	676.30
10830.	8015.	2790.	24.	6855.	1432.	53.	2802.	470.	676.30
2.93	1.17	1.95	0.44	0.052	0.060	0.100	0.000	665.60	1200.00
0.000172	450.	590.	650.	1	0	0	0.00	1367.92	2567.92

1490 NH CARD USED
*SECNO 415.620

3470 ENCROACHMENT STATIONS= 1350.0 2369.0 TYPE= 1 TARGET= -1350.000
CROSS SECTION K

415.62	19.43	685.33	0.00	0.00	685.37	0.04	0.15	0.00	676.20
10830.	7352.	3411.	67.	5709.	1710.	96.	2953.	493.	676.30
2.99	1.29	1.99	0.70	0.052	0.060	0.070	0.000	665.90	1350.00
0.000163	850.	1020.	1100.	2	0	0	0.00	1005.17	2355.17

CCHV= 0.500 CEHV= 1.000

1490 NH CARD USED
*SECNO 416.650

3470 ENCROACHMENT STATIONS= 450.0 985.5 TYPE= 1 TARGET= -450.000
CROSS SECTION L

416.65	23.04	685.54	0.00	0.00	685.70	0.16	0.21	0.13	676.20
10830.	2751.	7901.	98.	1759.	2125.	84.	3043.	504.	676.20
3.07	1.56	3.65	1.16	0.070	0.060	0.070	0.000	662.50	450.00
0.000451	600.	1030.	1100.	2	0	0	0.00	405.77	855.77

1490 NH CARD USED
*SECNO 417.490

3470 ENCROACHMENT STATIONS= 1378.0 1558.8 TYPE= 1 TARGET= 180.900
CROSS SECTION M

417.49	25.63	686.03	0.00	0.00	686.38	0.35	0.49	0.19	676.30
10830.	119.	10318.	393.	77.	2113.	252.	3125.	510.	676.30
3.12	1.54	4.88	1.56	0.070	0.060	0.080	0.000	660.40	1390.08
0.000787	840.	840.	740.	2	0	0	0.00	168.72	1558.80

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

CCHV= 0.300 CEHV= 0.500
*SECNO 417.530

3470 ENCROACHMENT STATIONS= 1406.0 1558.8 TYPE= 1 TARGET= 152.800
CROSS SECTION AT DOWNSTREAM TOE OF EMBANXMENT TO RAILROAD BRIDGE

417.53	25.62	686.02	0.00	0.00	686.41	0.39	0.01	0.02	676.30
10830.	0.	10643.	187.	0.	2113.	252.	3127.	510.	676.30
3.12	0.00	5.04	0.74	0.000	0.023	0.070	0.000	660.40	1406.00
0.000137	40.	40.	40.	2	0	0	0.00	152.80	1558.80

*SECNO 417.540

3270 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 690.60 MAX ELLC= 689.20

CROSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

417.54	18.86	686.06	0.00	0.00	686.42	0.36	0.00	0.01	687.30
10830.	0.	10830.	0.	0.	2243.	0.	3127.	510.	687.30
3.12	0.00	4.83	0.00	0.000	0.023	0.000	0.000	667.20	1434.50
0.000178	10.	10.	10.	2	0	0	0.00	147.00	1581.50

*SECNO 417.560

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 690.60 MAX ELLC= 689.20

CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

417.56	18.86	686.06	0.00	0.00	686.42	0.36	0.00	0.00	687.30
10830.	0.	10830.	0.	0.	2244.	0.	3128.	510.	687.30
3.12	0.00	4.83	0.00	0.000	0.023	0.000	0.000	667.20	1434.50
0.000177	20.	20.	20.	0	0	0	0.00	147.00	1581.50

*SECNO 517.570

3470 ENCROACHMENT STATIONS= 1442.0 1588.0 TYPE= 1 TARGET= 146.000
CROSS SECTION BETWEEN RAILROAD BRIDGE AND US 223 BRIDGE

517.57	19.34	686.04	0.00	0.00	686.45	0.40	0.00	0.02	100000.00
10830.	0.	10830.	0.	0.	2129.	0.	3129.	510.	100000.00
3.12	0.00	5.09	0.00	0.000	0.023	0.000	0.000	666.70	1442.00
0.000203	5.	5.	5.	2	0	0	0.00	146.00	1588.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EQ	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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*SECNO 417.570

3470 ENCROACHMENT STATIONS= 1442.0 1588.0 TYPE= 1 TARGET= 146.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 679.00 ELREA= 100000.00

CROSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE

417.57	19.35	686.05	0.00	0.00	686.45	0.40	0.00	0.00	679.00
10830.	0.	10830.	0.	0.	2132.	0.	3129.	510.	100000.00
3.12	0.00	5.09	0.00	0.000	0.023	0.000	0.000	666.70	1442.00
0.000202	5.	5.	5.	0	0	0	0.00	146.00	1588.00

SPECIAL BRIDGE

5070, VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.71	2.80	189.00	73.00	5.00	2045.00	1.93	666.70	666.70

*SECNO 417.620
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
686.79	686.47	0.03	0.	10830.	2045.	2017.	685.90	689.40

3470 ENCROACHMENT STATIONS= 1442.0 1588.0 TYPE= 1 TARGET= 146.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 679.00 ELREA= 100000.00

CROSS SECTION AT UPSTREAM FACE OF US 223 (ADRIAN ST.) BRIDGE

417.62	19.71	686.41	0.00	0.00	686.79	0.38	0.34	0.00	679.00
10830.	0.	10830.	0.	0.	2185.	0.	3131.	510.	100000.00
3.13	0.00	4.96	0.00	0.000	0.023	0.000	0.000	666.70	1442.00
0.000187	55.	55.	55.	2	0	0	0.00	146.00	1588.00

1490 NH CARD USED
*SECNO 417.660

3470 ENCROACHMENT STATIONS= 1413.8 1633.0 TYPE= 1 TARGET= 219.200

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO JS 223 BRIDGE

417.66	21.54	484.46	0.00	0.00	484.81	0.37	0.01	0.00	676.30
10830.	191.	10014.	625.	122	1991.	400.	3133.	511	676.30
3.13	1.54	5.03	1.54	0.090	0.060	0.090	0.000	464.90	1416.55
0.000907	35.	35.	35	2	0	0	0.00	216.45	1633.00

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CCHV= 0.500 CEHV= 1.000
490 NH CARD USED
*SECNO 417.480

3470 ENCROACHMENT STATIONS= 1413.8 1673.0 TYPE= 1 TARGET= 259.200
CROSS SECTION N

417.68	21.40	484.50	0.00	0.00	484.84	0.34	0.02	0.01	676.30
10830.	188.	9783.	859.	123.	1997.	585.	3135.	511.	676.30
3.13	1.53	4.90	1.47	0.090	0.060	0.092	0.000	464.90	1416.41
0.000857	20.	20.	20.	2	0	0	0.00	256.59	1673.00

490 NH CARD USED
*SECNO 418.290

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 1050.0 2200.0 TYPE= 1 TARGET= 1150.000
CROSS SECTION D

418.29	22.15	687.15	0.00	0.00	687.19	0.04	0.20	0.15	676.30
10830.	3213.	3870.	3747.	2575.	1817.	3047.	3208.	521.	676.30
3.24	1.25	2.13	1.23	0.056	0.060	0.047	0.000	665.00	1050.00
0.000167	660.	610.	620.	2	0	0	0.00	1118.70	2200.00

CCHV= 0.300 CEHV= 0.500
1490 NH CARD USED
*SECNO 418.330

3470 ENCROACHMENT STATIONS= 1050.0 2200.0 TYPE= 1 TARGET= 1150.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

418.33	21.96	687.16	0.00	0.00	687.19	0.04	0.01	0.00	681.50
10830.	3081.	3998.	3751.	2518.	1925.	3145.	3214	522.	681.40
3.25	1.22	2.08	1.19	0.056	0.060	0.047	0.000	665.20	1050.00
0.000164	40.	40	40.	1	0	0	0.00	1150.00	2200.00

1490 NH CARD USED
*SECNO 418.340

SECNO	DEPTH	CKSEL	CRINS	HSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TIA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	YLOBL	YLCH	YLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

FORM 6413

3245 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 4 MIN ELTRD= 680.90 MAX ELLC= 689.40

3470 ENCROACHMENT STATIONS= 1050.0 2250.0 TYPE= 1 TARGET= 1200.000

CROSS SECTION AT DOWNSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

418.34	21.96	687.16	0.00	0.00	687.20	0.04	0.00	0.00	681.50
10830.	2809.	4197.	3824.	2254.	1924.	3067.	3216.	522.	681.40
3.25	1.25	2.18	1.25	0.057	0.060	0.046	0.000	665.20	1050.00
0.000181	10.	10.	10.	0	0	0	0.00	1161.07	2234.82

1490 NH CARD USED
*SECNO 418.350

3265 DIVIDED FLOW

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 689.40 MAX ELLC= 689.40

3470 ENCROACHMENT STATIONS= 1050.0 2250.0 TYPE= 1 TARGET= 1200.000

CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

418.35	21.96	687.16	0.00	0.00	687.20	0.04	0.00	0.00	681.50
10830.	2809.	4197.	3823.	2254.	1924.	3066.	3217.	522.	681.40
3.25	1.25	2.18	1.25	0.057	0.060	0.046	0.000	665.20	1050.00
0.000181	6.	6.	6.	0	0	0	0.00	1161.05	2234.80

1490 NH CARD USED
*SECNO 418.360

3470 ENCROACHMENT STATIONS= 1050.0 2250.0 TYPE= 1 TARGET= 1200.000

CROSS SECTION UPSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

418.36	21.96	687.16	0.00	0.00	687.20	0.04	0.00	0.00	681.50
10830.	3077.	3996.	3757.	2517.	1924.	3189.	3219.	522.	681.40
3.25	1.22	2.08	1.18	0.056	0.060	0.047	0.000	665.20	1050.00
0.000164	10.	10.	10.	0	0	0	0.00	1184.82	2234.82

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

1490 NH CARD USED
#SECNO 418.600

3470 ENCROACHMENT STATIONS= 1050.0 2250.0 TYPE= 1 TARGET= 1200.000
CROSS SECTION OA

418.40	21.97	687.17	0.00	0.00	687.21	0.04	0.01	0.00	681.50
10830.	3078.	3989.	3763.	2522.	1926.	3198.	3226.	523.	681.40
3.26	1.22	2.07	1.18	0.056	0.060	0.047	0.000	665.20	1050.00
0.000163	40.	40.	40.	0	0	0	0.00	1184.96	2234.96

CCHV= 0.100 CEHV= 0.300
1490 NH CARD USED
#SECNO 418.990

3470 ENCROACHMENT STATIONS= 1700.0 2900.0 TYPE= 1 TARGET= 1200.000
CROSS SECTION P

418.99	25.96	687.26	0.00	0.00	687.30	0.04	0.09	0.00	676.30
10830.	4366.	4529.	1935.	5316.	2110.	1559.	3340.	539.	676.30
3.37	0.82	2.15	1.24	0.094	0.060	0.045	0.000	661.30	1700.00
0.000145	600.	595.	600.	0	0	0	0.00	1145.45	2845.45

1490 NH CARD USED
#SECNO 419.940

3470 ENCROACHMENT STATIONS= 400.0 1648.1 TYPE= 1 TARGET= -400.000
CROSS SECTION Q

419.94	20.87	687.37	0.00	0.00	687.39	0.02	0.09	0.00	676.40
10830.	1432.	2209.	7190.	1610.	1423.	4716.	3508.	560.	676.40
3.57	0.89	1.54	1.07	0.050	0.060	0.055	0.000	666.50	400.00
0.000089	850.	950.	650.	1	0	0	0.00	1229.72	1629.72

CCHV= 0.400 CEHV= 0.700
1490 NH CARD USED
#SECNO 421.910

3470 ENCROACHMENT STATIONS= 550.0 2554.8 TYPE= 1 TARGET= -550.000
CROSS SECTION S

421.91	21.88	687.48	0.00	0.00	687.49	0.01	0.09	0.00	676.30
10830.	8766.	2026.	38.	12918.	1506.	100.	3790.	592.	676.30
3.98	0.68	1.35	0.38	0.074	0.060	0.090	0.000	665.60	550.00
0.000068	400.	1970.	1900.	2	0	0	0.00	1671.43	2221.43

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

FORM 6413

.490 NH CARD USED
#SECNO 423.110

3470 ENCROACHMENT STATIONS= 600.0 2059.3 TYPE= 1 TARGET= -600.000
CROSS SECTION T

423.11	25.34	657.54	0.00	0.00	697.56	0.02	0.07	0.01	676.30
10830.	7464.	3222.	144.	8317.	2077.	254.	4039.	621.	676.30
4.21	0.90	1.55	0.57	0.054	0.060	0.080	0.000	662.20	600.00
0.000086	800.	1200.	1200.	1	0	0	0.00	1441.14	2041.14

.490 NH CARD USED
#SECNO 424.360

3470 ENCROACHMENT STATIONS= 825.0 2066.3 TYPE= 1 TARGET= -825.000
CROSS SECTION U
"N" VALUE SET VERY HIGH (1.00) TO ELIMINATE CONVEYANCE IN ROB

424.36	20.79	697.68	0.00	0.00	697.71	0.03	0.14	0.01	676.30
10830.	744.	3665.	6421.	1012.	1672.	7023.	4306.	655.	676.30
4.46	0.74	2.19	0.91	0.065	0.060	0.090	0.000	666.90	825.00
0.000177	900.	1250	1400.	2	0	0	0.00	1238.75	2063.75

CCHV= 0.200 CEHV= 0.400
1490 NH CARD USED
#SECNO 425.460
CROSS SECTION V
"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

425.46	20.65	687.85	0.00	0.00	687.90	0.05	0.18	0.01	676.30
10830.	4592.	4158.	2080.	3993.	1479.	9199.	4501.	681.	676.30
4.61	1.53	2.48	0.23	0.065	0.060	0.328	0.000	667.20	1129.20
0.000224	1300	1100	500	2	0	0	0.00	1994.31	3123.51

1490 NH CARD USED
#SECNO 427.260
3280 CROSS SECTION 427.26 EXTENDED 1.54 FEET

CROSS SECTION X
"N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB

427.26	22.74	688.24	0.00	0.00	688.37	0.13	0.44	0.03	676.30
10830.	37.	5641.	5153.	40.	1392.	14704.	4686.	702.	676.30
4.77	0.92	4.05	0.35	0.080	0.060	0.327	0.000	665.50	1441.60
0.000582	1900.	1800.	200.	2	0	0	0.00	2791.97	4233.57

SECNO	DEPTH	CWSEL	CRWS	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

1490 NH CARD USED
SECNO 429.590
3280 CROSS SECTION 429.59 EXTENDED 0.52 FEET

CROSS SECTION Z

429.59	17.82	688.53	0.00	0.00	688.53	0.01	0.13	0.03	676.30
10830.	9400.	1212.	217.	15531.	1438.	557.	5329.	804.	676.30
5.52	0.61	0.84	0.39	0.051	0.060	0.061	0.000	670.70	450.00
0.000028	900.	2330.	2320.	2	0	0	0.00	2327.39	2777.39

1490 NH CARD USED
SECNO 430.810

3470 ENCROACHMENT STATIONS= 0.0 2600 0 TYPE= 1 TARGET= 2599.999

CROSS SECTION AA

430.81	20.03	688.53	0.00	0.00	688.54	0.01	0.01	0.00	676.30
10830.	8618.	2055.	157.	16295.	1542.	291.	5438.	817.	676.30
5.66	0.53	1.33	0.56	0.090	0.060	0.065	0.000	668.50	150.00
0.000065	150.	1220.	1300.	2	0	0	0.00	2450.00	2600.00



1) COUNTY: LENAWEE

2) STUDY NAME: BLISS FIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: INPUT, 1981 STUDY BY REVIEWER



1981 STUDY INPUT

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C
C 45
C 398 07 CROSS SECTION BB   1981 FLOOD IS ELEV 683 38
C 399 30 CROSS SECTION CC
C 400 50 CROSS SECTION DD
C 401 20 CROSS SECTION EE
C 402 05 CROSS SECTION A
C 403 75 CROSS SECTION B    1981 FLOOD IS ELEV 686 38
C 404 85 CROSS SECTION C
C 406 45 CROSS SECTION D
C 410 07 CROSS SECTION G   1981 FIOOD IS ELEV 686 5 AT STP
C 412 95 CROSS SECTION I
C 413 91 CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM
C 413 96 CROSS SECTION AT BLISSFIELD DAM
C 414 01 CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELO OAM
C 414 60 CROSS SECTION J
C 415 62 CROSS SECTION K
C 416 65 CROSS SECTION L
C 417 55 CROSS SECTION M
C 417 59 CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO RAILROAO BRIDGE
C 417.60 CRDSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE
C 417 62 CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIOGE
C 517 63 CROSS SECTION BETWEEN RAILROAO BRIOGE AND US 223 BRIOGE
C 417 63 CROSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST ) BRIDGE
C 417 68 CROSS SECTION AT UPSTREAM FACE OF US 223 (AORIAN ST ) BRIDGE
C 417 72 CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 223 BRIDGE
C 417 74 CROSS SECTION N   1981 FLOOD IS ELEV 687 1
C 418 29 CROSS SECTION O
C 418 33 CROSS SECTION AT OOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIOGE
C 418.34 CROSS SECTION AT OOWNSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND
C 418 34 DIVIOED FLOW CONDITION DUE TO PRESENCE OF BRIDGE ABUT.(687.8)
C 418 35 CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND
C 418 35 DIVIOED FLOW CONDITION OUE TO PRESENCE OF BRIOGE ABUTMENTS
C 418 36 CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PEOESTRIAN BRIOGE
C 418 40 CROSS SECTION OA
C 418 99 CROSS SECTION P
C 419 94 CROSS SECTION Q
C 421 91 CROSS SECTION S  1981= ELEV 687 9
C 423 11 CROSS SECTION T
C 424.36 CROSS SECTION U
C 424 36 "N" VALUE RAISED (0.50) TO ELIMINATE CONVEYANCE IN ROB
C 425 46 CROSS SECTION V  1981 FLOOD IS ELEV 888 85
C 425 46 "N" VALUE RAISED (O 50) TO ELIMINATE CONVEYANCE IN ROB
C 427 26 CROSS SECTION X
C 427 26 "N" VALUE RAISED (O 50) TO ELIMINATE CONVEYANCE IN ROB
C 429 59 CROSS SECTION Z
C 430 81 CROSS SECTION AA
T1       HUD FLODD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS
T2       VILLAGE OF BLISSFIELD   RIVER RAISIN
T3       RIVER RAISIN, BLISSFIELD      FLOOD RATING CURVE
J1     0       2       0       0 0 00030       0      -1       0  683 38
J2     1       0      -1       0       0   -2 13
J3   200
NC 0.080   0 080   0.030     0 1     0.3
QT     8    3000    4000     5000    6000    7000    8000    9000   10000
NH     5   0 050   449.8   0.100   513 4   0 030   605 8   0 080   944 4   0 050
NH1060 1
X1398 07     61    513 4   605.8       0       0       0
X3                                      1060 1
GR 683 7   279.0   683.1   320.1   683 1   320 1   683 1   320.1   682.3   353.5
GR 680 6   368 9   680.7   405.2   680.7   427.7   680 3   434 0   680 3   445 1
GR 681.2   449 8   680 1   461.7   677 0   477 5   673 3   485.8   671.0   497 6
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6300	GR 669 8	503 1	666 3	513 4	663 8	518 4	662 5	523 4	661 4	528 4
6400	GR 660 8	533 4	659 6	538.4	659 5	543 4	659 8	548 4	660 2	553 4
6500	GR 661 3	558 4	661 9	563 4	660 6	568 4	660 1	573 4	660 9	578 4
6600	GR 661 5	583 4	662.0	587 4	662 0	593 4	663.6	598 4	666 3	605 8
6700	GR 671 9	618 4	674 2	630 7	677 6	639 0	677 2	669 8	676 3	703 7
6800	GR 674 8	745 5	674.3	783.4	673 4	849 7	673 4	894 3	672 4	944 4
6900	GR 672 3	979 9	672 3	1011 1	673 2	1032 8	675 8	1047 4	680 2	1060 1
7000	GR 679 5	1105 9	679 1	1178 0	679 1	1291 3	679 4	1405.7	680 6	1491 7
7100	GR 680 6	1587 3	681 0	1673 3	680 3	1744 6	680 3	1797 1	680 2	1833.0
7200	GR 688 0	1833 0								
7300	NH 4	0.050	1463 4	0 080	1475.0	0 030	1541 5	0 080	1591 1	
7400	X1399 30	42	1475 0	1541 5	1250	1200	1230			
7500	GR 685 5	270 7	685 4	330 1	684 4	396 6	684 4	476 4	683 2	539 8
7600	GR 680 6	590 8	679 1	630 8	677 9	666 4	676 0	709 4	676 0	756.0
7700	GR 675 6	782 8	674 0	811.9	675 2	845 9	675 2	911 1	674 8	956 7
7800	GR 673 9	1003 6	673 6	1081.0	673 7	1129 2	675 6	1163 5	676 7	1210 1
7900	GR 677 2	1271 7	677.6	1323 1	677 0	1377 8	677 0	1423 6	676 3	1463 4
8000	GR 666 5	1475 0	664 2	1480 0	661.8	1485 0	661 0	1490 0	660 5	1495 0
8100	GR 660 3	1500.0	659 8	1505 0	659 9	1510 0	660 5	1515 0	660 9	1520 0
8200	GR 661 0	1525 0	663 0	1530 0	665 1	1535 0	666 5	1541 5	676 1	1557 2
8300	GR 688 6	1582 8	689 1	1591 1						
8400	NH 6	0 050	1719 6	0 100	1775 8	0.030	1848 3	0 100	2002 1	0 045
8500	NH2193 0	0 070	2346 5							
8600	X1400 50	60.	1775 8	1848 3	800	1250	1200			
8700	GR 684.3	408 6	684 3	496 3	684 4	590 1	683 4	630 2	682 0	687 8
8800	GR 682 3	782 0	682 4	869 0	682 1	938 1	682.0	1007 2	682 0	1052 5
8900	GR 680 1	1096 2	678 6	1149 9	678 6	1180 8	679 3	1235 5	679 2	1277 3
9000	GR 678 3	1314 8	677 5	1348 7	677 1	1384 5	679 3	1416 0	679 5	1475 0
9100	GR 679 7	1540 7	679 5	1588 3	680 1	1624 6	680 2	1671 0	680 4	1719 6
9200	GR 680 4	1754 0	666 7	1775.8	665 1	1780 8	663 9	1785 8	663 5	1790 8
9300	GR 663 2	1795 8	662 7	1800 8	662 6	1805 8	662 4	1810 8	662 5	1815.8
9400	GR 663 1	1820 8	663 9	1825 8	664 7	1830 8	664 7	1835 8	664 9	1840 8
9500	GR 666 7	1848 3	674 2	1863 7	676 4	1902 6	680 0	1922 9	679 2	1949 5
9600	GR 678.2	2002 1	677 2	2078 1	675 8	2141 1	674.7	2193 0	674 0	2239 7
9700	GR 673 6	2277 4	673 7	2285 5	679 5	2298 7	683 4	2310 7	686 3	2323 6
9800	GR 687 0	2331 4	687 2	2346 5	687 2	2346 5	687 2	2346.5	689 1	2346 5
9900	NH 5	0 050	2110 0	0 100	2140 0	0.030	2212 5	0 100	2242 0	0 050
10000	NH2472 0									
10100	X1401 20	30	2140 0	2212 5	300.	700	700			
10200	GR 686 0	0 0	684 0	650 0	680 0	1210 0	679 0	1250 0	680.0	1290 0
10300	GR 681 0	1350 0	680 0	1420 0	679 0	1470 0	680 0	1525 0	680 5	1650 0
10400	GR 680 0	1770 0	680 0	2110.0	666 7	2140 0	665 1	2145 0	663 9	2150 0
10500	GR 663.5	2155 0	663 2	2160.0	662 7	2165 0	662.6	2170 0	662.4	2175.0
10600	GR 662 5	2180.0	663 1	2185.0	663 9	2190 0	664 7	2195 0	664 7	2200 0
10700	GR 664 9	2205 0	666 7	2212 5	680 0	2242 0	688 0	2272 0	688 0	2472 0
10800	NH 7	0 050	1658 6	0 080	1742 0	0 030	1871 0	0.080	1939 4	0 050
10900	NH2681 7	0 070	2764 2	0.035	2885 2					
11000	X1402 05	94	1742 0	1871 0	300	800	850.			
11100	X3					2670 0				
11200	GR 694 9	290 7	685 0	290 7	685 0	291 1	685 0	291 1	684 6	344 4
11300	GR 684 2	391 9	683 8	411 6	684 5	469 3	684.8	551 9	684 1	604 0
11400	GR 683 2	642 0	682 7	687 0	683 7	749 8	682 9	817 4	683 2	873.9
11500	GR 683 1	920 1	683 1	943 8	681 9	985 8	681 0	1056 3	681 2	1115 9
11600	GR 688 0	1183 0	682 5	1247 3	680 7	1311 5	679 6	1358 9	679 5	1420 4
11700	GR 679 5	1459 3	679 7	1507 8	679 4	1548 2	678 8	1583 7	678 9	1625 3
11800	GR 679 1	1658 6	679 5	1684 7	680 3	1702 0	680 3	1723 1	666 9	1742 0
11900	GR 665 9	1747.0	665.4	1752 0	664 4	1757 0	663 7	1762 0	664 9	1767 0
12000	GR 665.7	1772 0	664 9	1777 0	665 5	1782 0	665.7	1787 0	665 9	1792 0
12100	GR 665 4	1797 0	665 0	1802 0	664 7	1807 0	664 9	1812 0	664 2	1817 0
12200	GR 664 1	1822 0	663 7	1827 0	663 6	1832 0	663 4	1837 0	663 2	1842 0
12300	GR 662 5	1847 0	662 7	1852 0	663 8	1857 0	664 4	1862 0	665 7	1867 0
12400	GR 666 9	1871 0	677 0	1882 3	679 3	1908 6	678 1	1939 4	677 4	1980 5
12500	GR 676.4	2040 0	676 3	2097 8	676 3	2168 6	676 6	2235.0	669 8	2475 9
12600	GR 671 6	2504 0	674 2	2548 5	676 1	2585 0	675 8	2635 4	675 0	2681.7
12700	GR 672.6	2720 9	671.1	2764.2	670 6	2789 6	670 9	2815 1	673 1	2831 3
12800	GR 680 0	2852.6	682 9	2865 7	684 0	2885 2	682 2	2909 2	683 1	2918.0

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12900    GR 683 1  2930 9   681.9  2974 2   682 2  3020 0   682 7  3072 4   683 6  3137 9
13000    GR 684 3  3192 0   665.7  3236 4   687 3  3287 3   689.1  3392.0
13100    NH     5   0 050   815.3   0 080   956 1   0 030  1026 2   0 100  1048 0   0 050
13200    NH2216 6
13300    X1403 75     58     956 1  1026 2    700     1800     1700
13400    GR 690 0  232 4   688 7   232 8   696 8   232 8   696 8   314 8   684 8   314 8
13500    GR 684 8  314 8   684.8   314 8   684 3   329 4   683 8   372 5   684 3   420 5
13600    GR 684 9  459 6   684 3   524.3   684 1   567 7   684 1   613 6   684 1   657 9
13700    GR 683 9  713 0   682 9   744 1   679 6   760 1   676 8   779 7   675 9   794 9
13800    GR 675.9  815 3   675 7   927 4   673.6   939 8   667 1   955 7   667 1   956 1
13900    GR 667 1  956 1   665 5   961 1   664 8   966 1   665 2   971 1   664 3   976 1
14000    GR 663 4  981 1   662 9   986 1   663 3   991 1   662 6   996.1   662 4  1001 1
14100    GR 662 1 1006 1   662 2  1011 1   662 7  1016 1   663 7  1021 1   667 1  1026 2
14200    GR 679 7 1048 0   678 7  1065 0   678 3  1110.6   677 7  1150 7   676 6  1188.7
14300    GR 675 6 1216 3   675 6  1226 4   674 4  1250 5   676 2  1271 8   677 5  1311 8
14400    GR 678 4 1362 7   678 2  1492.6   678.0  1780 0   679 6  2150 0   680 0  2275 0
14500    GR 684 0 2320 0   684 6  2425 0   688.0  2660 0
14600    NH     7   0 050   610 8   0 040  1041 3   0 050  1370 6   0 080  1477 0   0.030
14700    NH1541 0   0 100  1642.5   0 050  2592 0
14800    X1404 85     75    1477 0  1541 0   1150      500     1100
14900    GR 687 2    0 0    686 4     0 6    686 4    68 9    687 2   115 5   687 3   156 0
15000    GR 686 4  210 3   686 8   246 5   687 0   291 7   686 5   345 1   686 6   401 2
15100    GR 686 2  448 5   686 7   490 6   686 5   537 7   685 3   573 7   684 9   610 8
15200    GR 687 0 1041 3   686.0  1108 6   685 9  1147 0   686 6  1184 4   686 8  1230 6
15300    GR 686 8 1276 6   686 8  1323 8   686 6  1370 6   686 6  1413 4   687 4  1421 4
15400    GR 687 1 1428 9   687 1  1429 3   687 1  1429 3   686 7  1442.0   687 1  1446 2
15500    GR 667 2 1477 0   663 5  1482 0   662.6  1487 0   662 6  1492 0   662 6  1497 0
15600    GR 662 6 1502 0   662 4  1507 0   662.4  1512 0   662 6  1517 0   662 8  1522 0
15700    GR 663 3 1527 0   664 7  1532 0   667 2  1541 0   681 2  1599 1   680 4  1625 2
15800    GR 679 9 1642 5   678 3  1679 1   677 4  1705 5   677 4  1734 4   675.3  1765 3
15900    GR 675 5 1788 2   675 3  1821 2   675 9  1850 3   677 1  1875 6   678 3  1900 0
16000    GR 679 0 1929 3   679 0  1938 4   679 2  1982 7   679.8  2031 9   679 6  2091 0
16100    GR 679 2 2171 0   679 4  2237 0   677 9  2290 9   675 8  2324 6   675 2  2360 5
16200    GR 675 4 2387.3   676 0  2400 0   680.0  2525 0   680 5  2650 0   680 0  2955 0
16300    GR 679 6 3150 0   680 0  3275.0   684.0  3315 0   684 4  3460 0   688 0  3650 0
16400    NH     4   0 050  1278.7   0 090  1385 6   0 030  1466 8   0 100  1483 6
16500    X1406 45     57    1385 6  1466 8    1680      500     1600
16600    GR 686 2  466 8   684 0   478 6   681 1   496 2   679 4   532 6   678 4   573 0
16700    GR 677 6  668 7   677 6   730 7   679 1   779 8   678 2   851 4   677 0   907 0
16800    GR 678.9  948 6   681 1   990 4   680 6  1071 2   680 6  1131 6   680 0  1184 8
16900    GR 679 2 1242 4   679 2  1278 7   680.0  1293 4   680 2  1309 9   678 1  1318 9
17000    GR 678 4 1338 9   672 1  1372.1   667.4  1385 6   665 9  1390 6   664 3  1395 6
17100    GR 662 1 1400 6   659 9  1405 6   657 9  1410 6   656 9  1415.6   656 4  1420 6
17200    GR 655 8 1425 6   655 4  1430 6   655 2  1435 6   655 4  1440 6   655.6  1445 6
17300    GR 656 8 1450 6   659 6  1455 6   663 9  1460 6   667 4  1466 8   683 4  1483 6
17400    GR 681 8 1505 7   681 7  1519 5   680 3  1553 7   681 3  1596 5   681 3  1687 7
17500    GR 681.2 1779 5   680 5  1842 7   680.9  1886.9   683 3  1907 8   684 4  1930 7
17600    GR 685 0 1991 6   684 3  2039 0   684.4  2071 4   684 4  2071 7   685 0  2113 7
17700    GR 685 5 2137 0   694 2  2137 4
17800    NH     4   0 100    27 1   0.030   116 9   0 100   209 3   0.050  1493 2
17900    X1410 07     46     27 1   116 9    3500     2000     3500
18000    GR 688 0    0 0    677 3    17 5   668 0    27 1   666.5    32 1   665 5    37 1
18100    GR 665 2   42 1   665 1    47 1   665.0    52.1   665 0    57 1   665 0    62 1
18200    GR 664 8   67 1   664 8    72 1   664 7    77 1   664 7    82 1   665 4    87 1
18300    GR 666 4   92 1   666 8    97.1   667.2   102 1   667 5   107 1   668 0   116 9
18400    GR 679 0  147 9   679 1   209.3   679 1   328 2   679 8   444.7   680 6   556 8
18500    GR 680 6  633.0   680 4   701 4   679 0   790 1   678 4   894 6   678 4   998 5
18600    GR 678.3 1053 4   678 9  1105 9   679 3  1168 3   678 5  1211 0   677 8  1268 6
18700    GR 677 0 1305 1   678 4  1343 0   679 3  1381 7   679 4  1427 0   679 4  1473 3
18800    GR 679 4 1491 2   680 0  1493 2   684 0  1840 0   685 0  2250 0   686 0  2830 0
18900    GR 688.0 3200.0
19000    NH     5   0 050  1823 5   0 080  1867.4   0 030  1938 8   0.070  1961 2   0 050
19100    NH2501 9
19200    X1412.95     90    1867.4  1938 8    1700.     1000     2900.
19300    GR 688 4    0 0    688 3    0 0    688 2    29 3   688 2    29 3   688.2    29 7
19400    GR 708 8   29 7   708.8    68 8   688 6    69.3   688 7    69.3   688.7    69 3
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19500	GR 688 9	107 2	687 8	148 9	686 1	189 0	684 2	244 4	683 0	279 0
19600	GR 682 5	333 1	681 9	399 0	681 8	442 0	681 8	542 5	681 3	662 9
19700	GR 680 2	751 3	679 4	793.7	680 0	867 7	678 9	923 5	677 9	942 1
19800	GR 679 0	978 5	679 5	1027 6	679 3	1086 5	678 3	1129 3	679 0	1179 2
19900	GR 678 8	1239 7	678 9	1281 5	678 2	1342 8	679 2	1391 2	679 2	1453 8
20000	GR 679 7	1519 2	680 1	1567 2	679 5	1611 3	680 6	1666 4	680 2	1714 1
20100	GR 680 1	1740 8	680 0	1782 2	679 7	1814 9	680 6	1823 5	680 6	1823 5
20200	GR 668 3	1867 4	667 2	1872 4	666 2	1877 4	665 7	1882 4	665 1	1887 4
20300	GR 665 3	1892 4	664 9	1897 4	664 7	1902 4	664 7	1907 4	664 9	1912 4
20400	GR 665 2	1917 4	665 4	1922 4	665 7	1927 4	668 3	1938 8	684 4	1961 2
20500	GR 685 6	1990 8	685 6	1998 0	685 6	1998 8	685 7	2030 9	685 7	2032 5
20600	GR 685 7	2049 3	686 0	2096.9	686 0	2097 5	688 8	2098 3	688 8	2148 1
20700	GR 687 9	2148 6	687 9	2148 6	687 9	2148.6	685 1	2160 6	685 4	2226 8
20800	GR 685 0	2290 2	685 5	2378 2	685 9	2438 2	686 3	2501 9	686 1	2563 7
20900	GR 685 7	2632 9	685 6	2722.3	685 6	2820 9	686 3	2922 2	686 1	3010 4
21000	GR 686 5	3110.0	686 1	3199 3	686 5	3273 3	689.0	3302 0	689 0	3302 0
21100	NH 4	0 050	1410.0	0.080	1588 0	0 030	1689 4	0 080	1819.0	
21200	X1413.91	28	1588 0	1689 4	850	900	960			
21300	GR 689 4	0 0	680 4	0 0	680 0	170 0	680 5	280 0	680 0	415 0
21400	GR 676 7	520 0	680 0	680 0	680 0	1080 0	677 0	1410.0	676 5	1500.0
21500	GR 676 3	1580 0	668 3	1588 0	667 2	1593.0	666 2	1598 0	665 7	1603 0
21600	GR 665 1	1608 0	665.3	1613 0	664 9	1618 0	664.7	1623 0	664 7	1658.0
21700	GR 664 9	1663 0	665 2	1668 0	665 4	1673 0	665 7	1678 0	668 3	1689.4
21800	GR 680 0	1699 0	684 0	1719 0	688 0	1819 0				
21900	NH 4	0 050	1080 0	0.080	1580 0	0 030	1710.0	0.080	3320 0	
22000	X1413 96	17	1580 0	1710 0	50	50	50	0	0	0
22100	GR 689 4	0 0	680.4	0 0	680 0	170 0	680 5	280 0	680 0	415 0
22200	GR 676 7	520 0	680 0	680 0	680 0	1080 0	677 0	1410 0	676 5	1500 0
22300	GR 676.3	1580 0	676 3	1710 0	680 0	1720 0	684 0	1740 0	688 0	1840.0
22400	GR 689.5	2340.0	688 0	3320 0						
22500	NH 4	0 050	2393 3	0 100	2461 2	0 030	2555 9	0.100	2570 1	
22600	X1414 01	59	2461 2	2555 9	50	50.	50		0 5	
22700	GR 688 4	650 0	688 2	679 3	688 2	679 7	688 6	719 3	688 9	757 2
22800	GR 687 8	788 9	686 1	839 0	684 2	894 4	683 0	929 0	682 5	983 1
22900	GR 680 4	1000 0	680 4	1000 0	679 3	1028 8	678 0	1058 3	677 4	1075 0
23000	GR 677 4	1075 0	678 8	1094 9	679 1	1179 0	679 8	1278 2	680 3	1348 1
23100	GR 679 0	1404 5	679 3	1488 4	679 8	1562 4	680 1	1624 0	679 7	1722 1
23200	GR 680 3	1798 2	680 5	1909.9	680 5	1958 4	679 0	1985 8	679 0	2049 8
23300	GR 679 5	2142.5	679 8	2186 2	680.6	2220 6	680 2	2292 4	679 6	2352 1
23400	GR 678 8	2393 3	680 1	2409 4	680 0	2426 4	676 3	2461 2	675 1	2466 2
23500	GR 673 0	2471 2	670 8	2476 2	669 4	2481 2	667.5	2486 2	666 9	2491 2
23600	GR 666 4	2496 2	665 6	2501 2	666 1	2506 2	667 0	2511 2	668 1	2516 2
23700	GR 668.6	2521 2	669 2	2526 2	669 9	2531 2	670 9	2536 2	672 4	2541 2
23800	GR 673 3	2546 2	675 1	2551 2	676 3	2555 9	686 8	2570 1		
23900	NH 4	0 050	2393 3	0.100	2461 2	0 030	2555 9	0 100	2570 1	
24000	X1414.60	54.	2461 2	2555 9	300	650	590			
24100	GR 688 0	150 0	688 0	330 0	684 0	455 0	681 3	750 0	680 0	960 0
24200	GR 680 4	1000 0	680 4	1000 0	679 3	1028 8	678 0	1058 3	677 4	1075 0
24300	GR 677 4	1075 0	678 8	1094 9	679 1	1179.0	679 8	1278 2	680 3	1348 1
24400	GR 679 0	1404 5	679 3	1488 4	679 8	1562 4	680 1	1624 0	679 7	1722.1
24500	GR 680 3	1798 2	680 5	1909 9	680.5	1958 4	679 0	1985 8	679 0	2049 8
24600	GR 679 5	2142.5	679 8	2186.2	680 6	2220 6	680 2	2292 4	679 6	2352 1
24700	GR 678 8	2393 3	680 1	2409 4	680 9	2426 4	676.3	2461 2	675 1	2466 2
24800	GR 673 0	2471 2	670 8	2476 2	669 4	2481 2	667 5	2486 2	666 9	2491 2
24900	GR 666.4	2496 2	665.6	2501 2	666 1	2506 2	667 0	2511 2	668 1	2516 2
25000	GR 668 6	2521 2	669 2	2526 2	669 9	2531 2	670.9	2536 2	672 4	2541 2
25100	GR 673.3	2546 2	675 1	2551 2	676 3	2555 9	686 8	2570 1		
25200	NH 4	0 050	2128 6	0 080	2230 0	0 030	2333 9	0 070	2369 0	
25300	X1415 62	66.	2230 0	2333 9	850	1100	1020.			
25400	GR 688 0	360 0	688 6	440.0	688 0	520 0	684 0	710 0	682 0	850.0
25500	GR 681 5	1000 0	681 4	1000 4	682 4	1048 5	682 2	1066 8	681 5	1073 0
25600	GR 684 0	1090 4	682.3	1114.1	681 2	1152.5	681.4	1185 9	680 8	1203.8
25700	GR 680 5	1229 8	680 5	1270 1	680 5	1302 2	679 3	1328 1	678 8	1351 9
25800	GR 679 6	1388.1	679.6	1418.3	679 6	1437.4	679 4	1465 5	679 4	1500.2
25900	GR 680.1	1552 3	680.2	1596.8	679 7	1636.5	679.0	1667.9	677.7	1705.4
26000	GR 677 2	1755 4	677 3	1807 6	677.4	1855.1	677 6	1905 2	678.1	1938.7

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26100    GR 678 5   1979 9    678 5    2016 2    679 2    2055 6    679 8    2095 9    679 9    2128 6
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26400    GR 667 3   2265 0    667 2    2270 0    668.5    2275 0    667 2    2280 0    667 2    2285.0
26500    GR 667 1   2290 0    666 7    2295 0    665 9    2300 0    666 0    2305 0    666 6    2310 0
26600    GR 667 6   2315 0    668 5    2320 0    670 9    2325 0    673.7    2330 0    676 3    2333 9
26700    GR 691 2   2369.0
26800    NH      5   0 100    418.7     0 070    723 8     0 030    837 8     0 070    891 7     0 100
26900    NH 985 5
27000    X1416 65       50    723 8    837 8     400      1100     1030
27100    X3                              410 0
27200    GR 681.3     0 0     681 3      0 0    682.0      44 9    682 0      46 1    692 6      47 7
27300    GR 692.6    84 2     684 0     84 2    684 0      84 6    684 0      85 8    683.5     102 9
27400    GR 682 5   119 1     682 5    143 3    682 6     171.9    682 6     171 9    682 5     207 6
27500    GR 682 7   231 0     682 7    258 1    683 4     276 3    683 4     302.5    683 4     330 2
27600    GR 683.6   354 8     683 7    375.1    682 5     418.7    682 8     442 6    682.3     453 3
27700    GR 680 1   470.4     678 6    485 8    679 1     514 4    679 2     533 2    678 8     551 0
27800    GR 678 8   580 7     678.5    609.7    678 0     631 2    678.9     655 9    679 8     685 1
27900    GR 679 3   719 9     676.2    723 8    670 0     733.8    665 0     748.8    662 5     780 8
28000    GR 665 0   812 8     670.0    827.8    676 2     837 8    686 7     858 0    687 1     891 7
28100    GR 687 5   926 2     687.5    927 1    703 1     927 1    703 1     983.5    689 6     985 5
28200    NH      4   0 100   1314.0     0 070  1406 0      0 030  1512 0      0 080  2101 2
28300    X1417 55       51.  1406 0    1512 0     900.      800.      900.
28400    X3                              1378 0                1558 8
28500    GR 687 6   1314 0    687 3    1359 0    687 3    1388 0    676 3    1406 0    673 3    1411 0
28600    GR 670 3   1416 0    667 7    1421 0    665 4    1426 0    664 6    1431 0    661 9    1436 0
28700    GR 660 8   1441 0    660 4    1446 0    660 7    1451 0    661 7    1456 0    662 8    1461 0
28800    GR 663 3   1466 0    664 3    1471 0    664 9    1476 0    665 6    1481 0    666 7    1486 0
28900    GR 667 3   1491 0    668 5    1496 0    670 0    1501 0    671 3    1506 0    673 2    1511 0
29000    GR 676 3   1512 0    685 0    1558 8    681 7    1579 3    680 5    1610 6    680 5    1627 5
29100    GR 683 1   1636 6    682 3    1645 5    684 8    1657 1    684 9    1678 3    684 0    1693 8
29200    GR 682 8   1712 9    683 6    1738 7    683 8    1778 1    686 1    1788 8    686 3    1819 5
29300    GR 684 5   1901.7    684 1    1925 7    683 0    1943 9    681 0    1952 1    681 0    1981 5
29400    GR 680 7   2002 1    681 7    2017 8    682 4    2044 2    682 5    2060 8    689 7    2079.2
29500    GR 690 3   2101.2
29600    NC   0 07    0 07   0.023      0.3      0 5
29700    X1417 59        0        0        0       40       40       40
29800    X3       0      0        0    1406 0       0     1558 8      0
29900    X1417 60       54   1434 5    1581 5       10       10       10
30000    X2                              689 2    690 6
30100    GR 696 3     0 0     696 3      0 4    690 1      0 4    690 5     56 1    690 8     126 3
30200    GR 690 6    214 0    690 8    303 3    690 8     377 0    690 9     456 8    690 9     528 5
30300    GR 690 9    599 0    690 9    688 2    691 2     765 5    691 4     847 4    691 4     847 4
30400    GR 691 4    847 8    690 9    968 3    691 2    1095 8    691 3    1188 8    691 6    1263 5
30500    GR 691 1   1326.1    691 1   1327 4    690 6    1422 9    690 6    1433.0    687 3    1433 0
30600    GR 687 3   1434.5    677 2   1434 5    673 4    1450 0    672 2    1460 0    670 2    1470 0
30700    GR 667 7   1480.0    667.8   1490 0    667 2    1500 0    667 6    1510.0    668.1    1520 0
30800    GR 670 3   1530 0    670.7   1540 0    671 5    1550 0    672 7    1560 0    673 0    1570 0
30900    GR 674 5   1581 5    687 3   1581 5    687 3    1583 0    690 6    1583 0    691 0    1648 4
31000    GR 691 6   1731 5    691 7   1918 4    692 0    2004 0    691 8    2088 7    691 8    2159 6
31100    GR 691 8   2232 9    692 2   2297 4    692 2    2338.2    696.2    2338 2
31200    X1417 62        0        0        0       20       20       20
31300    X2                              689 2    690 6
31400    X1517.63       61   1420 5    1588 0       5        5        5
31500    X3                              1442 0                1588 0
31600    GR 696 2     0 0     688.0      0 0    688 0     103 3    687 2     183 8    686 0     273 5
31700    GR 685 4    359 4    685.4    422.7    685 4     500 1    685 0     585 2    685 0     670 7
31800    GR 685.2    762 2    685 7    838 6    686 4     905 1    686 8     994 2    687 5    1082 1
31900    GR 688 1   1147 6    688.9   1217 7    688.9    1293 4    689 1    1312 3    689.1    1345 3
32000    GR 689 1   1376 1    689 4   1404 3    693 2    1420 5    686 0    1420 5    679 0    1442.0
32100    GR 676 2   1450 0    673 9   1460.0    672 0    1470 0    671 3    1480 0    669 9    1490 0
32200    GR 666 7   1500 0    667 4   1510 0    667 8    1520 0    668 5    1530 0    669 2    1540 0
32300    GR 671 2   1550 0    671.7   1560 0    673 6    1570 0    676 2    1580.0    678 0    1588 0
32400    GR 686 0   1609 0    693 7   1609 0    689 7    1676 6    688 9    1786 9    688 9    1890 7
32500    GR 688 9   1980 8    688.7   2100 1    688 7    2216 7    688 9    2281.2    689 5    2350 8
32600    GR 690 8   2430.8    692 0   2513 0    692 1    2589 2    692 6    2636 1    692 6    2721 1
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32700    GR 692 2   2769 3    691 2   2819.5    691 0   2894 5    690 4   2954 7    690 4   3008 3
32800    GR 696 3   3008 3
32900    X1417.63     67      1441 5   1588.0      5       5       5
33000    X3                             1442.0              1588 0
33100    GR 696 2     0 0     688 0      0 0      688 0    103 3    687 2    183 8    686 0    273 5
33200    GR 685 4   359 4     685 4    422 7      685 4    500 1    685 0    585 2    685 0    670 7
33300    GR 685 2   762 2     685 7    838 6      686 4    905 1    686 8    994 2    687 5   1082 1
33400    GR 688 1  1147 6     688.9   1217 7      688 9   1293 4    689 1   1312 3    689 1   1345 3
33500    GR 689 1  1376 1     689 4   1404 3      693 2   1420 5    686 0   1420 5    679 0   1442 0
33600    GR 676 2  1450 0     673 9   1460 0      672 0   1470 0    671 3   1480 0    670 0   1489.0
33700    GR 670 0  1489 0     669 5   1491 0      669 5   1491 0    666 7   1500 0    667 4   1510 0
33800    GR 667 8  1520 0     668 5   1530 0      669 1   1539 0    669 1   1539 0    669 4   1541 0
33900    GR 669 4  1541 0     671 2   1550 0      671 7   1560 0    673 6   1570.0    676 2   1580 0
34000    GR 678 0  1588 0     686 0   1609 0      693 7   1609 0    689 7   1676 6    688 9   1786 9
34100    GR 688 9  1890 7     688 9   1980 8      688 7   2100 0    688 7   2216 7    688 9   2281 2
34200    GR 689 5  2350 8     690 8   2430.8      692 0   2513 0    692 1   2589 2    692 6   2636 1
34300    GR 692 6  2721 1     692 2   2769 3      691 2   2819.5    691 0   2894 5    690.4   2954 7
34400    GR 690 4  3008 3     696 3   3008 3
34500    SB  1 05    1 71       2 8        0        73        5     2045      1 93         0         0
34600    X1417 68      0          0          0       55       55       55
34700    X2                         1    685 9    689 4
34800    X3                             1442.0              1588 0
34900    NH      5  0 100    1413 8    0 080    1440 6    0 030   1550 3    0 080   1649 4    0 100
35000    NH2423.0
35100    X1417 72     68      1440 6   1550 3      35       35       35
35200    X3                             1413.8              1633 0
35300    GR 689 1  1263 0     687 6   1413 8      676 3   1440 6    673 0   1445 5    671 1   1450 5
35400    GR 669 1  1455 5     668 5   1460 5      667 4   1465 5    666 8   1470 5    666 3   1475 5
35500    GR 665 6  1480 5     665 2   1485 5      665 9   1490 5    665 1   1495 5    665 0   1500 5
35600    GR 664 9  1505 5     665 2   1510 5      665 7   1515 5    667 5   1520 5    668 0   1525 5
35700    GR 668 8  1530 5     670 6   1535 5      672.5   1540 5    676 3   1550 3    683 0   1567 1
35800    GR 682 0  1580 7     682 0   1649 4      682 0   1690 7    685 2   1701 3    685 8   1741 7
35900    GR 687 3  1766 1     687 6   1794 4      687 9   1826.6    687 9   1830 0    687 9   1832 4
36000    GR 688 5  1896 0     688 5   1896 4      688 5   1897 3    685 6   1910 0    686 2   1955 2
36100    GR 686 6  1957 6     686 6   1971 6      686 0   1973 2    686 0   2017 1    687 7   2020 0
36200    GR 687 7  2021 4     687 7   2022 0      689 5   2112 6    689 5   2113 0    689 5   2113.4
36300    GR 688 8  2146 0     688 5   2184.4      688 5   2184 4    687 2   2296 0    687 2   2296 5
36400    GR 687 2  2297 1     687 2   2301 6      687 2   2301 6    687 2   2301.6    688 9   2327 0
36500    GR 688 9  2327 0     688 9   2327 0      688 9   2344 3    691 2   2348 3    691 6   2378 3
36600    GR 691 6  2378 7     691 6   2378 7      691 9   2423 0
36700    NH      5  0 100    1413 8    0.080    1440 6    0 030   1550 3    0 080   1649 4    0 100
36800    NH2423 0
36900    X1417 74      0          0          0       20      20.       20
37000    X3                             1413 8              1673 0
37100    NC 0 080   0 080     0 030      0 1      0 3
37200    NH      6  0 100    1149 4    0 055    1462 1    0.030   1563 9    0 090   1639 6    0 035
37300    NH2057 2   0 100    2302.7
37400    X1418 29     63      1462 1   1563 9      600      700       550
37500    GR 697 6   854 6     697 6    878 3      688 3   878 7     688.3    878 7    687 8    937 3
37600    GR 687 4   967 9     687 4    968 3      686 5   991 0     686 3   1063 1    684 4   1125 9
37700    GR 679 9  1149 4     678 8   1226 4      678 8   1286 8    680 0   1330 3    680 3   1405 8
37800    GR 681 2  1440 4     681 2   1456 4      676 3   1462 1    673 6   1467 1    671 1   1472 1
37900    GR 669 4  1477.1     669 7   1482 1      667 6   1487 1    666 3   1492 1    665 3   1497 1
38000    GR 665 0  1502.1     665 2   1507 1      665 6   1512 1    666 3   1517 1    666 8   1522 1
38100    GR 667 6  1527 1     668 5   1532.1      668 8   1537 1    670 8   1542 1    672 8   1547 1
38200    GR 673 8  1552 1     673 9   1557 1      674 8   1562 1    676 3   1563 9    679 8   1577.7
38300    GR 682 2  1604 9     682 9   1639 6      682 9   1639 6    682 9   1639 6    682 9   1727 9
38400    GR 682 8  1837 5     681 9   1955 2      681 6   2057 2    681 1   2116 0    681 3   2153 0
38500    GR 681 9  2163 9     681 9   2163 9      681 9   2163 9    693 5   2163 9    693 5   2195 2
38600    GR 684 5  2195 2     684 5   2195 2      684 5   2195 2    686 2   2224 9    689 0   2253 9
38700    GR 692 1  2274 6     695 2   2285 2      696 3   2302 7
38800    NC  0 04    0 04      0.03       0 3      0 5
38900    NH      6  0 100    1149.4    0.055    1462 0    0.030   1566 0    0 090   1639 6    0 035
39000    NH2057 2   0 100    2302 7
39100    X1418 33     45.     1462 0   1566 0      40       40       40
39200    GR 697 6   878 3     688.3    878 7      687.8   937 3     687 4    967.9    687 4    968.3
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39300    GR 686 5    991 0    686 3    1063 1    684 4    1125 9    679.9    1149 4    678 8    1226 4
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39500    GR 681 5   1462 0    676 6    1464 0    671 1    1474 0    666 7    1484 0    665 7    1494 0
39600    GR 665 2   1504 0    665.2    1514.0    665 5    1524 0    666 5    1534 0    668 0    1544 0
39700    GR 671 9   1554 0    676 6    1564 0    681 4    1566 0    681 4    1579 6    681 4    1579 6
39800    GR 680 9   1612 5    682 9    1639.6    682 9    1727 9    682 8    1837.5    681 9    1955 2
39900    GR 681 6   2057 2    681 1    2116 0    681 3    2153 0    681 9    2163 9    684 5    2195 2
40000    GR 686 2   2224 9    689 0    2253 9    692.1    2274.6    695 2    2285 2    696 3    2302 7
40100    NH      6   0 100    1149 4     0 055   1462 0     0 030   1566 0     0 090   1639 6     0 035
40200    NH2057 2   0 100    2302 7
40300    X1418 34      45    1462 0    1566 0      10        10        10
40400    X2                             688 4    689 4
40500    GR 697 6   878 3    688 3     878 7    687 8     937 3    687 4     967 9    687 4     968 3
40600    GR 686 5   991 0    686 3    1063 1    684 4    1125 9    679 9    1149.4    678 8    1226 4
40700    GR 678 8  1286 8    680 0    1330 3    682 7    1405 0    689 4    1450 0    681 5    1450 0
40800    GR 681 5  1462 0    676 6    1464 0    671 1    1474 0    666 7    1484 0    665 7    1494 0
40900    GR 665 2  1504 0    665 2    1514 0    665 5    1524 0    666 5    1534 0    668 0    1544 0
41000    GR 671 9  1554 0    676 6    1564 0    681 4    1566.0    681 4    1579 6    689 4    1579 6
41100    GR 680 9  1612 5    682 9    1639 6    682 9    1727 9    682 8    1837 5    681 9    1955 2
41200    GR 681 6  2057 2    681 1    2116 0    681 3    2153 0    681 9    2163 9    684 5    2195 2
41300    GR 686 2  2224 9    689 0    2253 9    692 1    2274.6    695 2    2285 2    696 3    2302 7
41400    NH      6   0 100    1149 4     0 055   1462 0     0 030   1566 0     0 090   1639 6     0 035
41500    NH2057 2   0 100    2302 7
41600    X1418 35      0          0         0         6         6         6
41700    X2                             688 4    689 4
41800    NH      6   0 100    1149 4     0 055   1462 0     0 030   1566 0     0 090   1639 6     0 035
41900    NH2057 2   0 100    2302 7
42000    X1418 36      45    1462 0    1566 0      10        10        10
42100    GR 697 6   878 3    688 3     878 7    687 8     937.3    687 4     967 9    687 4     968 3
42200    GR 686 5   991 0    686 3    1063 1    684 4    1125 9    679 9    1149 4    678 8    1226 4
42300    GR 678 8  1286 8    680 0    1330 3    681 0    1405 0    681 5    1450 0    681 5    1450 0
42400    GR 681 5  1462 0    676 6    1464 0    671 1    1474 0    666 7    1484.0    665 7    1494 0
42500    GR 665 2  1504 0    665 2    1514 0    665 5    1524 0    666 5    1534 0    668 0    1544 0
42600    GR 671 9  1554 0    676 6    1564 0    681 4    1566 0    681 4    1579 6    681 4    1579 6
42700    GR 680 9  1612 5    682 9    1639 6    682 9    1727 9    682 8    1837 5    681 9    1955 2
42800    GR 681.6  2057 2    681 1    2116 0    681 3    2153 0    681 9    2163 9    684 5    2195 2
42900    GR 686 2  2224 9    689 0    2253 9    692 1    2274 6    695 2    2285 2    696 3    2302 7
43000    NH      6   0 100    1149 4     0 055   1462 0     0 030   1566 0     0 090   1639 6     0 035
43100    NH2057 2   0 100    2302 7
43200    X1418 40      0          0         0        40        40        40
43300    NC                             0 1      0 3
43400    NH      7   0 100    1824 3     0.035   1943.1     0 100   2445 1     0 030   2548 3     0 090
43500    NH2580.5   0 035    2753 0     0 100   2928 3
43600    X1418 99      67    2445 1    2548 3      700       700       700
43700    GR 689.1  1441 6    688 5    1466 0    687 9    1513 7    686 8    1576 3    686 8    1703 0
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43900    GR 676.3  1965 7    674 8    1976 5    674 1    1990 8    675 9    2008 1    676 0    2031 3
44000    GR 678 3  2041 0    678 7    2060 1    679 5    2072 6    678 7    2090 3    678 5    2116 4
44100    GR 677 9  2147 1    676 7    2170 9    676 5    2182 3    677 6    2202 3    677 9    2235 2
44200    GR 677 3  2271 7    675 5    2288 6    675.5    2313.5    676 4    2342 3    677 8    2361 4
44300    GR 677.6  2396 0    680 3    2418 6    680 3    2432.6    676 3    2445 1    676.3    2445 1
44400    GR 674 4  2450 1    670 7    2455 1    668 8    2460 1    668 5    2465 1    666 8    2470 1
44500    GR 665 7  2475 1    665 8    2480 1    663 3    2485 1    663 2    2490 1    661 7    2495 1
44600    GR 661 4  2500 1    661 3    2505 1    662 0    2510 1    662 9    2515 1    663 9    2520 1
44700    GR 665 4  2525 1    667 3    2530 1    669 5    2535 1    672.6    2540 1    676 3    2548 3
44800    GR 683 8  2561 2    682 1    2580 5    681 5    2667 6    681 1    2753.0    681 1    2790 6
44900    GR 682 2  2806 2    685 2    2821 5    687 0    2840.4    689 1    2879 9    689 9    2910 2
45000    GR 690.5  2928 3    690 5    2928 3
45100    NH      7   0 100    307 6     0.045    642 6     0 090    686.9     0.030    767 4     0 100
45200    NH 830 9   0 050    1383 6     0 100   1648 1
45300    X1419 94      60     686 9    767 4      850.      500       950.
45400    GR 688 6   190 2    686 7     214 7    684 6     236.5    683.0     254.1    683 8     307.6
45500    GR 683 4   350 0    683 1     394 2    682.5     446.1    682.2     494.9    681 8     534.5
45600    GR 681 2   571.4    681.2     611.6    681.3     642.6    682 5     670.4    676.4     686 9
45700    GR 673.8   691 9    672.2     696.9    670 4     701 9    668 9     706.9    667.9     711.9
45800    GR 667.7   716 9    667.0     721 9    666.8     726 9    666.5     731 9    666 6     736 9
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39300	GR 686 5	991 0	686 3	1063.1	684 4	1125 9	679 9	1149 4	678 8	1226 4
39400	GR 678 8	1286 8	680.0	1330 3	681 0	1405 0	681 5	1450.0	681 5	1450 0
39500	GR 681 5	1462 0	676 6	1464.0	671 1	1474 0	666 7	1484 0	665 7	1494 0
39600	GR 665 2	1504 0	665 2	1514 0	665 5	1524 0	666 5	1534 0	668 0	1544 0
39700	GR 671 9	1554 0	676 6	1564 0	681 4	1566 0	681 4	1579 6	681 4	1579 6
39800	GR 680 9	1612 5	682 9	1639 6	682 9	1727 9	682 8	1837 5	681 9	1955 2
39900	GR 681 6	2057 2	681 1	2116.0	681 3	2153 0	681 9	2163 9	684 5	2195 2
40000	GR 686 2	2224 9	689 0	2253.9	692 1	2274 6	695 2	2285 2	696 3	2302 7
40100	NH 6	0.100	1149 4	0 055	1462 0	0.030	1566 0	0 090	1639 6	0 035
40200	NH2057 2	0.100	2302 7							
40300	X1418 34	45	1462.0	1566.0	10	10.	10			
40400	X2			688 4	689 4					
40500	GR 697 6	878 3	688.3	878 7	687 8	937 3	687.4	967 9	687 4	968 3
40600	GR 686 5	991 0	686 3	1063 1	684 4	1125 9	679 9	1149 4	678 8	1226 4
40700	GR 678 8	1286 8	680 0	1330 3	682 7	1405 0	689 4	1450 0	681 5	1450.0
40800	GR 681 5	1462 0	676 6	1464 0	671 1	1474 0	666 7	1484 0	665 7	1494 0
40900	GR 665 2	1504 0	665 2	1514.0	665 5	1524 0	666 5	1534 0	668 0	1544 0
41000	GR 671 9	1554 0	676 6	1564 0	681 4	1566 0	681 4	1579 6	689 4	1579 6
41100	GR 680 9	1612 5	682 9	1639 6	682 9	1727 9	682 8	1837 5	681 9	1955 2
41200	GR 681 6	2057.2	681 1	2116 0	681 3	2153 0	681 9	2163 9	684 5	2195 2
41300	GR 686 2	2224 9	689 0	2253 9	692 1	2274 6	695 2	2285.2	696 3	2302 7
41400	NH 6	0 100	1149 4	0 055	1462 0	0 030	1566 0	0 090	1639 6	0 035
41500	NH2057 2	0 100	2302 7							
41600	X1418 35	0	0	0	6	6	6			
41700	X2			688 4	689.4					
41800	NH 6	0 100	1149 4	0.055	1462 0	0 030	1566 0	0 090	1639 6	0 035
41900	NH2057 2	0 100	2302 7							
42000	X1418 36	45	1462 0	1566 0	10	10	10.			
42100	GR 697 6	878 3	688 3	878 7	687 8	937 3	687 4	967 9	687 4	968 3
42200	GR 686 5	991 0	686 3	1063 1	684 4	1125 9	679 9	1149 4	678 8	1226 4
42300	GR 678 8	1286 8	680 0	1330 3	681 0	1405 0	681 5	1450 0	681 5	1450 0
42400	GR 681 5	1462 0	676 6	1464.0	671 1	1474 0	666 7	1484 0	665 7	1494 0
42500	GR 665 2	1504 0	665 2	1514 0	665 5	1524 0	666 5	1534 0	668 0	1544 0
42600	GR 671 9	1554 0	676 6	1564 0	681 4	1566 0	681 4	1579 6	681 4	1579 6
42700	GR 680 9	1612 5	682 9	1639 6	682 9	1727 9	682 8	1837 5	681 9	1955 2
42800	GR 681 6	2057 2	681 1	2116 0	681 3	2153 0	681 9	2163.9	684 5	2195 2
42900	GR 686 2	2224 9	689 0	2253.9	692 1	2274 6	695 2	2285 2	696 3	2302 7
43000	NH 6	0 100	1149 4	0 055	1462 0	0 030	1566 0	0.090	1639 6	0 035
43100	NH2057 2	0 100	2302 7							
43200	X1418 40	0	0	0	40	40	40			
43300	NC			0 1	0 3					
43400	NH 7	0 100	1824 3	0 035	1943.1	0.100	2445 1	0 030	2548 3	0.090
43500	NH2580 5	0 035	2753 0	0 100	2928 3					
43600	X1418 99	67	2445.1	2548 3	700	700	700			
43700	GR 689 1	1441 6	688 5	1466 0	687 9	1513 7	686 8	1576 3	686 8	1703 0
43800	GR 685 8	1824 3	685 8	1878 6	684 0	1910 2	682 7	1943 1	680 6	1956 3
43900	GR 676 3	1965 7	674 8	1976 5	674 1	1990 8	675 9	2008 1	676 0	2031 3
44000	GR 678 3	2041 0	678 7	2060 1	679 5	2072 6	678 7	2090 3	678 5	2116 4
44100	GR 677 9	2147 1	676 7	2170 9	676 5	2182 3	677 6	2202 3	677 9	2235 2
44200	GR 677 3	2271 7	675 5	2288 6	675.5	2313 5	676 4	2342 3	677 8	2361 4
44300	GR 677 6	2396 0	680 3	2418.6	680 3	2432.6	676 3	2445 1	676 3	2445 1
44400	GR 674 4	2450 1	670 7	2455 1	668 8	2460 1	668 5	2465 1	666 8	2470 1
44500	GR 665 7	2475 1	665 8	2480 1	663 3	2485 1	663 2	2490 1	661 7	2495 1
44600	GR 661 4	2500.1	661 3	2505 1	662 0	2510 1	662 9	2515 1	663 9	2520 1
44700	GR 665 4	2525 1	667 3	2530 1	669 5	2535 1	672.6	2540 1	676 3	2548 3
44800	GR 683 8	2561 2	682 1	2580 5	681 5	2667 6	681.1	2753 0	681 1	2790 6
44900	GR 682 2	2806 2	685 2	2821 5	687 0	2840 4	689 1	2879 9	689 9	2910 2
45000	GR 690 5	2928 3	690 5	2928 3						
45100	NH 7	0 100	307 6	0.045	642 6	0 090	686 9	0 030	767.4	0 100
45200	NH 830 9	0 050	1383 6	0 100	1648 1					
45300	X1419 94	60	686.9	767.4	850	500	950			
45400	GR 688 6	190 2	686 7	214.7	684 6	236 5	683 0	254.1	683 8	307 6
45500	GR 683 4	350.0	683.1	394.2	682.5	446.1	682 2	494 9	681 8	534.5
45600	GR 681 2	571 4	681 2	611 6	681 3	642.6	682.5	670 4	676 4	686 9
45700	GR 673 8	691 9	672 2	696.9	670 4	701 9	668 9	706.9	667.9	711.9
45800	GR 667 7	716 9	667 0	721.9	666.8	726 9	666.5	731.9	666 6	736 9

52500	GR 682 1	1752 5	352 6	1845 3	681 9	1916 6	681 4	1970 2	682.1	2051.6	
52600	GR 681 0	2106 8	680 2	2147.2	681 9	2253 8	681 6	2330 1	681 0	2376 7	
52700	GR 681 0	2458 1	681 6	2498 8	683 5	2550 1	685 5	2597 2	683 6	2661 3	
52800	GR 682 8	2697 7	681 3	2760 8	681 2	2809 5	680 9	2864 2	681 4	2909.2	
52900	GR 684 0	2915.2	681.1	2929.4	676 2	2944 5	676 2	2944 9	680 7	2962.2	
53000	GR 682.4	2988.2	682 0	3010 9	679 7	3047 4	682 3	3076 2	684 5	3096.0	
53100	GR 689 2	3134 6									
53200	NH 6	0 080	1447 5	0.030	1522.3	0 080	1558 7	0 050	1609 4	1 000	
53300	NH4052 7	0 050	4237.1								
53400	X1427 26	81	1447.5	1522 3	1900	200	1800				
53500	GR 686 7	1441 6	676 3	1447 5	674 1	1452 5	672 1	1457 5	670 7	1462 5	
53600	GR 669 8	1467.5	669 0	1472 5	668 2	1477 5	666 9	1482 5	666 3	1487 5	
53700	GR 665 6	1492 5	665 5	1497 5	666 4	1502 5	669 2	1507 5	671 4	1512 5	
53800	GR 673 1	1517 5	676.3	1522 3	679 7	1526.8	680 7	1555 1	685 3	1558 7	
53900	GR 683 1	1567 5	681 0	1575 1	680 8	1609 4	680 8	1674 4	682 0	1738 3	
54000	GR 682 4	1824 1	682 3	1911 0	682 3	2013 9	682.3	2111 7	682 3	2198 4	
54100	GR 682 6	2288 1	682 1	2361 5	682 1	2410 5	683 5	2460 4	684 2	2498 5	
54200	GR 683 2	2547 6	683 2	2638 4	682 0	2757 2	683 4	2865 6	682 1	2988 3	
54300	GR 679 5	3040 0	679 7	3052 5	683 4	3070 5	683 4	3164 2	683 6	3257 1	
54400	GR 683 6	3257 4	683 5	3339 4	683 2	3441 3	682 3	3523 7	682 3	3575 3	
54500	GR 683 7	3629 2	685 8	3677 1	687 0	3740 2	687 0	3804.9	686 3	3828 6	
54600	GR 684 2	3863 9	682 6	3905 2	681 5	3974 2	681 2	4052 7	684 7	4055 9	
54700	GR 684.3	4071 7	682 1	4084 4	680 8	4100 6	678 1	4109 7	681 1	4119 3	
54800	GR 682 7	4134 0	682 8	4160.9	682 7	4193 9	683 4	4205 8	683 7	4222 4	
54900	GR 687.5	4229 6	688 9	4237 1	688 9	4306 9	689 1	4395 7	689 1	4497.6	
55000	GR 688.7	4536 8	688 6	4608 2	688 9	4680 8	689 7	4774 7	690 6	4817 7	
55100	GR 696 3	4818 2									
55200	NH 5	0 050	2479.8	0 090	2552 0	0.030	2637 4	0 070	2677 6	0 050	
55300	NH3442 0										
55400	X1429 59	87.	2552.0	2637 4	1200	600	2330				
55500	GR 688 0	450.0	686.0	475 0	684 0	500.0	684 0	650 0	683 0	750 0	
55600	GR 680 0	1000 0	681 0	1000 0	681 0	1028 9	681 6	1069 0	681 3	1090 8	
55700	GR 680 3	1122 8	678.1	1150 1	678 1	1190 0	678 1	1245 0	678 1	1302 1	
55800	GR 678 1	1354 5	678 2	1412 5	678 4	1445 5	679 1	1467 1	680 1	1504 0	
55900	GR 681 1	1539 4	681 0	1615 8	681 4	1666 4	680 7	1716 3	680 4	1764 7	
56000	GR 680 2	1795 3	679 8	1834 3	680 0	1876 7	681 0	1916 9	681 7	1955.9	
56100	GR 682 3	1994 1	682 7	2041 8	682 7	2070 1	682 7	2108 1	681 9	2134 8	
56200	GR 680 5	2163 3	679 7	2188 9	679 7	2216 7	680 0	2249.3	681 1	2275 1	
56300	GR 682 0	2293 7	682 7	2316 4	683 2	2337 2	683 3	2363 4	682 2	2383 5	
56400	GR 681 1	2405 7	680 9	2426 8	680 1	2443 0	680 8	2469 4	681 6	2479 8	
56500	GR 684 4	2497 0	679 4	2519 6	679 4	2544 4	676 3	2552 0	674 4	2557 0	
56600	GR 672 1	2562 0	670 7	2567 0	670 8	2572 0	670 8	2577 0	671 0	2582 0	
56700	GR 671 0	2587 0	671 0	2592 0	670 9	2597 0	670 8	2602 0	670 8	2607 0	
56800	GR 670 7	2612 0	671 0	2617 0	671 1	2622 0	672 2	2627 0	672 8	2632 0	
56900	GR 676 3	2637 4	679 2	2644 1	682 6	2664 2	684 6	2677 6	684 7	2695.3	
57000	GR 683 4	2701 2	683 4	2706 7	685 6	2717 4	686 3	2749 7	687 3	2749 7	
57100	GR 688 6	2779 2	689.6	2827 7	689 5	2870 6	689 1	2928 2	689 6	2994 0	
57200	GR 690 5	3038.4	690 8	3094 0							
57300	NH 4	0 090	2445 9	0 030	2533 3	0 070	2556 7	0.050	2958 1		
57400	X1430 81	80	2445.9	2533 3	150	1300	1220				
57500	GR 688 0	150 0	684.0	450 0	684 0	500 0	683 0	800.0	680 0	850 0	
57600	GR 679 0	1000 0	678.1	1000.0	678 2	1014 8	680 2	1041 3	679 6	1087 2	
57700	GR 679 6	1131 6	678 3	1169 6	677 8	1218 0	677 8	1261.9	677 8	1317 1	
57800	GR 677 9	1362 7	678 7	1393 4	678 9	1439 9	679 5	1470 3	680 4	1496 6	
57900	GR 680 4	1527 8	680 1	1561.8	680 0	1575 4	681 2	1601 8	681 8	1627 8	
58000	GR 680 2	1651 4	679 0	1683 8	678 9	1719 7	678 5	1776 9	678 1	1819 7	
58100	GR 678 1	1861 8	678 8	1888 2	680 6	1916 2	682 7	1940 1	682 9	1978.9	
58200	GR 682 9	2019 3	683.3	2062 1	682 6	2111 7	681 9	2156 0	681 2	2193 7	
58300	GR 680 8	2237 2	680 8	2284 8	681 6	2315 3	682 5	2345 7	683 0	2368 9	
58400	GR 683 7	2389 7	684 1	2411 7	681 6	2428 4	676 3	2444 5	676 3	2444.5	
58500	GR 676 3	2445 9	674 1	2450 9	672 2	2455 9	671 5	2460 9	670 8	2465.9	
58600	GR 670 2	2470.9	669 8	2475 9	669 6	2480 9	669 3	2485 9	668 6	2490 9	
58700	GR 668 5	2495 9	668 8	2500 9	669 1	2505 9	669 5	2510 9	670 3	2515 9	
58800	GR 671.4	2520 9	673 2	2525 9	676 3	2533 3	680 0	2537 0	680 9	2546 9	
58900	GR 682 7	2556 7	686 4	2559 7	686 4	2574 6	686 4	2575 0	686 4	2575 0	
59000	GR 686 6	2612 6	687 1	2698 8	688 2	2779.8	688.6	2861 6	688.7	2958 1	

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59100    EJ
59200    T1
59300    T2       VILLAGE OF BLISSFIELO   RIVER RAISIN
59400    T3       RIVER RAISIN, BLISSFIELO  , 1981 FLOOD
59500    J1     0       3       0       0 0 00030       0       -1       0  680
59600    J22            0      -1       0       0   -2 13
59700    T1
59800    T2
59900    T3
60000    J1     0       4       0       0 0 00030       0       -1       0  680
60100    J23            0      -1       0       0   -2 13
60200    T1
60300    T2
60400    T3
60500    J1     0       5       0       0 0 00030       0       -1       0  680
60600    J24            0      -1       0       0   -2 13
60700    T1
60800    T2
60900    T3
61000    J1     0       6       0       0 0 00030       0       -1       0  680.
61100    J25            0      -1       0       0   -2 13
61200    T1
61300    T2
61400    T3
61500    J1     0       7       0       0 0 00030       0       -1       0  680.
61600    J26            0      -1       0       0   -2 13
61700    T1
61800    T2
61900    T3
62000    J1      8                                                          683 38
62100    J27            0      -1       0       0   -2 13
62200    T1
62300    T2
62400    T3
62500    J1     0       9       0       0 0 00030       0       -1       0  680
62600    J215            -1
62700
62800
62900
63000    ER
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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED AUG 1977
  ERROR CORR -  01,02
  MODIFICATION -  50,51,52,53
*************************************************


C
T1      HUD FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS
T2      VILLAGE OF BLISSFIELD   RIVER RAISIN
T3      RIVER RAISIN, BLISSFIELD      FLOOD RATING CURVE

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0         2         0         0   0 000300      0 00      -1 0        0.   683 380     0 000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

      1 000     0 000    -1 000     0 000     0 000    -2 130     0 000     0 000     0 000     0 000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    200 000     0 000     0 000     0 000     0 000     0 000     0 000     0 000     0 000     0 000

NC      0 080     0 080     0 030     0 100     0 300     0 000     0 000     0 000     0 000     0 000
QT      8 000  3000 000  4000 000  5000 000  6000 000  7000 000  8000 000  9000 000 10000 000     0 000
NH      5 000     0 050   449 800     0 100   513 400     0 030   605 800     0.080   944 400     0 050
NH   1060 100     0.000     0 000     0 000     0 000     0 000     0 000     0 000     0 000     0.000


        CROSS SECTION BB    1981 FLOOD IS ELEV 683 38

X1    398 070    61 000   513 400   605 800     0 000     0 000     0 000     0.000     0 000     0 000
X3      0 000     0 000     0 000     0 000     0 000  1060 100     0 000     0 000     0 000     0 000
GR    683 700   279 000   683 100   320 100   683 100   320.100   683 100   320.100   682 300   353 500
GR    680 600   368 900   680 700   405 200   680 700   427 700   680 300   434 000   680.300   445 100
GR    681 200   449 800   680 100   461 700   677 000   477 500   673 300   485 800   671 000   497 600
GR    669 800   503 100   666 300   513.400   663 800   518.400   662 500   523 400   661 400   528 400
GR    660 800   533 400   659 600   538 400   659 500   543.400   659 800   548 400   660 200   553 400
GR    661 300   558 400   661 900   563 400   660 600   568 400   660 100   573 400   660 900   578 400
GR    661 500   583 400   662.000   587 400   662 000   593 400   663 600   598 400   666.300   605 800
GR    671 900   618 400   674 200   630 700   677 600   639 000   677 200   669 800   676 300   703 700
GR    674 800   745 500   674 300   783 400   673.400   849 700   673 400   894 300   672 400   944 400
GR    672 300   979 900   672 300  1011.100   673.200  1032 800   675 800  1047 400   680 200  1060 100
GR    679 500  1105 900   679 100  1178 000   679 100  1291 300   679 400  1405 700   680 600  1491 700
GR    680 600  1587 300   681 000  1673 300   680 300  1744 600   680.300  1797 100   680 200  1833.000
GR    688 000  1833 000     0 000     0 000     0 000     0 000     0.000     0 000     0 000     0 000
NH      4 000     0.050  1463 400     0 080  1475 000     0 030  1541 500     0 080  1591 100     0 000


        CROSS SECTION CC

X1    399 300    42 000  1475 000  1541 500  1250 000  1200.000  1230 000     0 000     0 000     0 000
GR    685 500   270 700   685 400   330 100   684 400   396 600   684 400   476 400   683 200   539 800
GR    680 600   590 800   679 100   630 800   677 900   666 400   676 000   709 400   676 000   756 000
GR    675 600   782 800   674 000   811 900   675 200   845 900   675 200   911 100   674 800   956 700
GR    673 900  1003 600   673 600  1081 000   673.700  1129 200   675 600  1163 500   676 700  1210.100
GR    677 200  1271 700   677 600  1323.100   677 000  1377 800   677 000  1423 600   676 300  1463 400
GR    666 500  1475 000   664 200  1480 000   661 800  1485 000   661.000  1490 000   660 500  1495 000
GR    660 300  1500 000   659 800  1505 000   659 900  1510 000   660 500  1515.000   660 900  1520 000
GR    661 000  1525 000   663 000  1530 000   665 100  1535 000   666 500  1541.500   676 100  1557 200
GR    688 600  1582 800   689 100  1591 100     0 000     0.000     0 000     0 000     0.000     0 000
NH      6.000     0 050  1719 600     0 100  1775.800     0 030  1848.300     0 100  2002.100     0 045
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NH	2193 000	0 070	2346 500	0.000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION DD

X1	400 500	60 000	1775 800	1848.300	800 000	1250 000	1200 000	0 000	0 000	0 000
GR	684 300	408 600	684 300	496.300	684 400	590 100	683 400	630 200	682 000	687 800
GR	682 300	782 000	682 400	869 000	682 100	938 100	682 000	1007 200	682 000	1052 500
GR	680.100	1096.200	678 600	1149 900	678 600	1180 800	679 300	1235 500	679 200	1277 300
GR	678 300	1314 800	677 500	1348 700	677 100	1384.500	679 300	1416 000	679 500	1475 000
GR	679 700	1540 700	679 500	1588 300	680 100	1624 600	680 200	1671 000	680 400	1719 600
GR	680 400	1754 000	666 700	1775 800	665 100	1780 800	663 900	1785 800	663 500	1790 800
GR	663 200	1795 800	662 700	1800 800	662 600	1805 800	662.400	1810 800	662 500	1815 800
GR	663 100	1820 800	663 900	1825 800	664 700	1830 800	664 700	1835 800	664 900	1840 800
GR	666 700	1848 300	674.200	1863 700	676 400	1902 600	680 000	1922 900	679 200	1949 500
GR	678 200	2002 100	677 200	2078 100	675 800	2141 100	674 700	2193 000	674 000	2239 700
GR	673 600	2277 400	673 700	2285.500	679 500	2298 700	683 400	2310 700	686 300	2323 600
GR	687 000	2331 400	687 200	2346 500	687 200	2346 500	687 200	2346 500	689 100	2346 500
NH	5 000	0 050	2110 000	0 100	2140 000	0 030	2212 500	0 100	2242 000	0 050
NH	2472 000	0.000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION EE

X1	401 200	30 000	2140 000	2212 500	300 000	700 000	700 000	0 000	0 000	0 000
GR	686 000	0 000	684 000	650 000	680 000	1210 000	679 000	1250 000	680 000	1290 000
GR	681 000	1350 000	680 000	1420 000	679 000	1470 000	680 000	1525 000	680 500	1650 000
GR	680 000	1770 000	680 000	2110 000	666 700	2140 000	665 100	2145 000	663 900	2150 000
GR	663 500	2155 000	663 200	2160 000	662 700	2165 000	662 600	2170 000	662 400	2175 000
GR	662 500	2180 000	663 100	2185 000	663 900	2190 000	664 700	2195 000	664 700	2200 000
GR	664 900	2205 000	666 700	2212 500	680 000	2242 000	688 000	2272 000	688 000	2472 000
NH	7 000	0 050	1658 600	0 080	1742 000	0 030	1871 000	0 080	1939 400	0 050
NH	2681 700	0 070	2764 200	0 035	2885 200	0 000	0 000	0 000	0 000	0 000

CROSS SECTION A

X1	402 050	94 000	1742 000	1871 000	300 000	800 000	850 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	0 000	0 000	2670.000	0 000	0 000	0 000	0 000
GR	694 900	290 700	685 000	290.700	685 000	291 100	685 000	291 100	684 600	344 400
GR	684 200	391 900	683 800	411 600	684 500	469 300	684 800	551 900	684 100	604 000
GR	683 200	642 000	682 700	687.000	683 700	749 800	682 900	817 400	683 200	873 900
GR	683 100	920 100	683 100	943 800	681 900	985 800	681 000	1056 300	681 200	1115 900
GR	688 000	1183 000	682 500	1247 300	680.700	1311 500	679 600	1358 900	679 500	1420 400
GR	679 500	1459 300	679 700	1507 800	679 400	1548 200	678 800	1583 700	678 900	1625 300
GR	679.100	1658.600	679 500	1684 700	680 300	1702 000	680 300	1723 100	666 900	1742 000
GR	665 900	1747 000	665 400	1752 000	664 400	1757 000	663 700	1762 000	664 900	1767 000
GR	665 700	1772 000	664 900	1777 000	665 500	1782 000	665 700	1787 000	665 900	1792 000
GR	665 400	1797 000	665 000	1802 000	664 700	1807 000	664 900	1812 000	664 200	1817 000
GR	664 100	1822 000	663 700	1827 000	663.600	1832 000	663 400	1837 000	663 200	1842 000
GR	662 500	1847 000	662 700	1852.000	663 800	1857 000	664.400	1862 000	665 700	1867 000
GR	666 900	1871 000	677 000	1882 300	679 300	1908 600	678 100	1939 400	677 400	1980 500
GR	676 400	2040 000	676 300	2097 800	676 300	2168 600	676 600	2235 000	669 800	2475 900
GR	671 600	2504 000	674 200	2548 500	676 100	2585 000	675 800	2635.400	675 000	2681 700
GR	672 600	2720 900	671 100	2764.200	670 600	2789 600	670 900	2815 100	673.100	2831 300
GR	680 000	2852 600	682 900	2865.700	684 000	2885 200	682 200	2909.200	683 100	2918 000
GR	683.100	2930 900	681.900	2974 200	682 200	3020 000	682 700	3072 400	683 600	3137 900
GR	684 300	3192 000	685 700	3236 400	687 300	3287 300	689 100	3392 000	0 000	0 000
NH	5 000	0 050	815 300	0.080	956 100	0 030	1026 200	0 100	1048 000	0 050
NH	2216 600	0 000	0 000	0 000	0.000	0 000	0.000	0 000	0 000	0 000

CRDSS SECTIDN B 1981 FLDOD IS ELEV 686 38

X1	403.750	58 000	956 100	1026.200	700 000	1800 000	1700 000	0.000	0 000	0.000
GR	690 000	232 400	688 700	232 800	696 800	232 800	696 800	314.800	684 800	314.800

GR	684 800	314 800	684 800	314 800	684 300	329 400	683 800	372 500	684 300	420 500
GR	684 900	459 600	684 300	524 300	684 100	567 700	684 100	613.600	684 100	657 900
GR	683 900	713 000	682 900	744 100	679 600	760 100	676 800	779 700	675.900	794.900
GR	675 900	815 300	675 700	927 400	673 600	939 800	667 100	955 700	667.100	956.100
GR	667 100	956 100	665 500	961 100	664 800	966 100	665 200	971 100	664 300	976 100
GR	663 400	981 100	662 900	986 100	663 300	991 100	662 600	996 100	662.400	1001 100
GR	662 100	1006 100	662 200	1011 100	662 700	1016 100	663 700	1021 100	667 100	1026 200
GR	679.700	1048 000	678 700	1065 000	678 300	1110.600	677 700	1150 700	676 600	1188 700
GR	675.600	1216 300	675 600	1226 400	674 400	1250.500	676 200	1271 800	677 500	1311 800
GR	678 400	1362 700	678 200	1492 600	678 000	1780 000	679 600	2150 000	680 000	2275 000
GR	684 000	2320 000	684 600	2425 000	688 000	2660 000	0 000	0 000	0 000	0 000
NH	7 000	0 050	610 800	0 040	1041 300	0 050	1370 600	0 080	1477 000	0 030
NH	1541 000	0 100	1642 500	0 050	2592 000	0 000	0 000	0.000	0 000	0 000

CROSS SECTION C

X1	404 850	75 000	1477 000	1541 000	1150 000	500 000	1100 000	0 000	0 000	0 000
GR	687 200	0 000	686 400	0 600	686 400	68 900	687.200	115 500	687 300	156 000
GR	686 400	210 300	686 800	246 500	687 000	291 700	686 500	345 100	686 600	401 200
GR	686 200	448 500	686 700	490 600	686 500	537 700	685 300	573 700	684 900	610 800
GR	687 000	1041 300	686 000	1108 600	685 900	1147 000	686 600	1184 400	686 800	1230 600
GR	686 800	1276 600	686 800	1323 800	686 600	1370 600	686 600	1413 400	687 400	1421 400
GR	687 100	1428 900	687.100	1429.300	687 100	1429 300	686 700	1442 000	687 100	1446 200
GR	667 200	1477 000	663 500	1482 000	662 600	1487 000	662 600	1492 000	662 600	1497 000
GR	662.600	1502 000	662 400	1507 000	662 400	1512 000	662 600	1517 000	662 800	1522 000
GR	663 300	1527 000	664 700	1532 000	667.200	1541 000	681 200	1599 100	680 400	1625 200
GR	679 900	1642.500	678 300	1679.100	677 400	1705 500	677 400	1734 400	675 300	1765 300
GR	675.500	1788 200	675 300	1821 200	675 900	1850 300	677 100	1875 600	678 300	1900 000
GR	679.000	1929 300	679 000	1938 400	679 200	1982 700	679 800	2031 900	679 600	2091 000
GR	679 200	2171 000	679 400	2237 000	677 900	2290 900	675 800	2324 600	675 200	2360 500
GR	675 400	2387 300	676 000	2400 000	680 000	2525 000	680 500	2650 000	680 000	2955 000
GR	679 600	3150 000	680 000	3275 000	684 000	3315 000	684 400	3460 000	688 000	3650 000
NH	4 000	0 050	1278 700	0 090	1385 600	0 030	1466 800	0 100	1483 600	0 000

CROSS SECTION D

X1	406 450	57 000	1385 600	1466 800	1680 000	500 000	1600 000	0 000	0 000	0 000
GR	686 200	466 800	684 000	478 600	681 100	496 200	679 400	532 600	678.400	573 000
GR	677 600	668.700	677 600	730 700	679 100	779 800	678 200	851 400	677 000	907 000
GR	678 900	948 600	681 100	990 400	680 600	1071 200	680 600	1131 600	680 000	1184 800
GR	679 200	1242 400	679 200	1278.700	680 000	1293.400	680 200	1309 900	678.100	1318 900
GR	678 400	1338.900	672 100	1372 100	667 400	1385 600	665.900	1390 600	664 300	1395 600
GR	662 100	1400 600	659 900	1405.600	657 900	1410 600	656 900	1415 600	656 400	1420 600
GR	655 800	1425 600	655 400	1430 600	655 200	1435 600	655 400	1440 600	655 600	1445 600
GR	656 800	1450 600	659 600	1455 600	663 900	1460 600	667 400	1466 800	683 400	1483 600
GR	681 800	1505 700	681 700	1519 500	680 300	1553.700	681 300	1596 500	681 300	1687 700
GR	681 200	1779 500	680 500	1842 700	680 900	1886 900	683 300	1907 800	684 400	1930.700
GR	685 000	1991 600	684 300	2039 000	684 400	2071.400	684 400	2071 700	685 000	2113 700
GR	685 500	2137 000	694 200	2137 400	0 000	0 000	0 000	0 000	0 000	0 000
NH	4 000	0 100	27.100	0 030	116 900	0 100	209 300	0 050	1493 200	0 000

CROSS SECTION G 1981 FIOOD IS ELEV 686 5 AT STP

X1	410 070	46 000	27 100	116 900	3500 000	2000 000	3500 000	0 000	0 000	0 000
GR	688 000	0 000	677 300	17 500	668 000	27 100	666 500	32 100	665 500	37.100
GR	665 200	42 100	665 100	47.100	665 000	52 100	665 000	57 100	665 000	62 100
GR	664 800	67 100	664 800	72 100	664 700	77 100	664 700	82 100	665 400	87 100
GR	666 400	92 100	666 800	97.100	667 200	102 100	667 500	107 100	668 000	116.900
GR	679 000	147 900	679 100	209 300	679 100	328 200	679 800	444 700	680 600	556 800
GR	680.600	633 000	680 400	701 400	679 000	790 100	678 400	894 600	678.400	998 500
GR	678 300	1053.400	678 900	1105 900	679 300	1168.300	678 500	1211 000	677 800	1268 600
GR	677 000	1305.100	678 400	1343 000	679 300	1381 700	679.400	1427 000	679 400	1473 300
GR	679 400	1491.200	680.000	1493 200	684 000	1840 000	685.000	2250.000	686 000	2830 000

GR	688 000	3200 000	0 000	0.000	0 000	0 000	0 000	0 000	0 000	0 000
NH	5 000	0 050	1823.500	0 080	1867 400	0.030	1938 800	0 070	1961 200	0 050
NH	2501 900	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION I

X1	412 950	90 000	1867 400	1938 800	1700 000	1000 000	2900 000	0 000	0 000	0.000
GR	688 400	0 000	688 300	0 000	688 200	29 300	688 200	29 300	688 200	29 700
GR	708 800	29 700	708 800	68 800	688 600	69 300	688 700	69 300	688 700	69 300
GR	688 900	107 200	687 800	148 900	686 100	189 000	684 200	244 400	683 000	279 000
GR	682 500	333 100	681.900	399.000	681 800	442 000	681 800	542 500	681 300	662 900
GR	680 200	751 300	679 400	793 700	680 000	867 700	678 900	923 500	677 900	942 100
GR	679 000	978 500	679 500	1027 600	679 300	1086 500	678 300	1129 300	679 000	1179 200
GR	678 800	1239 700	678 900	1281 500	678 200	1342 800	679 200	1391 200	679 200	1453 800
GR	679 700	1519 200	680 100	1567 200	679 500	1611 300	680 600	1666 400	680 200	1714.100
GR	680 100	1740.800	680 000	1782 200	679 700	1814 900	680 600	1823 500	680 600	1823 500
GR	668 300	1867 400	667 200	1872 400	666 200	1877 400	665 700	1882 400	665 100	1887 400
GR	665 300	1892 400	664.900	1897 400	664 700	1902 400	664 700	1907 400	664 900	1912 400
GR	665 200	1917 400	665 400	1922 400	665 700	1927 400	668 300	1938 800	684 400	1961 200
GR	685 600	1990 800	685 600	1998.000	685 600	1998 800	685 700	2030 900	685 700	2032 500
GR	685 700	2049 300	686 000	2096 900	686 000	2097.500	688 800	2098 300	688 800	2148 100
GR	687 900	2148.600	687 900	2148 600	687 900	2148 600	685 100	2160 600	685 400	2226 800
GR	685 000	2290 200	685 500	2378 200	685 900	2438.200	686 300	2501 900	686 100	2563 700
GR	685 700	2632 900	685 600	2722 300	685 600	2820 900	686 300	2922 200	686 100	3010 400
GR	686 500	3110 000	686 100	3199 300	686.500	3273 300	689 000	3302 000	689 000	3302 000
NH	4 000	0 050	1410 000	0 080	1588 000	0 030	1689 400	0 080	1819 000	0.000

CROSS SECTION 50 FEET DOWNSTREAM FROM BLISSFIELD DAM

X1	413 910	28 000	1588 000	1689 400	850 000	900 000	960 000	0 000	0 000	0 000
GR	689 400	0 000	680 400	0 000	680 000	170 000	680 500	280 000	680 000	415 000
GR	676 700	520 000	680 000	680 000	680 000	1080 000	677 000	1410 000	676.500	1500 000
GR	676 300	1580 000	668 300	1588.000	667 200	1593 000	666.200	1598 000	665 700	1603 000
GR	665.100	1608 000	665 300	1613 000	664 900	1618 000	664 700	1623 000	664 700	1658 000
GR	664 900	1663 000	665 200	1668 000	665 400	1673 000	665 700	1678 000	668.300	1689 400
GR	680 000	1699 000	684 000	1719 000	688 000	1819 000	0 000	0 000	0 000	0 000
NH	4 000	0 050	1080 000	0 080	1580 000	0 030	1710 000	0 080	3320.000	0 000

CROSS SECTION AT BLISSFIELD DAM

X1	413 960	17 000	1580 000	1710 000	50 000	50 000	50 000	0 000	0 000	0 000
GR	689 400	0 000	680 400	0.000	680 000	170 000	680 500	280 000	680.000	415 000
GR	676.700	520 000	680 000	680 000	680 000	1080 000	677 000	1410 000	676 500	1500 000
GR	676 300	1580 000	676 300	1710.000	680 000	1720 000	684 000	1740 000	688 000	1840 000
GR	689 500	2340 000	688 000	3320 000	0 000	0 000	0 000	0 000	0 000	0 000
NH	4 000	0 050	2393 300	0 100	2461 200	0 030	2555 900	0 100	2570 100	0 000

CROSS SECTION 50 FEET UPSTREAM FROM BLISSFIELD DAM

X1	414 010	59 000	2461 200	2555 900	50 000	50 000	50 000	0 000	0 500	0 000
GR	688 400	650 000	688 200	679 300	688 200	679 700	688 600	719 300	688 900	757 200
GR	687 800	788 900	686.100	839 000	684 200	894 400	683 000	929 000	682 500	983 100
GR	680 400	1000 000	680 400	1000.000	679 300	1028 800	678 000	1058 300	677 400	1075 000
GR	677.400	1075 000	678 800	1094 900	679 100	1179.000	679 800	1278 200	680 300	1348 100
GR	679 000	1404 500	679 300	1488.400	679 800	1562 400	680 100	1624 000	679 700	1722 100
GR	680 300	1798 200	680 500	1909 900	680 500	1958 400	679 000	1985 800	679 000	2049 800
GR	679 500	2142 500	679 800	2186 200	680 600	2220 600	680 200	2292 400	679 600	2352 100
GR	678 800	2393 300	680.100	2409 400	680 000	2426 400	676 300	2461 200	675 100	2466 200
GR	673 000	2471 200	670 800	2476 200	669 400	2481 200	667 500	2486.200	666 900	2491 200
GR	666 400	2496 200	665 600	2501 200	666 100	2506 200	667 000	2511.200	668.100	2516 200
GR	668 600	2521 200	669 200	2526 200	669 900	2531 200	670 900	2536 200	672 400	2541 200
GR	673 300	2546 200	675.100	2551 200	676 300	2555 900	686 800	2570.100	0 000	0 000

NH	4 000	0 050	2393 300	0 100	2461 200	0 030	2555 900	0 100	2570.100	0 000

CROSS SECTION J

X1	414 600	54 000	2461 200	2555 900	300 000	650.000	590 000	0 000	0 000	0 000
GR	688 000	150 000	688 000	330 000	684 000	455 000	681.300	750 000	680 000	960 000
GR	680 400	1000 000	680 400	1000 000	679 300	1028 800	678 000	1058 300	677 400	1075.000
GR	677 400	1075 000	678 800	1094 900	679 100	1179 000	679 800	1278 200	680 300	1348 100
GR	679 000	1404 500	679 300	1488 400	679 800	1562 400	680 100	1624 000	679 700	1722 100
GR	680 300	1798 200	680 500	1909 900	680 500	1958 400	679 000	1985 800	679 000	2049 800
GR	679 500	2142 500	679 800	2186 200	680 600	2220 600	680 200	2292 400	679 600	2352.100
GR	678 800	2393 300	680 100	2409 400	680 900	2426 400	676 300	2461 200	675 100	2466 200
GR	673 000	2471 200	670 800	2476 200	669 400	2481 200	667 500	2486 200	666 900	2491 200
GR	666 400	2496 200	665 600	2501 200	666 100	2506 200	667 000	2511 200	668 100	2516 200
GR	668 600	2521 200	669 200	2526 200	669 900	2531 200	670 900	2536.200	672 400	2541 200
GR	673 300	2546 200	675 100	2551 200	676 300	2555 900	686 800	2570 100	0 000	0 000
NH	4 000	0 050	2128.600	0 080	2230 000	0 030	2333 900	0 070	2369 000	0 000

CROSS SECTION K

X1	415 620	66 000	2230 000	2333 900	850 000	1100.000	1020 000	0 000	0 000	0 000
GR	688 000	360 000	688 600	440.000	688 000	520 000	684 000	710 000	682 000	850 000
GR	681 500	1000 000	681 400	1000 400	682 400	1048 500	682 200	1066 800	681 500	1073 000
GR	684.000	1090 400	682 300	1114 100	681 200	1152 500	681 400	1185 900	680 800	1203 800
GR	680 500	1229.800	680 500	1270 100	680 500	1302 200	679 300	1328 100	678 800	1351 900
GR	679 600	1388 100	679 600	1418 300	679 600	1437 400	679 400	1465 500	679 400	1500 200
GR	680 100	1552 300	680 200	1596 800	679 700	1636 500	679.000	1667 900	677 700	1705 400
GR	677 200	1755 400	677 300	1807 600	677 400	1855 100	677 600	1905 200	678 100	1938 700
GR	678 500	1979 900	678 500	2016 200	679 200	2055 600	679 800	2095 900	679 900	2128 600
GR	680 300	2161 600	679 900	2188 000	678 900	2211 500	676 200	2230 000	674 200	2235 000
GR	672 200	2240 000	670 200	2245 000	668 700	2250 000	668 200	2255.000	667 500	2260 000
GR	667 300	2265 000	667 200	2270.000	668 500	2275 000	667 200	2280 000	667 200	2285 000
GR	667 100	2290 000	666 700	2295 000	665 900	2300.000	666 000	2305 000	666 600	2310 000
GR	667 600	2315 000	668 500	2320 000	670 900	2325 000	673 700	2330 000	676 300	2333 900
GR	691 200	2369 000	0 000	0 000	0 000	0.000	0 000	0 000	0 000	0.000
NH	5.000	0 100	418 700	0 070	723 800	0 030	837 800	0 070	891 700	0 100
NH	985.500	0.000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION L

X1	416 650	50 000	723 800	837 800	400 000	1100 000	1030 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	410 000	0 000	0 000	0 000	0 000	0 000	0 000
GR	681 300	0 000	681 300	0 000	682 000	44 900	682 000	46 100	692 600	47 700
GR	692 600	84 200	684 000	84 200	684 000	84 600	684 000	85 800	683.500	102 900
GR	682 500	119 100	682 500	143 300	682 600	171 900	682 600	171.900	682 500	207 600
GR	682 700	231.000	682 700	258 100	683 400	276 300	683 400	302 500	683 400	330 200
GR	683 600	354 800	683 700	375 100	682.500	418 700	682 800	442 600	682 300	453.300
GR	680 100	470.400	678 600	485 800	679 100	514 400	679 200	533 200	678 800	551 000
GR	678 800	580 700	678 500	609 700	678 000	631.200	678 900	655 900	679 800	685.100
GR	679 300	719 900	676 200	723 800	670 000	733 800	665 000	748 800	662 500	780 800
GR	665 000	812 800	670 000	827 800	676 200	837 800	686 700	858 000	687 100	891 700
GR	687 500	926 200	687 500	927 100	703 100	927 100	703 100	983 500	689 600	985 500
NH	4 000	0 100	1314 000	0 070	1406 000	0 030	1512 000	0.080	2101 200	0 000

CROSS SECTION M

X1	417 550	51 000	1406 000	1512 000	900 000	800 000	900.000	0 000	0 000	0 000
X3	0 000	0.000	0 000	1378 000	0.000	1558 800	0 000	0 000	0 000	0 000
GR	687 600	1314 000	687 300	1359 000	687 300	1388 000	676 300	1406 000	673 300	1411 000
GR	670 300	1416 000	667 700	1421 000	665 400	1426 000	664 600	1431 000	661 900	1436.000
GR	660 800	1441 000	660 400	1446.000	660 700	1451 000	661 700	1456 000	662 800	1461 000
GR	663 300	1466 000	664.300	1471.000	664 900	1476.000	665 600	1481 000	666.700	1486 000

GR	667 300	1491 000	668 500	1496 000	670 000	1501 000	671 300	1506 000	673 200	1511 000
GR	676.300	1512 000	685 000	1558 800	681 700	1579 300	680 500	1610 600	680 500	1627 500
GR	683 100	1636 600	682 300	1645 500	684 800	1657 100	684 900	1678 300	684 000	1693 800
GR	682 800	1712 900	683 600	1738 700	683 800	1778 100	686 100	1788 800	686 300	1819 500
GR	684 500	1901 700	684 100	1925 700	683 000	1943 900	681 000	1952 100	681 000	1981 500
GR	680 700	2002 100	681 700	2017 800	682 400	2044 200	682 500	2060 800	689 700	2079 200
GR	690 300	2101 200	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
NC	0 070	0 070	0 023	0 300	0.500	0 000	0 000	0 000	0 000	0 000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO RAILROAD BRIDGE

X1	417.590	0 000	0 000	0 000	40 000	40 000	40 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	1406 000	0 000	1558 800	0 000	0 000	0 000	0 000

CROSS SECTION AT DOWNSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

X1	417 600	54 000	1434 500	1581 500	10 000	10 000	10 000	0 000	0 000	0 000
X2	0 000	0 000	0 000	689 200	690 600	0 000	0 000	0 000	0.000	0 000
GR	696 300	0.000	696 300	0 400	690 100	0 400	690 500	56 100	690 800	126 300
GR	690 600	214 000	690 800	303.300	690 800	377 000	690 900	456 800	690.900	528 500
GR	690 900	599 000	690 900	688.200	691 200	765 500	691 400	847 400	691 400	847 400
GR	691 400	847 800	690 900	968 300	691 200	1095 800	691 300	1188 800	691 600	1263 500
GR	691 100	1326 100	691 100	1327 400	690 600	1422 900	690 600	1433 000	687.300	1433 000
GR	687 300	1434 500	677 200	1434 500	673 400	1450 000	672 200	1460 000	670 200	1470 000
GR	667 700	1480 000	667 800	1490 000	667 200	1500 000	667 600	1510 000	668 100	1520 000
GR	670 300	1530 000	670 700	1540 000	671 500	1550 000	672.700	1560 000	673 000	1570 000
GR	674 500	1581 500	687 300	1581 500	687 300	1583 000	690 600	1583 000	691.000	1648 400
GR	691 600	1731 500	691.700	1918 400	692.000	2004 000	691.800	2088 700	691.800	2159 600
GR	691 800	2232 900	692 200	2297 400	692.200	2338 200	696 200	2338 200	0 000	0 000

CROSS SECTION AT UPSTREAM FACE OF PENN CENTRAL RAILROAD BRIDGE

X1	417 620	0 000	0 000	0 000	20 000	20 000	20.000	0 000	0 000	0 000
X2	0 000	0 000	0 000	689 200	690 600	0 000	0 000	0 000	0 000	0 000

CROSS SECTION BETWEEN RAILROAD BRIDGE AND US 223 BRIDGE

X1	517 630	61 000	1420 500	1588 000	5 000	5 000	5 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	1442 000	0 000	1588 000	0 000	0 000	0 000	0 000
GR	696 200	0 000	688 000	0 000	688 000	103 300	687 200	183 800	686 000	273 500
GR	685 400	359 400	685 400	422 700	685 400	500 100	685 000	585 200	685 000	670 700
GR	685 200	762 200	685 700	838 600	686 400	905 100	686 800	994 200	687 500	1082 100
GR	688.100	1147 600	688 900	1217 700	688 900	1293 400	689 100	1312 300	689 100	1345 300
GR	689 100	1376 100	689 400	1404 300	693 200	1420 500	686 000	1420 500	679 000	1442 000
GR	676 200	1450 000	673 900	1460 000	672 000	1470 000	671 300	1480 000	669 900	1490 000
GR	666 700	1500 000	667 400	1510 000	667.800	1520 000	668 500	1530 000	669 200	1540 000
GR	671 200	1550 000	671 700	1560 000	673 600	1570 000	676 200	1580 000	678 000	1588 000
GR	686 000	1609 000	693 700	1609 000	689 700	1676 600	688 900	1786 900	688 900	1890 700
GR	688 900	1980 800	688 700	2100 100	688 700	2216 700	688 900	2281 200	689 500	2350 800
GR	690 800	2430.800	692.000	2513 000	692 100	2589 200	692 600	2636 100	692 600	2721 100
GR	692 200	2769 300	691 200	2819 500	691 000	2894 500	690 400	2954 700	690 400	3008 300
GR	696 300	3008 300	0 000	0.000	0 000	0 000	0 000	0 000	0 000	0 000

CRDSS SECTION AT DOWNSTREAM FACE OF US 223 (ADRIAN ST) BRIDGE

X1	417 630	67 000	1441 500	1588 000	5 000	5 000	5 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	1442 000	0 000	1588.000	0 000	0 000	0 000	0 000
GR	696.200	0 000	688.000	0 000	688 000	103 300	687 200	183.800	686.000	273 500
GR	685 400	359 400	685 400	422 700	685 400	500 100	685 000	585 200	685 000	670 700
GR	685 200	762 200	685 700	838.600	686.400	905 100	686 800	994 200	687 500	1082 100
GR	688 100	1147 600	688 900	1217 700	688 900	1293 400	689.100	1312 300	689 100	1345 300

GR	689 100	1376 100	689 400	1404 300	693 200	1420 500	686 000	1420 500	679 000	1442 000
GR	676 200	1450 000	673 900	1460 000	672 000	1470 000	671 300	1480 000	670 000	1489 000
GR	670.000	1489 000	669 500	1491 000	669 500	1491 000	666.700	1500 000	667 400	1510 000
GR	667 800	1520 000	668 500	1530 000	669 100	1539 000	669 100	1539 000	669 400	1541 000
GR	669 400	1541 000	671 200	1550 000	671 700	1560 000	673.600	1570.000	676 200	1580 000
GR	678 000	1588 000	686 000	1609 000	693 700	1609 000	689 700	1676.600	688 900	1786 900
GR	688 900	1890 700	688 900	1980 800	688 700	2100 000	688 700	2216.000	700688 900	2281 200
GR	689 500	2350 800	690 800	2430.800	692 000	2513 000	692 100	2589.200	692 600	2636.100
GR	692 600	2721 100	692 200	2769 300	691 200	2819 500	691 000	2894 500	690 400	2954 700
GR	690 400	3008.300	696 300	3008 300	0.000	0 000	0 000	0 000	0.000	0 000
SB	1 050	1 710	2 800	0 000	73 000	5 000	2045 000	1 930	0 000	0 000

CROSS SECTION AT UPSTREAM FACE OF US 223 (ADRIAN ST) BRIDGE

X1	417 680	0 000	0 000	0 000	55 000	55 000	55 000	0 000	0 000	0 000
X2	0 000	0 000	1 000	685 900	689 400	0 000	0 000	0 000	0 000	0.000
X3	0 000	0 000	0 000	1442 000	0 000	1588 000	0 000	0 000	0 000	0 000
NH	5 000	0 100	1413 800	0 080	1440 600	0 030	1550 300	0.080	1649 400	0 100
NH	2423 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 223 BRIDGE

X1	417 720	68 000	1440 600	1550 300	35 000	35 000	35 000	0 000	0 000	0.000
X3	0 000	0 000	0 000	1413 800	0 000	1633 000	0 000	0 000	0 000	0 000
GR	689 100	1263 000	687 600	1413 800	676 300	1440 600	673 000	1445 500	671 100	1450.500
GR	669 100	1455 500	668 500	1460 500	667 400	1465 500	666 800	1470 500	666 300	1475 500
GR	665 600	1480 500	665 200	1485 500	665 900	1490 500	665 100	1495 500	665 000	1500 500
GR	664 900	1505 500	665 200	1510 500	665 700	1515 500	667 500	1520 500	668 000	1525 500
GR	668 800	1530 500	670 600	1535 500	672 500	1540 500	676 300	1550 300	683 000	1567 100
GR	682 000	1580 700	682 000	1649 400	682 000	1690 700	685 200	1701 300	685 800	1741 700
GR	687 300	1766 100	687 600	1794.400	687 900	1826 600	687 900	1830 000	687 900	1832 400
GR	688 500	1896 000	688 500	1896.400	688 500	1897 300	685 600	1910 000	686 200	1955 200
GR	686 600	1957 600	686 600	1971 600	686 000	1973 200	686 000	2017 100	687 700	2020 000
GR	687 700	2021 400	687 700	2022.000	689 500	2112 600	689 500	2113 000	689 500	2113 400
GR	688 800	2146 000	688 500	2184 400	688 500	2184 400	687 200	2296 000	687 200	2296.500
GR	687 200	2297 100	687 200	2301 600	687 200	2301 600	687 200	2301 600	688 900	2327 000
GR	688 900	2327 000	688 900	2327 000	688 900	2344 300	691 200	2348 300	691 600	2378 300
GR	691 600	2378 700	691 600	2378 700	691 900	2423 000	0 000	0 000	0 000	0 000
NH	5 000	0 100	1413 800	0 080	1440 600	0 030	1550 300	0 080	1649 400	0 100
NH	2423 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION N 1981 FLODD IS ELEV 687 1

X1	417 740	0 000	0.000	0 000	20 000	20 000	20 000	0 000	0 000	0 000
X3	0 000	0 000	0 000	1413 800	0 000	1673 000	0.000	0 000	0 000	0 000
NC	0 080	0 080	0 030	0 100	0 300	0 000	0 000	0.000	0.000	0 000
NH	6 000	0 100	1149 400	0 055	1462.100	0 030	1563 900	0 090	1639 600	0 035
NH	2057.200	0 100	2302 700	0 000	0.000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION O

X1	418 290	63 000	1462 100	1563.900	600 000	700 000	550 000	0 000	0 000	0 000
GR	697 600	854 600	697 600	878 300	688 300	878 700	688 300	878 700	687 800	937 300
GR	687.400	967 900	687 400	968 300	686 500	991 000	686 300	1063.100	684 400	1125 900
GR	679 900	1149 400	678 800	1226 400	678 800	1286 800	680 000	1330 300	680 300	1405 800
GR	681 200	1440 400	681 200	1456 400	676 300	1462 100	673 600	1467 100	671.100	1472 100
GR	669 400	1477 100	669 700	1482 100	667 600	1487 100	666 300	1492 100	665.300	1497 100
GR	665 000	1502 100	665 200	1507 100	665 600	1512 100	666 300	1517 100	666 800	1522 100
GR	667 600	1527 100	668.500	1532 100	668.800	1537 100	670.800	1542 100	672 800	1547 100
GR	673 800	1552 100	673.900	1557 100	674 800	1562 100	676 300	1563.900	679.800	1577.700
GR	682 200	1604 900	682 900	1639 600	682 900	1639 600	682 900	1639.600	682 900	1727 900
GR	682 800	1837 500	681 900	1955 200	681.600	2057.200	681.100	2116 000	681 300	2153 000

GR	681 900	2163 900	681 900	2163 900	681 900	2163 900	693 500	2163 900	693.500	2195 200
GR	684 500	2195 200	684 500	2195 200	684 500	2195 200	686 200	2224 900	689 000	2253.900
GR	692 100	2274 600	695 200	2285 200	696 300	2302 700	0 000	0 000	0 000	0 000
NC	0 040	0 040	0 030	0 300	0 500	0 000	0 000	0 000	0.000	0 000
NH	6 000	0 100	1149 400	0 055	1462 000	0 030	1566 000	0 090	1639 600	0.035
NH	2057 200	0 100	2302 700	0 000	0 000	0 000	0.000	0 000	0 000	0 000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

X1	418.330	45 000	1462 000	1566 000	40 000	40 000	40 000	0 000	0 000	0 000
GR	697 600	878 300	688 300	878 700	687 800	937 300	687 400	967 900	687 400	968 300
GR	686 500	991 000	686 300	1063 100	684 400	1125 900	679 900	1149 400	678.800	1226.400
GR	678 800	1286 800	680 000	1330 300	681 000	1405 000	681 500	1450 000	681 500	1450 000
GR	681 500	1462 000	676 600	1464 000	671.100	1474 000	666 700	1484.000	665 700	1494 000
GR	665 200	1504 000	665 200	1514 000	665.500	1524 000	666 500	1534 000	668 000	1544 000
GR	671 900	1554 000	676 600	1564 000	681 400	1566 000	681 400	1579 600	681 400	1579.600
GR	680 900	1612 500	682 900	1639 600	682 900	1727 900	682 800	1837 500	681 900	1955 200
GR	681 600	2057 200	681 100	2116 000	681 300	2153 000	681 900	2163 900	684 500	2195 200
GR	686 200	2224 900	689 000	2253 900	692 100	2274 600	695 200	2285 200	696 300	2302 700
NH	6 000	0 100	1149 400	0 055	1462 000	0 030	1566 000	0 090	1639 600	0 035
NH	2057 200	0 100	2302 700	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION AT DOWNSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

DIVIDED FLOW CONDITION DUE TO PRESENCE OF BRIDGE ABUT,(687 8)

X1	418 340	45.000	1462 000	1566 000	10 000	10 000	10 000	0 000	0 000	0 000
X2	0 000	0 000	0 000	688 400	689 400	0 000	0 000	0 000	0 000	0 000
GR	697.600	878 300	688 300	878 700	687 800	937 300	687 400	967 900	687 400	968 300
GR	686 500	991 000	686 300	1063 100	684 400	1125 900	679 900	1149 400	678 800	1226 400
GR	678 800	1286 800	680 000	1330.300	682.700	1405 000	689 400	1450.000	681 500	1450 000
GR	681 500	1462 000	676 600	1464 000	671 100	1474 000	666.700	1484.000	665 700	1494 000
GR	665 200	1504 000	665 200	1514 000	665 500	1524 000	666 500	1534 000	668 000	1544 000
GR	671 900	1554 000	676 600	1564 000	681.400	1566 000	681 400	1579 600	689 400	1579 600
GR	680 900	1612 500	682 900	1639 600	682 900	1727 900	682 800	1837 500	681 900	1955 200
GR	681 600	2057 200	681 100	2116.000	681 300	2153 000	681 900	2163 900	684 500	2195 200
GR	686 200	2224 900	689 000	2253 900	692 100	2274 600	695 200	2285 200	696 300	2302 700
NH	6 000	0 100	1149 400	0 055	1462 000	0 030	1566 000	0 090	1639 600	0 035
NH	2057 200	0 100	2302.700	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION AT UPSTREAM FACE OF PEDESTRIAN BRIDGE, ELLIS PLAYGROUND

DIVIDED FLOW CONDITION DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	418 350	0 000	0 000	0.000	6 000	6.000	6 000	0 000	0 000	0 000
X2	0 000	0 000	0 000	688 400	689 400	0 000	0 000	0 000	0 000	0 000
NH	6 000	0 100	1149 400	0.055	1462 000	0 030	1566 000	0 090	1639 600	0 035
NH	2057 200	0 100	2302 700	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PEDESTRIAN BRIDGE

X1	418 360	45 000	1462 000	1566 000	10.000	10 000	10 000	0.000	0 000	0 000
GR	697 600	878 300	688 300	878 700	687 800	937 300	687 400	967 900	687 400	968 300
GR	686 500	991 000	686 300	1063 100	684 400	1125 900	679 900	1149.400	678 800	1226 400
GR	678 800	1286 800	680 000	1330 300	681 000	1405 000	681 500	1450.000	681 500	1450 000
GR	681 500	1462 000	676 600	1464 000	671 100	1474 000	666 700	1484 000	665 700	1494 000
GR	665 200	1504 000	665 200	1514 000	665 500	1524 000	666 500	1534.000	668 000	1544 000
GR	671 900	1554 000	676 600	1564 000	681 400	1566 000	681 400	1579.600	681 400	1579 600
GR	680 900	1612 500	682 900	1639 600	682.900	1727 900	682 800	1837 500	681 900	1955 200
GR	681.600	2057 200	681 100	2116 000	681 300	2153 000	681 900	2163 900	684 500	2195 200
GR	686 200	2224 900	689 000	2253 900	692 100	2274 600	695.200	2285 200	696 300	2302 700
NH	6 000	0 100	1149 400	0 055	1462.000	0 030	1566 000	0.090	1639 600	0 035

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NH   2057 200      0 100   2302 700      0 000      0 000      0 000      0 000      0 000      0 000      0 000

          CROSS SECTION OA

X1    418 400      0 000      0 000      0 000     40 000     40 000     40 000      0 000      0 000      0 000
NC      0 000      0 000      0 000      0 100      0 300      0 000      0 000      0 000      0 000      0 000
NH      7 000      0 100   1824 300      0 035   1943 100      0 100   2445 100      0 030   2548 300      0 090
NH   2580 500      0 035   2753 000      0 100   2928 300      0 000      0 000      0 000      0 000      0 000

          CROSS SECTION P

X1    418 990     67 000   2445 100   2548 300    700 000    700 000    700 000      0 000      0 000      0 000
GR    689 100   1441 600    688 500   1466 000    687 900   1513 700    686 800   1576 300    686 800   1703 000
GR    685 800   1824 300    685 800   1878.600    684 000   1910 200    682 700   1943 100    680 600   1956 300
GR    676 300   1965 700    674 800   1976 500    674 100   1990 800    675 900   2008 100    676 000   2031 300
GR    678 300   2041 000    678 700   2060 100    679 500   2072 600    678 700   2090 300    678 500   2116 400
GR    677 900   2147.100    676 700   2170 900    676 500   2182 300    677 600   2202 300    677 900   2235 200
GR    677 300   2271 700    675 500   2288 600    675 500   2313 500    676 400   2342 300    677 800   2361 400
GR    677 600   2396.000    680 300   2418 600    680 300   2432 600    676 300   2445 100    676 300   2445 100
GR    674 400   2450 100    670 700   2455 100    668 800   2460 100    668 500   2465 100    666 800   2470 100
GR    665 700   2475 100    665 800   2480 100    663 300   2485 100    663 200   2490 100    661 700   2495 100
GR    661 400   2500 100    661 300   2505 100    662 000   2510 100    662 900   2515 100    663 900   2520 100
GR    665 400   2525 100    667 300   2530 100    669 500   2535 100    672 600   2540 100    676 300   2548 300
GR    683 800   2561 200    682.100   2580 500    681 500   2667 600    681 100   2753 000    681 100   2790 600
GR    682 200   2806 200    685.200   2821 500    687 000   2840 400    689 100   2879 900    689 900   2910 200
GR    690 500   2928 300    690.500   2928 300      0 000      0 000      0 000      0 000      0 000      0 000
NH      7 000      0 100    307 600      0.045    642 600      0.090    686 900      0 030    767 400      0 100
NH    830 900      0 050   1383 600      0 100   1648 100      0.000      0 000      0 000      0 000      0 000

          CROSS SECTION Q

X1    419 940     60 000    686 900    767 400    850 000    500 000    950 000      0 000      0 000      0 000
GR    688 600    190 200    686 700    214 700    684 600    236 500    683 000    254 100    683 800    307.600
GR    683 400    350 000    683 100    394.200    682 500    446 100    682 200    494 900    681 800    534 500
GR    681 200    571 400    681 200    611 600    681 300    642 600    682 500    670 400    676 400    686 900
GR    673 800    691 900    672 200    696 900    670 400    701 900    668 900    706 900    667 900    711 900
GR    667 700    716 900    667 000    721 900    666 800    726.900    666 500    731 900    666 600    736.900
GR    666.900    741 900    668 000    749 900    669 700    751 900    671 700    756 900    673 600    761 900
GR    675 300    766 900    676 400    767 400    679 200    782 400    680 100    830 900    679 700    869 500
GR    678 900    898 100    679 500    921 300    679 400    951 500    679 400    968 400    679.500    968 500
GR    678 800   1013 900    678 100   1045 300    677 800   1098 800    677 200   1128 000    676.300   1156 200
GR    675 400   1184 900    675 900   1199 600    676 500   1238 200    677 500   1278 500    677 500   1307 700
GR    678 400   1356 300    680 100   1383 600    681 300   1421 800    682 400   1449 900    682 400   1478 200
GR    681.900   1508 500    682.700   1534 600    684 600   1567 800    686 600   1606 600    688 000   1648 100
NH      5 000      0 050   1294 100      0 120   2118 300      0 030   2203 600      0 090   2247 000      0 100
NH   2554 800      0 000      0 000      0 000      0 000      0 000      0 000      0 000      0 000      0 000

          CROSS SECTION S   1981= ELEV 687 9

X1    421 910     61 000   2118 300   2203 600    220 000   1800.000   1970 000      0 000      0 000      0 000
GR    690 400    118 700    688 900    145 500    688 900    145 500    688 900    145 900    684 900    183 400
GR    682 400    226 400    682.400    285 300    682 800    396 900    682 400    489 400    680 700    560.200
GR    680 000    675 600    680 000    794 600    680 500    862 600    679 500    900 500    678 200    953 400
GR    679.100   1020 300    679 600   1071 300    678 700   1097.400    677 600   1135 100    677 300   1173 700
GR    679 600   1202 300    680 400   1234 500    680 000   1294.100    680 000   1433 800    680 000   1541 100
GR    680 100   1610 800    679.600   1655 500    676.500   1681 000    676 500   1724 900    679 700   1771 400
GR    678 400   1852 000    677 800   1935 600    677 800   2015 900    678.700   2036.200    678 700   2046.000
GR    678 700   2080 200    679 700   2103.200    676 300   2118 300    674.100   2123 300    672 900   2128.300
GR    670.700   2133 300    668 200   2138 300    667 800   2143 300    667 500   2148 300    666 100   2153 300
GR    665 600   2158 300    665 600   2163.300    667 200   2168 300    667 800   2173 300    668 500   2178 300
GR    669 500   2183 300    671 300   2188 300    673 000   2193 300    676 300   2203 600    688 900   2223.700
GR    688 900   2247.000    688 900   2247 000    688 900   2247 000    689.400   2344 800    689 700   2468.000
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GR	690 100	2554 800	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
NH	4 000	0.050	1712 800	0 120	1878 300	0 030	1990 800	0 080	2059 300	0 000

CROSS SECTION T

X1	423 110	70 000	1878 300	1990 800	500 000	1200 000	1200 000	0 000	0 000	0 000
GR	696 300	0 000	691.200	0 000	690 800	16 600	690 000	37 300	690 000	44.800
GR	690 000	45 400	690 000	45 400	688 600	67 200	688 600	67 200	688 600	67 600
GR	688 600	103 000	687 900	138.900	686 900	179 600	684 300	215 100	682.600	270 800
GR	682 600	349.800	683 000	420 200	683 800	479 900	684 300	530 100	682 700	589 300
GR	681 700	653.800	681 800	748 300	681 800	849 400	681 800	938 600	682 400	982 400
GR	681 300	1040 700	681 200	1074 500	680 600	1189 000	679 700	1223 700	680 900	1274 200
GR	681 100	1322 700	681 000	1382 300	679 900	1448 300	678 800	1490 800	679 600	1533 500
GR	680 900	1580 900	680 800	1617 900	680 000	1667 600	680 000	1699 500	681 600	1712 800
GR	681.400	1769 500	681 400	1824.700	682 500	1851 200	676 300	1878 300	674 600	1883 300
GR	672.900	1888 300	671 100	1893 300	669 500	1898.300	668 400	1903 300	667 900	1908 300
GR	667 800	1913 300	667 200	1918.300	666 400	1923 300	666 300	1928.300	666 000	1933 300
GR	665 500	1938 300	665 700	1943 300	662 200	1948 300	666 700	1953 300	667 100	1958 300
GR	669 100	1963 300	670 900	1968 300	671 500	1973 300	672 000	1978 300	672 500	1983 300
GR	674 800	1988 300	676 300	1990 800	679 200	2000 400	687 200	2037 000	689 100	2059 300
NH	6 000	0 050	919 200	0 080	1100 400	0 030	1193 500	0 070	1215 600	0 500
NH	1709 100	0 050	2066 300	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION U

"N" VALUE RAISEO (0.50) TO ELIMINATE CONVEYANCE IN ROB

X1	424 360	58 000	1100 400	1193 500	600 000	1400 000	1250 000	0 000	0.000	0 000
GR	688 300	118 100	688 700	157 800	689 000	187 000	687 800	210 100	685 000	252.600
GR	683 500	296 300	683 500	387 300	684 000	465 700	684 900	591 500	684 900	682 700
GR	684 200	730 400	683 500	798 500	683 300	871 000	684 300	919 200	684 900	997 400
GR	685 200	1032 700	684 300	1057 700	682 000	1093 900	676 300	1100 400	673.600	1105 400
GR	672 900	1110 400	672 000	1115 400	670 000	1120 400	668 000	1125 400	667 100	1130 400
GR	666 900	1135 400	666 900	1140 400	667 000	1145 400	667 200	1150 400	668 000	1155 400
GR	668 300	1160 400	669 700	1165 400	670 200	1170 400	668 500	1175 400	670 300	1180 400
GR	670 800	1185 400	672 700	1190 400	676 300	1193 500	681 700	1215 600	681.700	1252 100
GR	681 700	1319.700	681 300	1391 000	680 200	1476 700	679 400	1563 100	679.400	1659 800
GR	678 800	1686 600	678 900	1703 200	681.300	1709 100	677 300	1717.700	679 700	1723 900
GR	679 700	1735 500	677 700	1747 000	676 800	1793 500	676 800	1923.900	678 200	1988 800
GR	682 100	2022 400	683 900	2040 900	688 100	2066 300	0 000	0 000	0 000	0 000
NH	8 000	0 100	1235 600	0 055	1475 200	0 030	1569 400	0 070	1588 900	0.050
NH	1618 700	1 000	2929 400	0 050	2962 200	0 100	3134 600	0 000	0 000	0 000

CROSS SECTION V 1981 FLOOD IS ELEV 888 85

"N" VALUE RAISED (0 50) TO ELIMINATE CONVEYANCE IN ROB

X1	425 460	76 000	1475 200	1569 400	1100 000	500 000	1100 000	0 000	0 000	0 000
GR	689 400	1093 300	689 800	1105 300	689 800	1105 300	689 600	1115.700	687.500	1131 900
GR	684 000	1151 000	678 900	1164 500	677 000	1183 800	675 600	1207 900	675 600	1235.600
GR	676 700	1245 100	677 300	1289 400	678 000	1337 900	680 000	1363 600	681.400	1392 800
GR	682 000	1408.800	683 000	1423 100	683 000	1433 400	682 400	1446.900	676.300	1475 200
GR	674 600	1480.200	672 700	1485 200	670 600	1490 200	668 300	1495 200	667 200	1500 200
GR	667.200	1505.200	667 600	1510 200	667 800	1515 200	667 900	1520.200	668.000	1525 200
GR	667 900	1530 200	668 100	1535 200	668 800	1540 200	669 900	1545.200	670 800	1550 200
GR	671 900	1555 200	672 400	1560.200	673 200	1565 200	676 300	1569 400	685 000	1580.000
GR	685 000	1585 800	682 900	1588 900	682 300	1613 700	682 100	1674 200	682.100	1729 700
GR	682 100	1752 500	682 600	1845 300	681 900	1916 600	681.400	1970 200	682 100	2051 600
GR	681 000	2106 800	680 200	2147 200	681 900	2253.800	681 600	2330 100	681 000	2376 700
GR	681 000	2458 100	681 600	2498 800	683 500	2550 100	685 500	2597.200	683 600	2661 300
GR	682 800	2697 700	681 300	2760 800	681 200	2809 500	680.900	2864 200	681 400	2909.200
GR	684 000	2915.200	681 100	2929 400	676.200	2944 500	676 200	2944.900	680 700	2962 200
GR	682 400	2988.200	682 000	3010.900	679 700	3047 400	682 300	3076 200	684 500	3096 000

GR	689 200	3134 600	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
NH	6 000	0 080	1447 500	0 030	1522 300	0.080	1558 700	0 050	1609 400	1 000
NH	4052 700	0 050	4237 100	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION X

"N" VALUE RAISED (0 50) TO ELIMINATE CONVEYANCE IN ROB

X1	427 260	81 000	1447 500	1522 300	1900.000	200 000	1800 000	0 000	0 000	0 000
GR	686 700	1441 600	676 300	1447 500	674.100	1452 500	672 100	1457 500	670 700	1462 500
GR	669.800	1467 500	669 000	1472 500	668 200	1477 500	666 900	1482 500	666 300	1487 500
GR	665 600	1492 500	665 500	1497 500	666 400	1502.500	669 200	1507 500	671 400	1512 500
GR	673 100	1517 500	676 300	1522 300	679 700	1526 800	680 700	1555 100	685 300	1558 700
GR	683.100	1567 500	681 000	1575 100	680 800	1609 400	680 800	1674.400	682 000	1738 300
GR	682 400	1824 100	682 300	1911 000	682 300	2013 900	682 300	2111 700	682 300	2198 400
GR	682 600	2288 100	682 100	2361 500	682 100	2410 500	683 500	2460 400	684 200	2498 500
GR	683 200	2547 600	683 200	2638 400	682 000	2757 200	683 400	2865 600	682 100	2988 300
GR	679 500	3040 000	679 700	3052 500	683 400	3070 500	683 400	3164 200	683 600	3257 100
GR	683 600	3257 400	683 500	3339 400	683 200	3441.300	682 300	3523 700	682 300	3575 300
GR	683 700	3629 200	685 800	3677 100	687 000	3740 200	687 000	3804 900	686 300	3828 600
GR	684 200	3863 900	682 600	3905 200	681 500	3974 200	681 200	4052 700	684 700	4055 900
GR	684 300	4071 700	682 100	4084 400	680 800	4100 600	678 100	4109 700	681 100	4119 300
GR	682 700	4134 000	682 800	4160 900	682 700	4193 900	683 400	4205.800	683.700	4222 400
GR	687 500	4229 600	688 900	4237.100	688 900	4306 900	689 100	4395 700	689 100	4497 600
GR	688 700	4536 800	688 600	4608 200	688 900	4680 800	689 700	4774.700	690 600	4817 700
GR	696 300	4818 200	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000
NH	5 000	0 050	2479 800	0 090	2552.000	0 030	2637 400	0 070	2677 600	0 050
NH	3442 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000	0 000

CROSS SECTION Z

X1	429 590	87 000	2552 000	2637 400	1200.000	600 000	2330 000	0 000	0 000	0 000
GR	688 000	450 000	686.000	475.000	684 000	500 000	684 000	650 000	683 000	750 000
GR	680 000	1000 000	681 000	1000 000	681 000	1028 900	681 600	1069.000	681 300	1090 800
GR	680 300	1122 800	678 100	1150 100	678 100	1190 000	678 100	1245 000	678 100	1302 100
GR	678 100	1354 500	678 200	1412 500	678 400	1445 500	679 100	1467.100	680 100	1504 000
GR	681 100	1539 400	681 000	1615.800	681 400	1666 400	680 700	1716 300	680.400	1764 700
GR	680 200	1795 300	679 800	1834.300	680 000	1876 700	681 000	1916.900	681 700	1955 900
GR	682 300	1994 100	682 700	2041 800	682 700	2070 100	682 700	2108.100	681 900	2134 800
GR	680 500	2163 300	679 700	2188 900	679 700	2216 700	680 000	2249.300	681 100	2275 100
GR	682 000	2293 700	682 700	2316.400	683 200	2337 200	683 300	2363 400	682 200	2383 500
GR	681 100	2405 700	680 900	2426 800	680 100	2443 000	680 800	2469 400	681 600	2479 800
GR	684 400	2497 000	679 400	2519 600	679 400	2544 400	676 300	2552.000	674 400	2557 000
GR	672 100	2562 000	670.700	2567.000	670 800	2572 000	670 800	2577 000	671 000	2582 000
GR	671 000	2587 000	671 000	2592 000	670 900	2597 000	670 800	2602 000	670 800	2607 000
GR	670.700	2612 000	671 000	2617 000	671 100	2622 000	672 200	2627 000	672 800	2632 000
GR	676 300	2637 400	679.200	2644 100	682 600	2664 200	684 600	2677 600	684 700	2695 300
GR	683 400	2701 200	683 400	2706 700	685 600	2717 400	686 300	2749 700	687 300	2749 700
GR	688.600	2779 200	689 600	2827 700	689 500	2870 600	689 100	2928 200	689.600	2994 000
GR	690 500	3038 400	690 800	3094 000	0 000	0 000	0 000	0.000	0 000	0 000
NH	4 000	0 090	2445 900	0 030	2533 300	0 070	2556 700	0 050	2958 100	0 000

CROSS SECTION AA

X1	430 810	80 000	2445 900	2533 300	150 000	1300 000	1220 000	0.000	0 000	0 000
GR	688 000	150.000	684 000	450 000	684 000	500 000	683 000	800.000	680 000	850 000
GR	679 000	1000 000	678 100	1000 000	678 200	1014 800	680 200	1041 300	679.600	1087 200
GR	679 600	1131 600	678 300	1169 600	677 800	1218 000	677 800	1261 900	677.800	1317 100
GR	677 900	1362 700	678 700	1393.400	678.900	1439 900	679 500	1470 300	680 400	1496 600
GR	680 400	1527 800	680 100	1561 800	680 000	1575 400	681 200	1601 800	681 800	1627 800
GR	680 200	1651 400	679 000	1683 800	678 900	1719 700	678 500	1776 900	678 100	1819 700
GR	678 100	1861 800	678 800	1888 200	680 600	1916 200	682 700	1940 100	682 900	1978 900
GR	682 900	2019.300	683 300	2062 100	682.600	2111.700	681.900	2156 000	681 200	2193 700

GR	680 800	2237.200	680 800	2284 800	681 600	2315 300	682 500	2345 700	683 000	2368 900
GR	683 700	2389 700	684 100	2411 700	681 600	2428 400	676 300	2444 500	676 300	2444 500
GR	676 300	2445 900	674.100	2450 900	672 200	2455 900	671 500	2460 900	670 800	2465 900
GR	670 200	2470.900	669 800	2475 900	669 600	2480 900	669 300	2485 900	668 600	2490 900
GR	668 500	2495 900	668 800	2500 900	669.100	2505 900	669 500	2510 900	670 300	2515 900
GR	671 400	2520 900	673 200	2525 900	676 300	2533 300	680.000	2537 000	680 900	2546 900
GR	682 700	2556 700	686 400	2559 700	686 400	2574 600	686 400	2575.000	686 400	2575 000
GR	686 600	2612 600	687 100	2698 800	688 200	2779 800	688 600	2861 600	688 700	2958 100
EJ	0 000	0 000	0 000	0.000	0 000	0 000	0 000	0 000	0 000	0 000

```
*PROF 1

CCHV=    0 100 CEHV=    0.300
1490 NH CARD USED
*SECNO 398 070

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      NXR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3470 ENCROACHMENT STATIONS=       0 0     1060 1  TYPE=      1  TARGET=     1060 099

         CROSS SECTION BB    1981 FLOOD IS ELEV 683.38

   398 07     15 50     675 00      0 00      683 38     675 07     0 07      0 00      0 00      666 30
    3000        47       2753        200        134       1235       604         0         0       666 30
     0 00      0 35      2 23       0 33      0 213      0 064     0.137     0 000     659 50      482 00
 0 000300         0          0          0          0          0         6     0 00     453 50     1042 89


1490 NH CARD USED
*SECNO 399 300

3265 DIVIDED FLOW


         CROSS SECTION CC

   399 30     15.65     675 45      0 00      0 00      675 59     0 14      0 50      0 02      666 50
    3000        176       2790       34.        429        896       65       47.        13       666 50
     0 12      0 41      3 11       0 51      0 115      0 064     0 170     0 064     659 80      785 57
 0.000584      1250      1230       1200          2          0         0      0.00     466 91     1556 13


1490 NH CARD USED
*SECNO 400 500

3265 DIVIDED FLOW


         CROSS SECTION DD

   400 50     13 78     676 18      0.00      0 00      676 33     0 15      0 74      0 00      666 70
    3000        32       2810        158         72        889       378       83.       22.       666 70
     0.23      0 45      3 16       0 42      0.213      0 064     0 164     0.064     662 40     1760.71
 0 000663       800      1200.      1250          2          0         0     0 00     305 27     2291 15


1490 NH CARD USED
*SECNO 401 200

         CROSS SECTION EE

   401 20     14.23     676 63      0 00      0 00      676.77     0 15      0.45      0 00      666 70
    3000.       53       2895.       52.        111        921       109       102        25       666.70
     0.29      0 48      3 14       0.48      0 213      0 064     0 213     0 064     662.40     2117 61
 0.000625       300       700.       700          2          0         0     0 00     116 91     2234 52


1490 NH CARD USED
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00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: BLISSFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: REPORT AND REVIEWER COMMENTS

00BREAK00

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

December 11, 1985

IN REPLY REFER TO

Planning Division-SS

RECEIVED
DEC 12 1985
ENGINEERING WATER
MANAGEMENT

Mr. Lawrence N. Witte, Chief
Engineering-Water Management Division
Michigan Department of Natural Resources
P.O. Box 30028
Lansing, Michigan 48909

Dear Mr. Witte:

Submitted for your review and approval is a copy of the hydraulic calculations for the Village of Blissfield, Michigan Flood Insurance Study. Enclosed are the HEC-2 multiple profile and encroached runs, a map showing the location of the field surveyed cross sections and a brief write-up dealing with items that will assist the review process.

If you have any questions regarding the enclosed data, please contact Mr. Joe Wanielista at (313) 226-6773.

Sincerely,

R L Gregory

for C. Argiroff, P.E.
Chief, Planning Division

Enclosures

VILLAGE OF BLISSFIELD, MICHICAN FIS
HYDRAULIC COMPUTATION BACKGROUND INFORMATION

The Village of Blissfield was studied in an earlier FIS. Due to several major floods in recent years, the hydrology was updated. The new flows were used in the HEC-2 data deck that was the basis of results published in the earlier FIS. Examination of the output revealed several technical problems in the way the original HEC-2 data was coded. Initially, the Manning's N multiplier in the 6th field of the J2 card was removed to produce realistic values. This resulted in a calibration profile that was much lower than the highwater marks collected by the MDNR during the 1981 flood. The results were examined and a number of additional changes were made. The channel N values were all increased to .06. The overbank reach lengths were modified at a number of locations. Most were increased, but several were decreased. The expansion and contraction coefficients were increased for most reaches. Encroachment was added at a number of locations to better model the ability of the water to expand and contract at several of the more restricted sections. Finally, a discharge of 10,900 cfs, which was provided by the MDNR and is larger than the flow used in the first run indicated above, was used for the calibration run profile. The profile was still significantly below the high water marks. The efforts to this point in time were discussed with Bruce Menerey of the MDNR. After some additional investigation, it was agreed that a calibration discharge of 11,800 cfs would be used. The starting elevation for this discharge would match the 500-year profile in the original FIS. The starting elevations for other discharges would be based on the slope area method using the slope resulting from the calibration profile. It was agreed that as long as the hydraulic model appears reasonable, no further modifications would be required to match the 1981 high water marks.

ENGINEERS / PLANNERS / ARCHITECTS / SURVEYORS / GEOLOGISTS / CHEMISTS • 611 CASCADE WEST PKWY S E . GRAND RAPIDS, MI 49506 • PH (616) 942-9600

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NOV 26 1980
WATER MANAGEMENT

WILLIAMS & WORKS
T O WILLIAMS 1861-1941 • F D WORKS 1880-1931 • W B WILLIAMS 1895-1974

November 18, 1980 - 85376

Mr. Daniel L. Morgan, P.E., Chief
Technical Programs Unit
Michigan Department of Natural Resources
Stevens T. Mason Building
Box 30028
Lansing, Michigan 48909

RE: Village of Blissfield FIS
Hydraulic Model Revisions

Dear Mr. Morgan:

Regarding your letter of October 17, 1980 concerning your review of the hydraulic analysis of the River Raisin, Village of Blissfield transmittal, we have made the following adjustments in the hydraulic model:

1) A slope of 0.000225 D/S, based on the USGS quad and channel invert elevations, is used in the slope-area method to determine the normal depth starting elevation.

2) The channel "n" value is increased to 0.064 based on V.T. Chow's method for determining Manning's roughness coefficients. A copy of this method as applied to the River Raisin in Blissfield is enclosed.

3) As a consequence of the increased depths caused by the above revisions, several cross sections were extended and/or realigned. They are: B, C, E, F, G, and H. A decision was made not to extend cross sections upstream of the US 223 bridge (P, Q, S, T, and U) based on lengths already in excess of 2000 feet, and the fairly shallow, insignificant flow areas to be gained by any extensions. The altered sections are shown on the enclosed work map.

4) The US 223 bridge, previously modeled using the normal bridge routine, has been converted to the special bridge routine. The 100-year flood depth at the bridge increased from 16.03 feet to 19.19 feet and the bridge now exhibits pressure flow. However, the adjacent Penn Central Railroad bridge continues to operate under low flow conditions; thus it was not converted to the special bridge routine.

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The above revisions result in flood depths of 20-23 feet; in agreement with information provided in your letter regarding the Deerfield Village FIS and highwater marks at Crockett Highway. Attempts to obtain specific data on past flood events and high water marks within the Village were unsuccessful. However, a visit to Blissfield and discussions with local residents confirmed 1908 flooding on several streets in the area of US 223. Increased depths in the hydraulic model now result in flooding of these areas as shown on the revised work map. The recurrence interval of the 1908 flood is not known.

Enclosed please find the following:

1) HEC-2 computer output containing the aforementioned revisions.

2) Work map showing revised floodway, 500- and 100-year flood limits.

3) Computation of channel "n" value.

We trust that you will now concur with this hydraulic analysis, since the revisions you suggested have been incorporated and close agreement with past flood information provided in your letter has been established. Consequently, we will proceed with preparation of the formal FIS report for the community using this data. If you have any questions, please contact us within two weeks.

Sincerely,

WILLIAMS & WORKS, INC.

Joellen C. Sorg

Joellen C. Sorg,
Design Engineer

JCS/clm

enclosures

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HYDRAULIC ANALYSIS OF RIVER RAISIN

VILLAGE OF BLISSFIELD, LENAWEE COUNTY

Original submittal - letter info takes precedence

Historical Flooding:

The most significant flooding of the River Raisin in Blissfield probably occurred in March, 1908, according to residents. This flood was the result of three days of steady, warm rain and subsequent melting of the heavy winter snowfall. Portions of US 223 and surrounding streets in the vicinity of the river were shown under water in several photographs, obtained from a local resident. The magnitude of this flood discharge, however, is not known. Occurrences of significant flooding in more recent times are not on record for the area. This would require stages to be in excess of elev 688. The 100 yr profile submitted shows stages 5 ft lower (elev 683)

Hydraulic Computations:

The hydraulic computations were made utilizing the November, 1976 (updated July, 1979) version of the U.S. Army Corps of Engineers HEC-2 water surface profile computer program.

The flood discharges used in the analysis are as follows:

Recurrence Interval	Discharge (CFS)	
500 years	10,300 ✓	ok'd 7/10/80 by SAM
100 years	8,400 ✓	
50 years	7,600 ✓	
10 years	5,550 ✓	

These flows were determined in a separate hydrologic analysis using a Log-Pearson Type III computer program. Instantaneous peak flow data used in this analysis was obtained from two U.S.G.S. gaging stations on the River Raisin, located in Adrian and Monroe, Michigan. A comparison was made with earlier data generated by McNamee, Porter, and Seely of Ann Arbor, Michigan for the Village of Deerfield, Michigan. The computer output and resultant flows were submitted to and approved by letter by the Hydrologic Studies Unit - Water Management Division of the Michigan Department of Natural Resources on July 10, 1980.

The Qs appear to be = to d/s with adjustments for change of DA. But since the intermediate trips have a small DA. the Q max may really not be lower.

Backwater computations were initiated at a point identified as cross section BB, approximately 3.7 miles (19,560 feet) downstream of the US 223 bridge in Blissfield, and continued upstream for approximately 6.2 miles (32,740 feet). The US 223 bridge, Penn Central Railroad bridge, and a pedestrian bridge in Ellis Playground were incorporated into the computations.

OK but how does this compare with the d/s effects? LOW!

The starting water surface elevations used at cross section BB were initially obtained using the slope-area method to determine normal depth. Multiple profiles were then NDt.5± run to show that for each recurrence interval flood, normal depth at cross section BB was within a range of starting stages which caused flood stage profiles to converge at cross section A. The So used is not representative of what the USGS Quad shows 0.00075 vs 0.000227

The d/s FIS used "n" 100% higher and they were lower than the highwater marks

The Manning's roughness coefficients used in the hydraulic analysis are shown on the plotted cross sections. A uniform roughness coefficient of 0.030 was used for the channel as being representative of the quite regular, deep channel section below normal water levels. Side bank and overbank roughness coefficients varied from 0.040 in lawn and clear areas to 0.120 in areas of heavy brush and tree growth. Gradual expansion and contraction coefficients of 0.3 and 0.1 respectively, were used between cross sections. These coefficients were increased to 0.5 and 0.3 immediately upstream and downstream of the bridge sections to reflect more abrupt flow transitions at these points.

Artificial encroachments were utilized in the HEC-2 model to limit the effective conveyance area, particularly upstream and downstream from bridges and natural restrictions. Flow lines were assumed to expand at a 1:3 slope (Δ top width: Δ reach length) and contract at a 1:1 slope for the purpose of computing effective top widths.

why not 1:4 & 1:1 rather than 1:3 & 1:1

Initially, the floodway was determined using encroachment method no. 4 with a maximum allowable flood stage increase of 0.10 feet above the natural 100-year flood stage. These preliminary floodway encroachments were checked for reasonableness, modified where necessary, and reinserted manually using encroachment method no. 1. Where artificial encroachments were utilized to define the effective flow areas, these encroachments also delineated the floodway limits.

The three bridges located in the study reach were modeled using the normal bridge routine contained in the HEC-2 program. Low flow conditions result at the bridges for each recurrence interval flood. Does this sound reasonable with remarks on page paragraph #1?

Results:

Due to the lack of historical flood stage data for the Village of Blissfield, it is not possible to verify the computer model against past floods. However, historical photographs and information tend to substantiate flooding in the areas identified in this analysis. Channel and floodplain geometry, as well as other hydraulic characteristics, and the resultant flood stages were checked for reasonableness and found to be acceptable.

Flood stages determined for the 100- and 500-year floods have been delineated on the attached work map as were the computed floodway limits. The 100-year flood stage and floodway limits are also shown on the cross section plots.

VILLAGE OF BLISSFIELD

RIVER RAISIN

LENAWEE COUNTY

Cross Section Identification	River Stationing (Thousands of Feet)
BB	398.07
CC	399.30
DD	400.50
EE	401.20
A	402.05
B	403.75
C	404.85
D	406.45
E	407.77
F	408.70
G	410.07
H	411.35
I	412.95
J	414.60
K	415.62
L	416.65
M	417.55
N	417.74
O	418.29
P	418.99
Q	419.94
S	421.91
T	423.11
U	424.36
V	425.46
X	427.26
Z	429.59
AA	430.81

October 17, 1980

Frank Finch, Director
Insurance & Mitigation Division
Region V - FEMA
One N. Dearborn
Chicago, Illinois 60602

Re: FIS - Blissfield Village
Lenawee County
River Raisin - Hydraulics

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Dear Mr. Finch:

We have reviewed the hydraulic analysis for the River Raisin as submitted in Williams and Works August 22, 1980 transmittal. Our review has raised the following comments on the apparant low stages produced by the 100-year flood:

1) The FIS 100-year flood starts with a stage that is only .3 ft. higher than that at the upstream limit of the approved Deerfield Village FIS which is 10 miles downstream. That study was calibrated with a 1973 flood event.

2) Flood depths both upstream and downstream of the study area indicate much greater depths should be expected than in the submitted model. Highwater information at Crockett Highway (upstream of Blissfield) indicates a flow depth of 21 ft. in 1937 and an unconfirmed flow depth of 23 ft. in 1906-8; the Deerfield Study had depths of 20-22 ft. The submitted 100-year for Blissfield starts at a 14.5 ft. depth.

3) For the flat slopes of this river, a slope area start is very sensitive to the method used to determine the slope. The USGS quad shows a slope of .000227 d/s of Blissfield. If this slope was a more appropriate one, then the starting water surface elevation (using the same "n" values and discharge) would be 4 ft. higher.

4) This reach is very sensitive to variations in channel "n" values. The photos submitted indicate a winter survey. A field survey in the spring or summer might have shown that channel "n" values of .065 were more appropriate than .03; if that was the case, then increasing "n" in the channel to .065 would have increased the starting wsel 3.7 ft. (using the submitted slope and Q). As well, generally "n" values are increased in areas of severe river meander such as Blissfield.

5) The report submitted indicated that the 1908 flood covered streets in the area of US-223. Although the magnitude of this flood may not be known, those areas are not shown as flooded in the submitted FIS. This indicates low stages.

Calibration with a past flood event could help to resolve many of these problems.

We request that you consider these comments and where appropriate, adjust the hydraulic model and profile. A reply in this regard would be appreciated.

If you have any questions, please feel free to call.

Sincerely,

Daniel H. Morgan, P.E., Chief
Technical Programs Unit

by: Suzanne Elms, Hydrologic Engineer
Technical Programs Unit
Water Management Division

DHM/SE: mjb

cc: Joellen Sorg
Williams & Works

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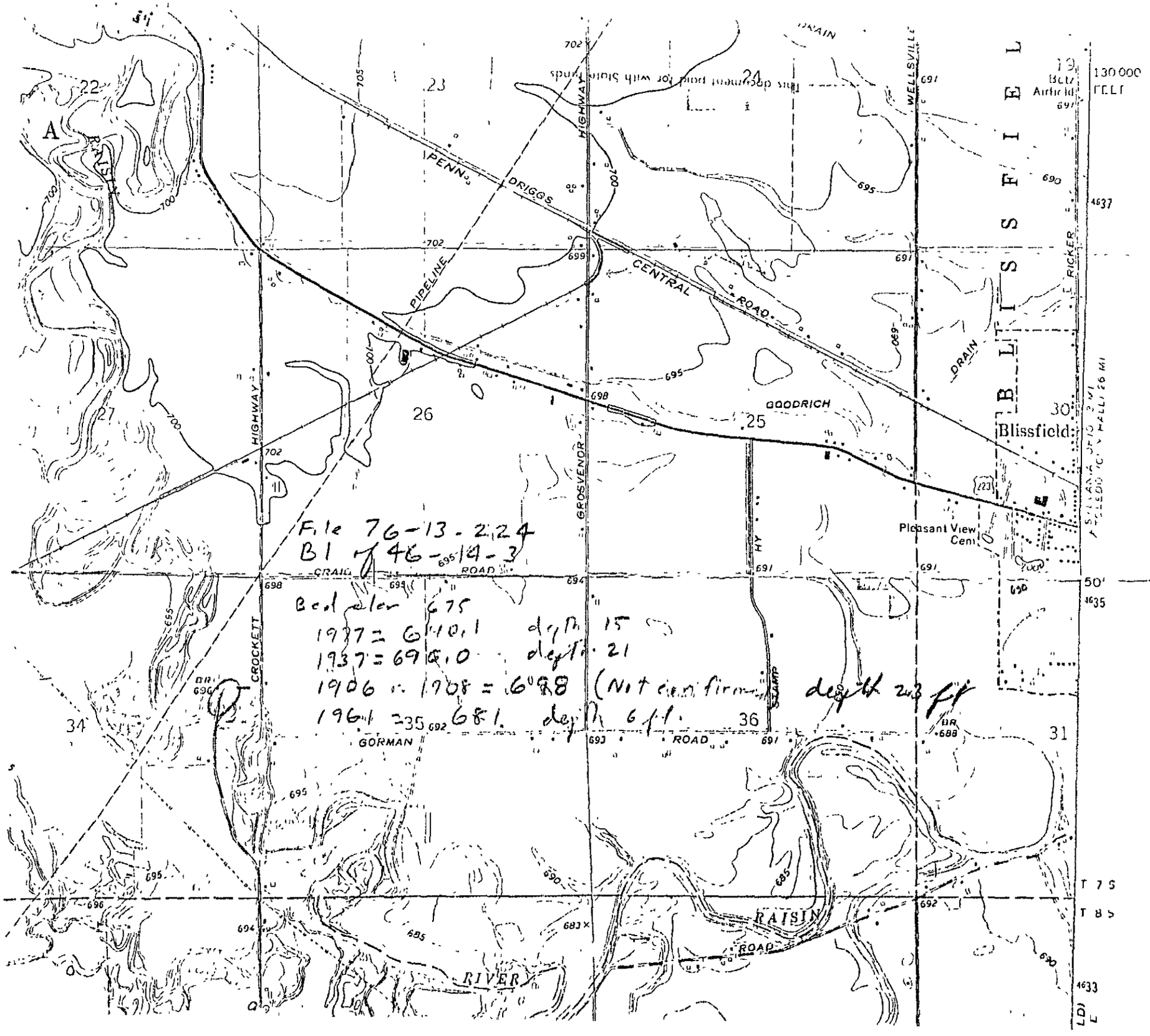

File 76-13-224
B1 of 46-14-3

Bed elev 675
1937 = 640.1 depth 15
1937 = 696.0 depth 21
1906 & 1908 = 698 (Not confirmed) depth 23 ft
1961 = 681 depth 6 ft.

To: S Elms & Jim Boulton ✓
From: C R Leap
Subj: Blissfield FIS
Date: Oct 2, 1980

Problem - Review Williams & Works' hydraulic computations for Their River Raisin Village of Blissfield F.I.S. & comment of The effect of The flood discharge upon flood stages.

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Conclusion -

The profiles presented do not reflect The historic flooding noted at Blissfield, Mich. Results appear to be 5 to 8 ft low.

The starting condition are only 0.3' above The d/s FIS for Deerfield, (10 miles d/s) resulting from an incorrect channel slope and questionable choice of friction factors.

The possible differences in friction slope may cause a 5.0 ft error based upon a slope-area approximation for The starting Conditions, based upon staff evaluation.

The range of channel resistance "n" may cause 3.7 ft change of stage, for any given Q and starting slope.

Conclusions cont

The range in the 100 yr frequency discharges would expect to changd the starting profile by 1.5 ft. at Section BB

All of these factors, combined show that a slope-area start could be in error by as much as 10 ft, between the higher and lower of the assumptions. This is shown on Enclosure A.

Short of a flood calibration of a past flood, to eliminate the need refined slope-area evaluation down stream the use of historic data is the only reasonable way to approximate the flood hazard. B.M. up and d/s the large floods have produce depth of flow between 21 and 23 ft.

Prior to reruning the model, the coeficients of resistance must be evaluated to include all losses not normally modeled as well as our concerns note latter in the memo.

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Staff Review -

The report and computations for This study were done by Joellen C. Sorg. She is not registered in Michigan as a Professional Engr. nor does it appear That she should be submitting materials and studies to us for approval. The Two studies, That She has submitted, appear to have not been checked by people experienced in river mechanics.

The report notes photographs showing The water in 1908 to cover part of ~~River Street~~, within The town, as well as (US 223 as stated Adrian St. This would indicate stages as high as elev 685 some 5 ft above Their suggested 100 yr profile.

In spite of The fact That The 1973 flood was used by McN P&S, 10 miles d/s for The Deerfield FIS calibration, W&W indicates no high water marks could be found. AT Crockett Highway The Road Commission found a 1937 high water mark, as well as an unconfirmed 1906 or 1908 stage. I feel That They must exist at Blissfield.

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Starting Conditions –

W&W used a Slope-area start of 0.00075 ft/ft, at Sec no BB, in the vicinity of Iffland Road, about 1 mile north of the Village. A very limited convergence spread of .5 ± was used on either side of this profile. I am totally at a loss on how they estimated the Sf at 0.00075 ft/ft. We note the following slopes:

a) The USGS Quad shows from contour crossings a slope of (665-660)/22,000 = 0.000227 ft/ft several miles d/s of Blissfield Mich.

b) Invert between Sec BB & CC, the 2 lower sections, (659.8 - 659.5)/1230 = 0.0002439 ft/ft

c) Avg slope between Section CC Blissfield and Deerfield Sec F is approx (660 - 652.00)/47000 = 0.00017 ft/ft

I suggest a) as the most likely. However they used of the unsupported slope (0.00075) confined the water to the channel in the lower reaches of the study. When the stages break out of the channel, the profile flattens out to a slope of 0.000325. If projected d/s, stages appear to be in better

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agreement with the depths of flow as noted by MeNP&S, d/s for the Deerfield FIS (100 yr depths 19 to 21.6ft; The starting conditions are clearly low; as they are within .5ft of Deerfield FIS d/s.

Channel "n" values -

The bulk of the reach was assumed to be 0.03 in spite of the intermixing required as a large % of the overbank flow must shift between the left, channel & right overbank. Published research would indicate that the effective "n" for this condition may be 30% higher, than if a uniform channel exist. I feel it important that we note that when the down stream study was calibrated with the 1973 flood, they used extensively higher channel coeficients. Nch = 0.065 & n overbank 0.1+ were used u/s of Deerfield.

To test the effects of slope (S_f), n and Q on the starting elevation I approximated Sec BB and computed a slop area solution for a range conditions. From this test, it can be seen that based upon this model, that the starting conditions could logically

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be 5 to 8 ft higher, than these used. The higher stages would appear to cause stages near the 1908 flood photos & produce the normal flood flow depths noted at Deerfield & Crockett Rd.

Since the starting conditions are independent of the vegetation and the discharge, the results of my starting slope-area approximation are best shown as a plot of W.S stage vs channel "n". The 27 conditions are plotted and noted as 9 runs for n = 0.03, n = 0.045 and n = 0.055. See exhibits A & B & C which contains a plot of the computer results.

I feel Run 5 to be the best estimate of slope and discharge. It shows we may expect a starting 100; elevation at BB if these "n" exist:

n = 0.03	ws	678.8
n = 0.04	ws	679.9
n = 0.05		681.2
n = 0.055		681.9
n = 0.06		682.6
n = 0.065		683.3

W & W for $S_o = 0.00075$, $Q = 8400$, $n = 0.03$ shows a suggested stage of 674

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It is apparant, That for the very flat slopes here, That a slope-area start is not adequate with out a flood calibration. Simply the assumption of a channel friction factor can change stages 3.7 ft. See enclosure A, for any given Q & Sf

In response to the question of how sensitivity the profiles are to discharge variations, the above computer approximation clearly indicates on enclosure B, that for a 23 % increase in Q (from 8400 to 10,300 cfs) produces about a 1.5 ft difference in flood hazard. The range cause by the difference in slopes is approximately 5.0 ft.

Short of a flood verification, I do not believe it possible to compute within the required accuracy a flood profile which would not be a continuation of the Deerfield profile, as the range of results from possible combinations of n, Q & S would be almost 10 ft. This is shown in green on enclosure A.

I have requested Highway Department plans for US 22. If a high water mark exist on the old plans, It may be possible to re constitute that flood closer than this entire reached could be correctly modeled.

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Modeling problems –

I suggest additional sections be modeled between A & B, B & C, C & D and I & H. to effectively represente the floodway.
Section F & F need to be skewed

Section U, V & AA should have the pot hole removed from the section rather than having a localized heavy n

Section X should cross along the ridge rather than run parallel and below the ridge elevation.

The entire model may need adjustment at the high stages resulting from the increased n values and the inclusion of the d/s back water effects.

The total effect of the above model are small when compaired to the channel conditions and the starting conditions

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Re additional section need to roughly approximate a starting water surface based upon the Deerfield study are noted as inclosure D

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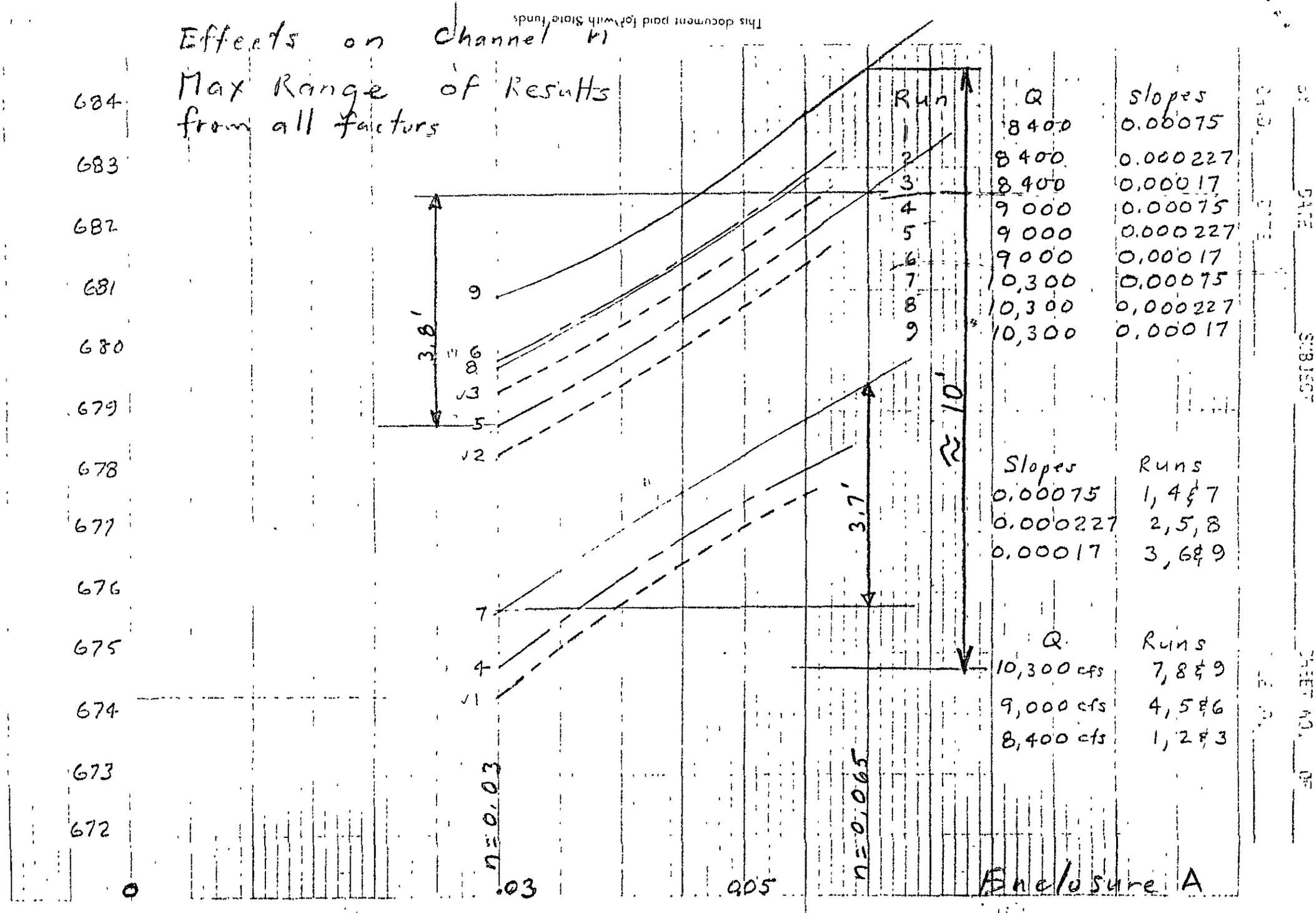
Effects on Channel #1

Max Range of Results from all factors



Run	Q	Slopes
1	8400	0.00075
2	8400	0.000227
3	8400	0.00017
4	9000	0.00075
5	9000	0.000227
6	9000	0.00017
7	10,300	0.00075
8	10,300	0.000227
9	10,300	0.00017

Slopes	Runs
0.00075	1, 4 & 7
0.000227	2, 5, 8
0.00017	3, 6 & 9

Q	Runs
10,300 cfs	7, 8 & 9
9,000 cfs	4, 5 & 6
8,400 cfs	1, 2 & 3

Enclosure A

W.S. Stage vs Channel "n"

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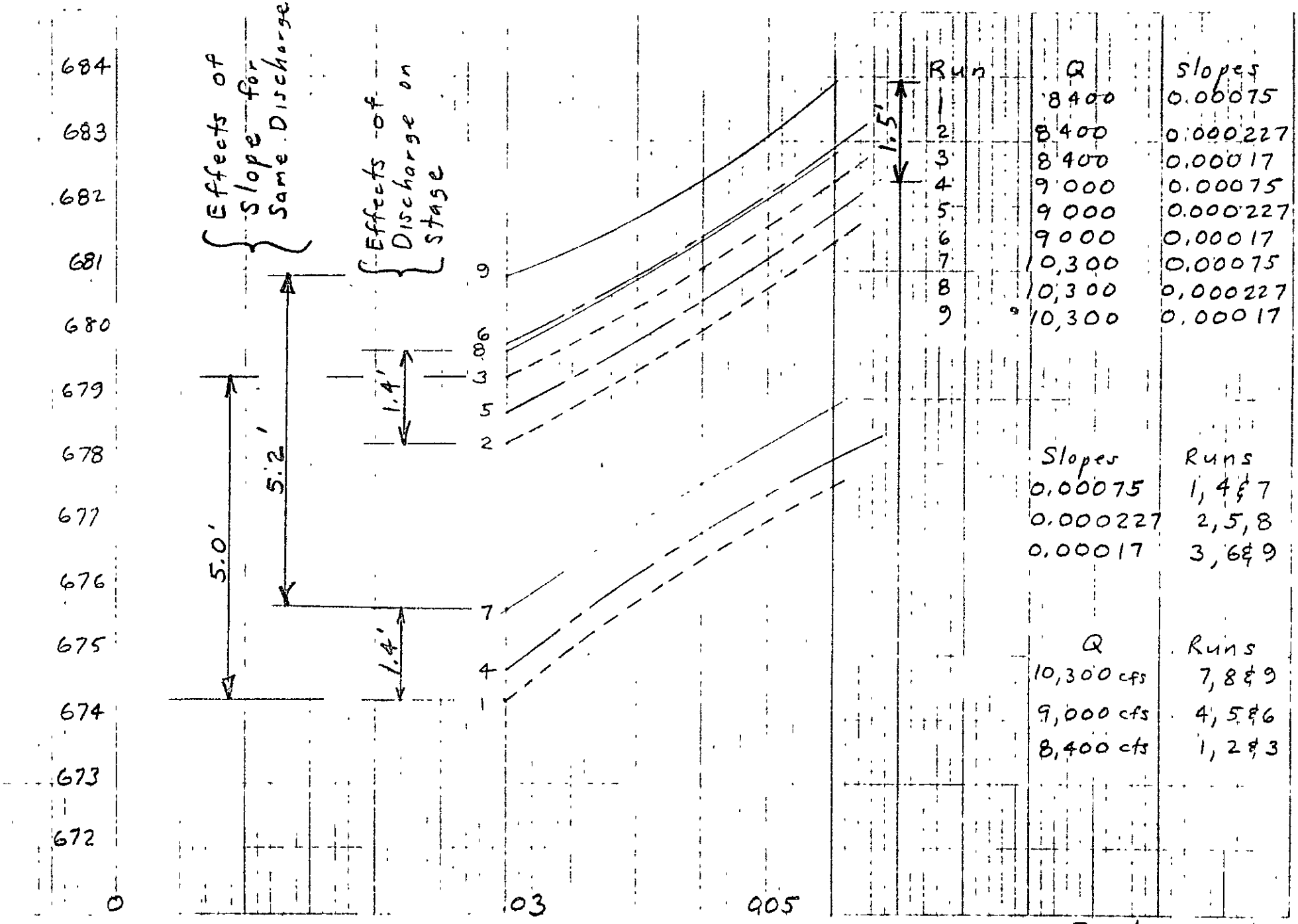
BY _____ DATE _____ SUBJECT _____ SHEET NO. ___ OF ___

CHKD. _____ DATE _____



Run	Q	Slopes
1	8400	0.00075
2	8400	0.000227
3	8400	0.00017
4	9000	0.00075
5	9000	0.000227
6	9000	0.00017
7	10,300	0.00075
8	10,300	0.000227
9	10,300	0.00017

Slopes	Runs
0.00075	1, 4 & 7
0.000227	2, 5, 8
0.00017	3, 6 & 9

Q	Runs
10,300 cfs	7, 8 & 9
9,000 cfs	4, 5 & 6
8,400 cfs	1, 2 & 3

W.S Stage vs Channel "n"

Enclosure B

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: BLISSFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

THIS RUN EXECUTED 29 NOV 85 11:37:35

HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CODE - 01, 02, 03, 04, 05, 06
MODIFICATION - 50, 51, 52, 53, 54, 55, 56

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

RIVER RAISIN, BLISSFIELD

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	SLMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	ARSA	QIK
398.070	0.00	0.00	0.00	659.50	6770.00	679.29	0.00	679.35	2.23	2.47	4276.87	4529.60
398.070	0.00	0.00	0.00	659.50	9600.00	681.44	0.00	681.51	2.26	2.68	5442.72	6285.10
398.070	0.00	0.00	0.00	659.50	10830.00	682.29	0.00	682.37	2.23	2.74	6242.96	7250.01
398.070	0.00	0.00	0.00	659.50	13730.00	683.99	0.00	684.06	2.23	2.89	7506.38	9194.44
398.070	0.00	0.00	0.00	659.50	11800.00	682.90	0.00	682.97	2.23	2.79	6678.12	7906.76
399.300	1230.00	0.00	0.00	659.80	6770.00	679.57	0.00	679.63	2.24	2.46	4567.06	4520.77
399.300	1230.00	0.00	0.00	659.80	9600.00	681.70	0.00	681.75	1.62	2.25	6656.35	7345.82
399.300	1230.00	0.00	0.00	659.80	10830.00	682.55	0.00	682.59	1.45	2.20	7510.70	8985.65
399.300	1230.00	0.00	0.00	659.80	13730.00	684.23	0.00	684.27	1.27	2.14	9259.57	12194.00
399.300	1230.00	0.00	0.00	659.80	11800.00	683.15	0.00	683.19	1.38	2.18	8115.68	10057.76
400.500	1200.00	0.00	0.00	662.40	6770.00	679.94	0.00	680.07	5.32	3.60	3183.75	2936.20
400.500	1200.00	0.00	0.00	662.40	9600.00	681.94	0.00	682.04	3.50	3.16	5511.52	5132.00
400.500	1200.00	0.00	0.00	662.40	10830.00	682.77	0.00	682.84	2.91	2.97	6703.97	6348.93
400.500	1200.00	0.00	0.00	662.40	13730.00	684.41	0.00	684.46	2.05	2.64	9331.39	9562.10
400.500	1200.00	0.00	0.00	662.40	11800.00	683.35	0.00	683.41	2.54	2.83	7656.61	7411.07
401.200	700.00	0.00	0.00	662.40	6770.00	680.37	0.00	680.70	9.66	4.94	1948.25	2178.25
401.200	700.00	0.00	0.00	662.40	9600.00	682.25	0.00	682.45	6.63	4.40	4220.30	3728.68
401.200	700.00	0.00	0.00	662.40	10830.00	683.02	0.00	683.16	5.28	4.04	5295.04	4713.00
401.200	700.00	0.00	0.00	662.40	13730.00	684.59	0.00	684.67	3.42	3.42	7701.02	7425.11
401.200	700.00	0.00	0.00	662.40	11800.00	683.57	0.00	683.69	4.52	3.81	6124.91	5549.79
402.050	850.00	0.00	0.00	662.50	6770.00	681.00	0.00	681.03	1.06	1.64	6000.02	6574.19
402.050	850.00	0.00	0.00	662.50	9600.00	682.66	0.00	682.69	1.05	1.74	8166.09	9252.90
402.050	850.00	0.00	0.00	662.50	10830.00	683.34	0.00	683.37	1.02	1.75	9180.00	10720.51
402.050	850.00	0.00	0.00	662.50	13730.00	684.79	0.00	684.82	0.93	1.76	11795.15	14252.21
402.050	850.00	0.00	0.00	662.50	11800.00	683.84	0.00	683.87	0.99	1.76	10044.08	11853.04

SECNO	XLCH	ELTRD	ELLO	EJOIN	Q	CWSEL	CRINS	EO	LOK#S	VCH	AREA	.01K
403.750	1700.00	0.00	0.00	662.10	6770.00	681.22	0.00	681.26	1.74	2.17	5941.76	5126.03
403.750	1700.00	0.00	0.00	662.10	9600.00	682.97	0.00	682.90	1.40	2.02	8244.80	8102.52
403.750	1700.00	0.00	0.00	662.10	10830.00	683.53	0.00	683.56	1.30	2.03	9189.00	9509.70
403.750	1700.00	0.00	0.00	662.10	13730.00	684.96	0.00	684.99	1.12	1.98	11403.25	12349.15
403.750	1700.00	0.00	0.00	662.10	11800.00	684.03	0.00	684.06	1.23	2.01	9902.96	10532.76
404.850	1100.00	0.00	0.00	662.40	6770.00	681.41	0.00	681.45	1.92	2.31	5794.52	4884.37
404.850	1100.00	0.00	0.00	662.40	9600.00	683.01	0.00	683.04	1.42	2.10	8455.83	8047.06
404.850	1100.00	0.00	0.00	662.40	10830.00	683.67	0.00	683.69	1.26	2.03	9824.47	9604.64
404.850	1100.00	0.00	0.00	662.40	13730.00	685.09	0.00	685.10	1.02	1.91	12378.95	13533.63
404.850	1100.00	0.00	0.00	662.40	11800.00	684.16	0.00	684.18	1.17	1.98	10708.80	10915.58
406.450	1600.00	0.00	0.00	655.20	6770.00	681.68	0.00	681.75	1.80	2.52	4710.15	5051.32
406.450	1600.00	0.00	0.00	655.20	9600.00	683.24	0.00	683.30	1.62	2.65	6868.13	7113.44
406.450	1600.00	0.00	0.00	655.20	10830.00	683.87	0.00	683.94	1.77	2.67	7772.92	8133.84
406.450	1600.00	0.00	0.00	655.20	13730.00	685.25	0.00	685.31	1.45	2.67	9901.53	10480.11
406.450	1600.00	0.00	0.00	655.20	11800.00	684.35	0.00	684.41	1.73	2.67	8462.05	8965.96
407.770	1320.00	0.00	0.00	663.60	6770.00	681.98	0.00	682.05	2.83	2.77	3995.77	4027.68
407.770	1320.00	0.00	0.00	663.60	9600.00	683.53	0.00	683.60	2.81	2.92	5214.85	5720.85
407.770	1320.00	0.00	0.00	663.60	10830.00	684.15	0.00	684.23	2.76	2.96	5731.82	6515.62
407.770	1320.00	0.00	0.00	663.60	13730.00	685.51	0.00	685.59	2.65	3.03	6867.32	8436.62
407.770	1320.00	0.00	0.00	663.60	11800.00	684.62	0.00	684.70	2.72	2.99	6122.01	7149.97
408.700	930.00	0.00	0.00	662.50	6770.00	682.22	0.00	682.27	2.43	2.52	4860.30	4044.29
408.700	930.00	0.00	0.00	662.50	9600.00	683.76	0.00	683.81	2.17	2.52	6494.12	6518.42
408.700	930.00	0.00	0.00	662.50	10830.00	684.38	0.00	684.43	2.08	2.52	7151.63	7517.19
408.700	930.00	0.00	0.00	662.50	13730.00	685.73	0.00	685.78	1.92	2.54	8592.49	9515.47
408.700	930.00	0.00	0.00	662.50	11800.00	684.85	0.00	684.90	2.02	2.53	7646.39	8312.67
410.070	1370.00	0.00	0.00	664.70	6770.00	682.47	0.00	682.50	1.44	1.93	6453.04	5638.38
410.070	1370.00	0.00	0.00	664.70	9600.00	683.98	0.00	684.00	1.22	1.89	8780.19	8449.90
410.070	1370.00	0.00	0.00	664.70	10830.00	684.59	0.00	684.61	1.16	1.88	9721.07	10050.80
410.070	1370.00	0.00	0.00	664.70	13730.00	685.92	0.00	685.94	1.04	1.86	11778.31	13459.45
410.070	1370.00	0.00	0.00	664.70	11800.00	685.05	0.00	685.07	1.11	1.87	10431.17	11175.56
411.350	1280.00	0.00	0.00	662.50	6770.00	682.63	0.00	682.66	1.44	2.00	6455.76	5642.51
411.350	1280.00	0.00	0.00	662.50	9600.00	684.11	0.00	684.14	1.22	1.94	9111.39	8681.47
411.350	1280.00	0.00	0.00	662.50	10830.00	684.71	0.00	684.73	1.13	1.91	10330.19	10179.13
411.350	1280.00	0.00	0.00	662.50	13730.00	686.02	0.00	686.05	0.96	1.83	13132.00	14074.46
411.350	1280.00	0.00	0.00	662.50	11800.00	685.16	0.00	685.19	1.07	1.88	11285.56	11420.78
412.950	1600.00	0.00	0.00	664.70	6770.00	682.86	0.00	682.91	2.09	2.37	5021.75	4678.00
412.950	1600.00	0.00	0.00	664.70	9600.00	684.31	0.00	684.36	1.99	2.43	6556.32	6813.41
412.950	1600.00	0.00	0.00	664.70	10830.00	684.90	0.00	684.94	1.93	2.45	7181.23	7796.96
412.950	1600.00	0.00	0.00	664.70	13730.00	686.19	0.00	686.24	1.81	2.48	8581.88	10193.50
412.950	1600.00	0.00	0.00	664.70	11800.00	685.34	0.00	685.39	1.89	2.46	7660.57	8534.57

SECNO	XLOC	ELORD	ELLC	ELMIN	A	CWSEL	CRIWS	ES	LOSS	VCH	AREA	QIN
413.910	930.00	0.00	0.00	664.70	6770.00	683.02	0.00	683.04	1.02	1.69	6885.67	6693.45
413.910	930.00	0.00	0.00	664.70	9600.00	684.46	0.00	684.49	1.06	1.81	8704.20	9316.45
413.910	960.00	0.00	0.00	664.70	10830.00	685.05	0.00	685.07	1.06	1.86	9457.11	10515.97
413.910	960.00	0.00	0.00	664.70	13730.00	686.33	0.00	686.36	1.05	1.92	11136.62	13334.51
413.910	960.00	0.00	0.00	664.70	11800.00	685.49	0.00	685.52	1.06	1.87	10030.63	11468.44
413.960	50.00	0.00	0.00	676.30	6770.00	683.03	0.00	683.05	2.93	1.51	5860.60	3956.95
413.960	50.00	0.00	0.00	676.30	9600.00	684.47	0.00	684.50	2.40	1.54	7733.33	6196.29
413.960	50.00	0.00	0.00	676.30	10830.00	685.06	0.00	685.08	2.25	1.58	8485.72	7221.70
413.960	50.00	0.00	0.00	676.30	13730.00	686.34	0.00	686.37	2.00	1.43	10197.43	9713.64
413.960	50.00	0.00	0.00	676.30	11800.00	685.50	0.00	685.52	2.15	1.59	9070.43	8040.89
414.010	50.00	0.00	0.00	666.10	6770.00	683.03	0.00	683.09	3.96	2.60	4444.38	3402.02
414.010	50.00	0.00	0.00	666.10	9600.00	684.47	0.00	684.52	2.99	2.43	6273.95	5560.73
414.010	50.00	0.00	0.00	666.10	10630.00	685.06	0.00	685.10	2.71	2.38	7011.52	6576.11
414.010	50.00	0.00	0.00	666.10	13730.00	686.34	0.00	686.39	2.29	2.31	8638.36	9080.63
414.010	50.00	0.00	0.00	666.10	11800.00	685.50	0.00	685.54	2.54	2.35	7571.34	7396.76
414.600	590.00	0.00	0.00	665.60	6770.00	683.21	0.00	683.24	2.18	2.00	5644.22	4587.53
414.600	590.00	0.00	0.00	665.60	9600.00	684.61	0.00	684.64	1.83	1.96	7558.99	7085.25
414.600	590.00	0.00	0.00	665.60	10830.00	685.18	0.00	685.21	1.72	1.95	8340.46	8252.67
414.600	590.00	0.00	0.00	665.60	13730.00	686.45	0.00	686.48	1.53	1.94	10072.64	11104.49
414.600	590.00	0.00	0.00	665.60	11800.00	685.62	0.00	685.65	1.65	1.94	8935.43	9190.67
415.620	1020.00	0.00	0.00	665.90	6770.00	683.38	0.00	683.41	1.56	1.79	5560.63	5017.16
415.620	1020.00	0.00	0.00	665.90	9600.00	684.76	0.00	684.80	1.63	1.95	6946.91	7592.04
415.620	1020.00	0.00	0.00	665.90	10830.00	685.33	0.00	685.37	1.63	1.99	7514.84	8476.58
415.620	1020.00	0.00	0.00	665.90	13730.00	686.58	0.00	686.63	1.62	2.09	8777.24	10777.44
415.620	1020.00	0.00	0.00	665.90	11800.00	685.76	0.00	685.80	1.63	2.03	7947.94	9239.38
416.650	1030.00	0.00	0.00	662.50	6770.00	683.56	0.00	683.67	3.07	2.80	3227.22	3864.71
416.650	1030.00	0.00	0.00	662.50	9600.00	684.97	0.00	685.12	4.13	3.43	3796.80	4724.41
416.650	1030.00	0.00	0.00	662.50	10830.00	685.54	0.00	685.70	4.51	3.65	4028.03	5099.99
416.650	1030.00	0.00	0.00	662.50	13730.00	686.80	0.00	687.00	5.26	4.12	4541.85	5985.75
416.650	1030.00	0.00	0.00	662.50	11800.00	685.97	0.00	686.15	4.78	3.82	4204.22	5393.97
417.490	840.00	0.00	0.00	660.40	6770.00	683.88	0.00	684.06	4.67	3.49	2086.59	3131.96
417.490	840.00	0.00	0.00	660.40	9600.00	685.41	0.00	685.71	4.95	4.49	2338.37	3641.95
417.490	840.00	0.00	0.00	660.40	10830.00	686.03	0.00	686.38	7.87	4.88	2442.43	3861.07
417.490	840.00	0.00	0.00	660.40	13730.00	687.39	0.00	687.87	9.89	5.72	2674.47	4367.56
417.490	840.00	0.00	0.00	660.40	11800.00	686.50	0.00	686.90	8.56	5.17	2521.76	4038.26
417.530	40.00	0.00	0.00	660.40	6770.00	683.88	0.00	684.07	0.78	3.55	2040.82	7683.31
417.530	40.00	0.00	0.00	660.40	9600.00	685.41	0.00	685.74	1.20	4.62	2270.03	8778.10
417.530	40.00	0.00	0.00	660.40	10830.00	686.02	0.00	686.41	1.37	5.04	2364.13	9240.26
417.530	40.00	0.00	0.00	660.40	13730.00	687.38	0.00	687.91	1.78	5.95	2570.72	10284.76
417.530	40.00	0.00	0.00	660.40	11800.00	686.49	0.00	686.93	1.51	5.35	2435.41	9596.09

FORM 6413

SECNO	XLOW	ELTRD	ELLC	ELWTR	Q	CWSEL	CRITWS	EG	VOXS	VCH	AREA	QTR
417.540	10.00	690.60	689.20	667.20	6770.00	683.88	0.00	684.08	1.12	3.52	1923.44	6400.04
417.540	10.00	690.60	689.20	667.20	9600.00	685.42	0.00	685.74	1.59	4.47	2149.77	7606.28
417.540	10.00	690.60	689.20	667.20	10830.00	686.06	0.00	686.42	1.79	4.83	2243.45	8121.70
417.540	10.00	690.60	689.20	667.20	13730.00	687.48	0.00	687.93	2.18	5.61	2447.20	9302.47
417.540	10.00	690.60	689.20	667.20	11800.00	686.54	0.00	686.94	1.92	5.10	2313.45	8523.80
417.560	20.00	690.60	689.20	667.20	6770.00	683.89	0.00	684.08	1.12	3.52	1923.76	6401.73
417.560	20.00	690.60	689.20	667.20	9600.00	685.44	0.00	685.74	1.59	4.46	2151.62	7619.30
417.560	20.00	690.60	689.20	667.20	10830.00	686.06	0.00	686.42	1.77	4.83	2243.91	8131.92
417.560	20.00	690.60	689.20	667.20	13730.00	687.45	0.00	687.94	2.18	5.61	2447.79	9306.14
417.560	20.00	690.60	689.20	667.20	11800.00	686.54	0.00	686.94	1.92	5.10	2313.95	8526.66
517.570	5.00	0.00	0.00	666.70	6770.00	683.97	0.00	684.09	1.30	3.73	1812.82	5926.40
517.570	5.00	0.00	0.00	666.70	9600.00	685.42	0.00	685.76	1.82	4.71	2039.97	7116.64
517.570	5.00	0.00	0.00	666.70	10830.00	686.04	0.00	686.45	2.03	5.09	2128.81	7609.12
517.570	5.00	0.00	0.00	666.70	13730.00	687.42	0.00	687.96	2.46	5.99	2329.16	9249.05
517.570	5.00	0.00	0.00	666.70	11800.00	686.52	0.00	686.97	2.18	5.37	2198.13	7995.65
417.570	5.00	0.00	0.00	666.70	6770.00	683.87	0.00	684.09	1.30	3.73	1814.87	5938.07
417.570	5.00	0.00	0.00	666.70	9600.00	685.42	0.00	685.76	1.81	4.70	2040.55	7127.16
417.570	5.00	0.00	0.00	666.70	10830.00	686.05	0.00	686.45	2.02	5.08	2131.60	7620.12
417.570	5.00	0.00	0.00	666.70	13730.00	687.43	0.00	687.96	2.45	5.99	2333.16	9264.19
417.570	5.00	0.00	0.00	666.70	11800.00	686.52	0.00	686.97	2.17	5.36	2201.15	8011.07
417.620	55.00	689.40	685.90	666.70	6770.00	683.89	0.00	684.10	1.30	3.73	1816.77	5947.73
417.620	55.00	689.40	685.90	666.70	9600.00	685.44	0.00	685.78	1.81	4.70	2043.72	7134.41
417.620	55.00	689.40	685.90	666.70	10830.00	686.41	0.00	686.79	1.97	4.96	2185.11	7928.18
417.620	55.00	689.40	685.90	666.70	13730.00	688.13	0.00	688.62	2.15	5.64	2434.30	9349.46
417.620	55.00	689.40	685.90	666.70	11800.00	686.99	0.00	687.41	1.97	5.20	2269.21	8379.78
417.660	35.00	0.00	0.00	664.90	6770.00	683.89	0.00	684.11	6.39	3.82	1968.23	3677.49
417.660	35.00	0.00	0.00	664.90	9600.00	685.46	0.00	685.80	8.88	4.80	2299.83	3221.61
417.660	35.00	0.00	0.00	664.90	10830.00	686.44	0.00	686.81	9.07	5.03	2512.49	3596.07
417.660	35.00	0.00	0.00	664.90	13730.00	688.20	0.00	688.65	10.11	5.65	2895.98	4316.00
417.660	35.00	0.00	0.00	664.90	11800.00	687.03	0.00	687.43	9.50	5.26	2639.89	3829.04
417.680	20.00	0.00	0.00	664.90	6770.00	683.91	0.00	684.13	6.28	3.79	2048.00	2702.23
417.680	20.00	0.00	0.00	664.90	9600.00	685.51	0.00	685.82	8.49	4.70	2451.14	3284.54
417.680	20.00	0.00	0.00	664.90	10830.00	686.50	0.00	686.84	8.57	4.90	2704.81	3700.40
417.680	20.00	0.00	0.00	664.90	13730.00	688.29	0.00	688.69	9.31	5.44	3166.75	4500.49
417.680	20.00	0.00	0.00	664.90	11800.00	687.10	0.00	687.46	8.89	5.10	2958.38	3957.49
418.290	610.00	0.00	0.00	665.00	6770.00	684.39	0.00	684.45	2.65	2.40	4441.87	4157.73
418.290	610.00	0.00	0.00	665.00	9600.00	686.14	0.00	686.19	3.09	2.89	6319.92	4449.63
418.290	610.00	0.00	0.00	665.00	10830.00	687.15	0.00	687.19	1.67	2.13	7439.55	8387.15
418.290	610.00	0.00	0.00	665.00	13730.00	689.01	0.00	689.05	1.28	1.99	9502.03	12154.50
418.290	610.00	0.00	0.00	665.00	11800.00	687.77	0.00	687.81	1.52	2.09	8139.29	9577.86

BEGNO	XLCH	ELTRO	ELLC	ELMIN	P	CWSEL	CRINS	ED	IDINS	VCH	AREA	VOL
418.330	40.00	0.00	0.00	665.20	6770.00	684.40	0.00	684.46	2.59	2.34	4506.54	4211.89
418.330	40.00	0.00	0.00	665.20	9600.00	686.15	0.00	686.20	2.05	2.24	6439.11	6208.51
418.330	40.00	0.00	0.00	665.20	10830.00	687.16	0.00	687.19	1.64	2.08	7588.14	8456.90
418.330	40.00	0.00	0.00	665.20	13730.00	689.02	0.00	689.05	1.24	1.94	9728.46	10256.05
418.330	40.00	0.00	0.00	665.20	11800.00	687.78	0.00	687.82	1.49	2.03	8307.34	9650.80
418.340	10.00	680.90	689.40	665.20	6770.00	684.40	0.00	684.46	2.83	2.45	4224.43	4024.98
418.340	10.00	680.90	689.40	665.20	9600.00	686.15	0.00	686.20	2.26	2.35	6095.44	6335.94
418.340	10.00	680.90	689.40	665.20	10830.00	687.16	0.00	687.20	1.81	2.18	7244.96	8053.86
418.340	10.00	680.90	689.40	665.20	13730.00	689.02	0.00	689.05	1.45	1.63	9414.57	10720.03
418.340	10.00	680.90	689.40	665.20	11800.00	687.78	0.00	687.82	1.64	2.13	7974.49	9204.49
418.350	6.00	689.40	688.40	665.20	6770.00	684.40	0.00	684.47	2.83	2.45	4222.55	4022.88
418.350	6.00	689.40	688.40	665.20	9600.00	686.15	0.00	686.21	2.26	2.35	6093.29	6333.65
418.350	6.00	689.40	688.40	665.20	10830.00	687.16	0.00	687.20	1.81	2.18	7243.68	8051.99
418.350	6.00	689.40	688.40	665.20	13730.00	689.01	0.00	689.04	1.44	2.26	8703.91	9664.01
418.350	6.00	689.40	688.40	665.20	11800.00	687.78	0.00	687.82	1.64	2.13	7973.40	9202.73
418.360	10.00	0.00	0.00	665.20	6770.00	684.42	0.00	684.47	2.59	2.34	4504.54	4209.63
418.360	10.00	0.00	0.00	665.20	9600.00	686.16	0.00	686.21	2.05	2.24	6451.80	6707.14
418.360	10.00	0.00	0.00	665.20	10830.00	687.16	0.00	687.20	1.64	2.08	7630.32	8459.98
418.360	10.00	0.00	0.00	665.20	13730.00	689.03	0.00	689.07	1.25	1.93	9859.88	10299.93
418.360	10.00	0.00	0.00	665.20	11800.00	687.79	0.00	687.83	1.49	2.02	8372.63	9665.09
418.400	40.00	0.00	0.00	665.20	6770.00	684.43	0.00	684.48	2.56	2.33	4525.89	4233.83
418.400	40.00	0.00	0.00	665.20	9600.00	686.17	0.00	686.22	2.03	2.23	6470.39	6729.61
418.400	40.00	0.00	0.00	665.20	10830.00	687.17	0.00	687.21	1.63	2.07	7645.55	8483.91
418.400	40.00	0.00	0.00	665.20	13730.00	689.04	0.00	689.07	1.24	1.93	9881.21	12340.62
418.400	40.00	0.00	0.00	665.20	11800.00	687.79	0.00	687.83	1.48	2.02	8386.56	9688.42
418.990	595.00	0.00	0.00	661.30	6770.00	684.56	0.00	684.60	1.49	1.98	6235.06	5541.16
418.990	595.00	0.00	0.00	661.30	9600.00	686.29	0.00	686.33	1.59	2.18	7894.69	7601.51
418.990	595.00	0.00	0.00	661.30	10830.00	687.26	0.00	687.30	1.45	2.15	8985.99	8997.22
418.990	595.00	0.00	0.00	661.30	13730.00	689.11	0.00	689.15	1.09	2.15	11128.99	12085.16
418.990	595.00	0.00	0.00	661.30	11800.00	687.88	0.00	687.92	1.40	2.15	9693.80	9965.83
419.940	950.00	0.00	0.00	666.50	6770.00	684.68	0.00	684.70	1.08	1.52	6531.01	6511.56
419.940	950.00	0.00	0.00	666.50	9600.00	686.41	0.00	686.43	1.01	1.59	8576.41	8558.04
419.940	950.00	0.00	0.00	666.50	10830.00	687.37	0.00	687.39	0.89	1.54	9758.81	11480.34
419.940	950.00	0.00	0.00	666.50	13730.00	689.21	0.00	689.23	0.77	1.53	12042.09	15421.78
419.940	950.00	0.00	0.00	666.50	11800.00	687.98	0.00	688.00	0.85	1.54	10515.45	12793.78
421.910	1970.00	0.00	0.00	665.60	6770.00	684.82	0.00	684.83	0.83	1.33	10082.02	7449.80
421.910	1970.00	0.00	0.00	665.60	9600.00	686.53	0.00	686.54	0.77	1.38	12938.75	10865.75
421.910	1970.00	0.00	0.00	665.60	10830.00	687.48	0.00	687.49	0.68	1.35	14523.35	13164.30
421.910	1970.00	0.00	0.00	665.60	13730.00	689.30	0.00	689.31	0.59	1.34	17592.47	17857.19
421.910	1970.00	0.00	0.00	665.60	11800.00	688.09	0.00	688.10	0.65	1.35	15539.14	14662.09

FORM 6413

SECNO	XLOC	ELTRD	ELLO	ELMIN	Q	CWSEL	CRWS	ES	IOK*S	VCH	AREA	LOSS
423.110	1200.00	0.00	0.00	662.20	6770.00	684.91	0.00	684.93	1.19	1.65	5865.04	6198.16
423.110	1200.00	0.00	0.00	662.20	9600.00	686.61	0.00	686.62	1.01	1.42	9301.09	9522.51
423.110	1200.00	0.00	0.00	662.20	10830.00	687.54	0.00	687.56	0.86	1.55	10647.90	11666.63
423.110	1200.00	0.00	0.00	662.20	13730.00	689.35	0.00	689.37	0.71	1.49	13273.65	16247.25
423.110	1200.00	0.00	0.00	662.20	11800.00	688.15	0.00	688.17	0.81	1.53	11520.16	13149.30
424.360	1250.00	0.00	0.00	666.90	6770.00	685.08	0.00	685.11	1.77	1.97	6504.02	5087.36
424.360	1250.00	0.00	0.00	666.90	9600.00	686.76	0.00	686.80	1.90	2.19	9573.01	8961.67
424.360	1250.00	0.00	0.00	666.90	10830.00	687.68	0.00	687.71	1.77	2.19	9707.30	8132.69
424.360	1250.00	0.00	0.00	666.90	13730.00	689.47	0.00	689.50	1.65	2.25	11926.20	10495.54
424.360	1250.00	0.00	0.00	666.90	11800.00	688.28	0.00	688.31	1.74	2.22	10447.10	8947.19
425.460	1100.00	0.00	0.00	667.20	6770.00	685.25	0.00	685.30	2.23	2.22	8728.90	4532.82
425.460	1100.00	0.00	0.00	667.20	9600.00	686.95	0.00	687.00	2.39	2.47	12063.85	6214.09
425.460	1100.00	0.00	0.00	667.20	10830.00	687.85	0.00	687.90	2.24	2.48	13860.87	7230.82
425.460	1100.00	0.00	0.00	667.20	13730.00	689.62	0.00	689.68	2.11	2.56	17424.01	9448.50
425.460	1100.00	0.00	0.00	667.20	11800.00	688.44	0.00	688.50	2.21	2.51	15045.15	7936.43
427.260	1800.00	0.00	0.00	665.50	6770.00	685.69	0.00	685.84	6.18	3.79	9194.15	2722.47
427.260	1800.00	0.00	0.00	665.50	9600.00	687.38	0.00	687.52	6.28	4.09	13727.49	3830.30
427.260	1800.00	0.00	0.00	665.50	10830.00	688.24	0.00	688.37	5.82	4.05	16135.87	4490.54
427.260	1800.00	0.00	0.00	665.50	13730.00	689.94	0.00	690.07	5.00	3.98	21485.03	6142.29
427.260	1800.00	0.00	0.00	665.50	11800.00	688.82	0.00	688.95	5.64	4.07	17767.44	4966.61
429.590	2330.00	0.00	0.00	670.70	6770.00	686.03	0.00	686.03	0.36	0.86	11803.35	11295.54
429.590	2330.00	0.00	0.00	670.70	9600.00	687.69	0.00	687.69	0.31	0.86	15596.52	17142.85
429.590	2330.00	0.00	0.00	670.70	10830.00	688.52	0.00	688.53	0.28	0.84	17526.29	20540.50
429.590	2330.00	0.00	0.00	670.70	13730.00	690.20	0.00	690.20	0.24	0.83	21624.02	28209.51
429.590	2330.00	0.00	0.00	670.70	11800.00	689.09	0.00	689.09	0.26	0.84	18848.09	22990.87
430.810	1220.00	0.00	0.00	668.50	6770.00	686.05	0.00	686.06	0.75	1.29	12184.98	7825.33
430.810	1220.00	0.00	0.00	668.50	9600.00	687.70	0.00	687.71	0.71	1.35	14086.41	11369.89
430.810	1220.00	0.00	0.00	668.50	10830.00	688.53	0.00	688.54	0.65	1.33	18117.95	13429.29
430.810	1220.00	0.00	0.00	668.50	13730.00	690.21	0.00	690.21	0.58	1.33	23215.21	18104.01
430.810	1220.00	0.00	0.00	668.50	11800.00	689.10	0.00	689.11	0.62	1.33	19500.06	14929.13

N.A.S.

MAP SCALE 1"=400'

DATE OF PHOTOGRAPHY 11-8-73

MANUSCRIPT #.

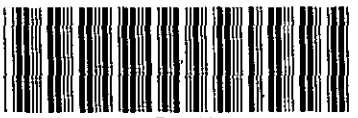
N

RECEIVED
NOV 26 1980
WATER MANAGEMENT

VILLAGE OF BLISSFIELD
FLOOD INSURANCE STUDY

REVISED WORK MAP
WILLIAMS & WORKS
NOV. 10, 1980

100-YEAR FLOOD
500-YEAR FLOOD
FLOODWAY
VILLAGE LIMITS



1) COUNTY: LENAWEE

2) STUDY NAME: CLINTON, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR ENCROACHED



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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED APRIL 1980
  ERROR CORR -  01,02,03,04
  MODIFICATION -  50,51,52,53,54
**********************************************

T1       HUD FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS
T2       VILLAGE OF CLINTON      RIVER RAISIN
T3       CLINTON, RIVER RAISIN   100-YEAR FLOOD W/ENCR.

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.       3.        0.        0.   .000000       .00     -1.0        0.   789.840      .000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    15.000       .000   -1.000       .000      .000     1.200      .000      .000      .000      .000
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SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	MACH	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 2

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 486.720
2800 NAT Q1= 560.12 WSEL= 789.84 ENC Q1= 560.12 WSEL= 789.94 RATIO= .0000
NAT Q1= 595. RATIOS LOB,CH,ROB= .3158 .5633 .1210 WSEL= 789.94

3470 ENCROACHMENT STATIONS= 1184.6 1693.1 TYPE= 4 TARGET= .058
CROSS SECTION AA

CONVEYANCE LEFT OF STA 854.9 ELIMINATED AS NON-EFFECTIVE FLOW AREA

486.72	6.94	789.04	.00	789.84	789.92	.08	.00	.00	784.90
1660.	493.	1008.	159.	838.	347.	269.	0.	0.	784.90
.00	.59	2.90	.59	.144	.054	.144	.000	782.90	1184.62
.000955	0.	0.	0.	0	0	0	.00	508.44	1693.06

1490 NH CARD USED
*SECNO 487.790

3470 ENCROACHMENT STATIONS= 1150.0 1550.0 TYPE= 1 TARGET= 400.000
CROSS SECTION AB

CONVEYANCE LEFT OF STA 801.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

487.79	8.64	790.94	.00	790.87	791.15	.20	1.19	.04	785.60
1660.	180.	1364.	116.	363.	343.	136.	25.	9.	785.60
.08	.50	3.97	.85	.144	.054	.144	.057	782.30	1150.00
.001458	830.	1070.	1050.	2	0	0	.00	400.00	1550.00

1490 NH CARD USED
*SECNO 490.140

3470 ENCROACHMENT STATIONS= 600.0 1350.0 TYPE= 1 TARGET= 750.000
CROSS SECTION AC

490.14	8.82	793.62	.00	793.46	793.75	.14	2.60	.01	787.30
1660.	170.	1046.	444.	388.	283.	724.	61.	24.	787.30
.30	.44	3.69	.61	.144	.054	.144	.061	784.80	600.00
.001166	1020.	2350.	1100.	3	0	0	.00	747.41	1347.41

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 491.740

3470 ENCROACHMENT STATIONS= 200.0 950.0 TYPE= 1 TARGET= 750.000
CROSS SECTION A

CONVEYANCE RIGHT OF STA 1100.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

491.74	7.51	794.61	.00	794.51	794.66	.05	.90	.01	789.00
1660.	442.	1055.	164.	642.	504.	438.	91.	36.	789.00
.52	.69	2.09	.37	.091	.054	.093	.064	787.10	200.00
.000499	600.	1600.	580.	2	0	0	.00	750.00	950.00

1490 NH CARD USED
*SECNO 492.340

3470 ENCROACHMENT STATIONS= 100.0 700.0 TYPE= 1 TARGET= 600.000
CROSS SECTION B1

492.34	8.21	795.01	.00	794.93	795.12	.10	.44	.02	789.00
1660.	493.	1031.	137.	542.	322.	307.	110.	45.	792.50
.59	.91	3.20	.45	.083	.054	.144	.063	786.80	100.00
.001237	550.	595.	680.	2	0	0	.00	600.00	700.00

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO 492.370

3470 ENCROACHMENT STATIONS= 100.0 700.0 TYPE= 1 TARGET= 600.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

492.37	8.27	795.07	.00	794.98	795.17	.10	.05	.00	789.00
1660.	504.	1014.	142.	560.	325.	319.	111.	46.	792.50
.60	.90	3.12	.44	.083	.054	.144	.063	786.80	100.00
.001162	40.	40.	40.	2	0	0	.00	600.00	700.00

1490 NH CARD USED
*SECNO 492.380

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 797.00 MAX ELLC= 795.60

3470 ENCROACHMENT STATIONS= 100.0 720.0 TYPE= 1 TARGET= 620.000
CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

492.38	8.67	795.07	.00	794.99	795.19	.13	.01	.01	797.00
1660.	518.	1119.	23.	459.	331.	71.	111.	46.	797.00
.60	1.13	3.38	.32	.073	.054	.144	.063	786.40	100.00
.001628	10.	10.	10.	1	0	0	.00	443.64	720.00

*SECNO 492.400

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 797.00 MAX ELLC= 795.60

3470 ENCROACHMENT STATIONS= 100.0 720.0 TYPE= 1 TARGET= 620.000
CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

492.40	8.69	795.09	.00	795.01	795.22	.12	.02	.00	797.00
1660.	522.	1115.	23.	463.	332.	72.	111.	46.	797.00
.60	1.13	3.36	.32	.073	.054	.144	.062	786.40	100.00
.001605	15.	15.	15.	0	0	0	.00	444.94	720.00

1490 NH CARD USED
*SECNO 492.410

3470 ENCROACHMENT STATIONS= 100.0 720.0 TYPE= 1 TARGET= 620.000
CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
492.41	8.36	795.16	.00	795.06	795.24	.09	.01	.01	789.00
1660.	518.	981.	161.	589.	329.	369.	111.	46.	792.50
.60	.88	2.98	.44	.083	.054	.144	.062	786.80	100.00
.001038	10.	10.	10.	2	0	0	.00	620.00	720.00

1490 NH CARD USED
*SECNO 492.450

3470 ENCROACHMENT STATIONS= 100.0 720.0 TYPE= 1 TARGET= 620.000
CROSS SECTION B2

492.45	8.40	795.20	.00	795.11	795.29	.08	.04	.00	789.00
1660.	527.	967.	166.	605.	332.	382.	113.	47.	792.50
.61	.87	2.91	.43	.083	.054	.144	.062	786.80	100.00
.000980	40.	40.	40.	0	0	0	.00	620.00	720.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 492.950

3470 ENCROACHMENT STATIONS= 100.0 800.0 TYPE= 1 TARGET= 700.000
CROSS SECTION B

492.95	7.49	795.59	.00	795.48	795.63	.05	.34	.00	790.00
1660.	484.	958.	217.	729.	430.	602.	130.	54.	790.00
.70	.66	2.23	.36	.089	.054	.144	.062	788.10	100.00
.000520	500.	500.	450.	2	0	0	.00	700.00	800.00

1490 NH CARD USED
*SECNO 494.400

3470 ENCROACHMENT STATIONS= 900.0 1200.0 TYPE= 1 TARGET= 300.000
CROSS SECTION C

CONVEYANCE RIGHT OF STA 1138.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

494.40	8.34	796.74	.00	796.65	796.92	.18	1.24	.04	791.70
1660.	517.	1083.	60.	555.	260.	78.	174.	70.	791.70
.83	.93	4.17	.77	.144	.054	.144	.060	788.40	900.00
.001650	1500.	1450.	1370.	2	0	0	.00	231.39	1131.39

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	MACH	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

1490 NH CARD USED
*SECNO 495.150

3470 ENCROACHMENT STATIONS= 1000.0 1370.0 TYPE= 1 TARGET= 370.000
CROSS SECTION DC

CONVEYANCE RIGHT OF STA 1420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

495.15	8.89	797.89	.00	797.83	798.03	.14	1.11	.00	793.20
1660.	60.	954.	646.	91.	252.	559.	188.	74.	793.20
.91	.66	3.79	1.16	.144	.054	.077	.060	789.00	1000.00
.001426	530.	750.	800.	2	0	0	.00	370.00	1370.00

1490 NH CARD USED
*SECNO 495.970

3470 ENCROACHMENT STATIONS= 750.0 1110.0 TYPE= 1 TARGET= 360.000
CROSS SECTION D1

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

495.97	7.33	799.03	.00	798.92	799.20	.17	1.16	.01	793.70
1660.	399.	1252.	9.	401.	328.	14.	203.	81.	793.70
.98	.99	3.82	.63	.069	.054	.144	.059	791.70	750.00
.001474	700.	820.	810.	2	0	0	.00	360.00	1110.00

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO 496.010

3470 ENCROACHMENT STATIONS= 750.0 1110.0 TYPE= 1 TARGET= 360.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

496.01	7.41	799.11	.00	799.01	799.27	.16	.06	.00	793.70
1660.	421.	1230.	9.	423.	331.	15.	204.	81.	793.70
.98	1.00	3.71	.61	.069	.054	.144	.059	791.70	750.00
.001374	45.	45.	45.	1	0	0	.00	360.00	1110.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 496.020

3470 ENCROACHMENT STATIONS= 750.0 1110.0 TYPE= 1 TARGET= 360.000
CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

496.02	7.40	799.10	.00	799.01	799.29	.19	.01	.01	793.70
1660.	361.	1295.	4.	363.	332.	9.	204.	81.	793.70
.98	.99	3.90	.50	.073	.054	.144	.059	791.70	750.00
.001518	5.	5.	5.	1	0	0	.00	360.00	1110.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.50	2.50	.00	38.70	1.40	274.30	1.00	791.70	.00

*SECNO 496.030
6870 D.S. ENERGY OF 799.29 HIGHER THAN COMPUTED ENERGY OF 799.23
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
799.95	799.29	.00	1017.	650.	274.	265.	797.80	799.00

3470 ENCROACHMENT STATIONS= 750.0 1110.0 TYPE= 1 TARGET= 360.000
CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

496.03	7.40	799.10	.00	799.00	799.29	.19	.00	.00	793.70
1660.	359.	1297.	4.	361.	331.	9.	204.	81.	793.70
.98	.99	3.91	.50	.073	.054	.144	.059	791.70	750.00
.001528	10.	10.	10.	2	0	4	.00	360.00	1110.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 496.040

3470 ENCROACHMENT STATIONS= 700.0 1110.0 TYPE= 1 TARGET= 410.000
CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

496.04	7.48	799.18	.00	799.05	799.31	.13	.01	.02	793.70
1660.	501.	1150.	0.	523.	335.	15.	204.	81.	793.70
.99	.96	3.43	.56	.069	.054	.144	.059	791.70	700.00
.001157	5.	5.	5.	2	0	0	.00	410.00	1110.00

1490 NH CARD USED
*SECNO 496.060

3470 ENCROACHMENT STATIONS= 700.0 1110.0 TYPE= 1 TARGET= 410.000
CROSS SECTION D

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

496.06	7.52	799.22	.00	799.09	799.34	.13	.03	.00	793.70
1660.	512.	1140.	8.	535.	337.	15.	205.	82.	793.70
.99	.96	3.38	.56	.069	.054	.144	.059	791.70	700.00
.001119	25.	25.	25.	0	0	0	.00	410.00	1110.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 96.490

3470 ENCROACHMENT STATIONS= 925.0 1126.0 TYPE= 1 TARGET= 201.000
CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

96.49	7.83	799.73	.00	799.66	799.91	.18	.55	.02	793.90
1660.	320.	1326.	14.	268.	352.	26.	213.	85.	793.90
1.03	1.20	3.77	.55	.072	.054	.144	.059	791.90	925.00
.001311	530.	430.	500.	2	0	0	.00	201.00	1126.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 497.310

3470 ENCROACHMENT STATIONS= 1050.0 1400.0 TYPE= 1 TARGET= 350.000
CROSS SECTION E

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.31	8.50	800.50	.00	800.45	800.55	.06	.63	.01	794.90
1110.	117.	778.	215.	255.	349.	410.	227.	90.	794.90
1.15	.46	2.23	.52	.144	.054	.096	.058	792.00	1050.00
.000452	650.	820.	750.	2	0	0	.00	350.00	1400.00

*SECNO 497.720

3470 ENCROACHMENT STATIONS= 1050.0 1400.0 TYPE= 1 TARGET= 350.000
CROSS SECTION E'

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.72	8.20	800.70	.00	800.65	800.77	.07	.21	.00	795.40
1110.	111.	818.	180.	228.	336.	345.	237.	93.	795.40
1.21	.49	2.44	.52	.144	.054	.098	.058	792.50	1050.00
.000572	400.	410.	450.	2	0	0	.00	350.00	1400.00

1490 NH CARD USED
*SECNO 498.430

3470 ENCROACHMENT STATIONS= 650.0 875.0 TYPE= 1 TARGET= 225.000
CROSS SECTION EF

CONVEYANCE LEFT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 1200.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

498.43	8.43	801.13	.00	801.09	801.25	.11	.47	.01	795.60
1110.	14.	993.	103.	38.	346.	211.	249.	98.	795.60
1.29	.37	2.87	.49	.144	.054	.123	.058	792.70	650.00
.000757	700.	710.	720.	2	0	0	.00	225.00	875.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 498.690

2800 NAT Q1= 274.05 WSEL= 801.30 ENC Q1= 274.12 WSEL= 801.40 RATIO= -.0003
NAT Q1= 282. RATIOS LOB,CH,ROB= .0157 .9714 .0129 WSEL= 801.40

3470 ENCROACHMENT STATIONS= 626.8 676.6 TYPE= 4 TARGET= .029
CROSS SECTION F

498.69	8.45	801.35	.00	801.30	801.56	.21	.29	.03	798.30
1110.	0.	1110.	0.	0.	302.	0.	251.	99.	798.30
1.31	.00	3.68	.00	.144	.144	.144	.058	792.90	626.80
.001822	280.	260.	170.	2	0	0	.00	49.80	676.60

1490 NH CARD USED
*SECNO 499.490

3470 ENCROACHMENT STATIONS= 410.0 514.0 TYPE= 1 TARGET= 104.000
CROSS SECTION F1

CONVEYANCE RIGHT OF STA 514.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

499.49	7.03	802.93	.00	802.84	803.24	.31	1.65	.03	797.90
1660.	36.	1608.	16.	34.	356.	19.	258.	100.	797.90
1.36	1.06	4.51	.84	.144	.054	.144	.058	795.90	432.53
.002243	900.	800.	600.	2	0	0	.00	76.54	509.07

CCHV= .300 CEHV= .500
*SECNO 499.520

3470 ENCROACHMENT STATIONS= 420.0 509.0 TYPE= 1 TARGET= 89.000
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE

CONVEYANCE LEFT OF STA 420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 509.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

499.52	7.14	803.04	.00	802.95	803.30	.26	.05	.01	797.90
1660.	93.	1524.	43.	35.	363.	20.	258.	100.	797.90
1.36	2.63	4.20	2.10	.048	.048	.048	.058	795.90	432.27
.001504	25.	25.	25.	2	0	0	.00	76.73	509.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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 499.540
2800 NAT Q1= 423.34 WSEL= 802.99 ENC Q1= 423.34 WSEL= 803.09 RATIO= -.0000
NAT Q1= 435. RATIOS LOB,CH,ROB= .0567 .9171 .0262 WSEL= 803.09

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 808.40 MAX ELLC= 805.40

3470 ENCROACHMENT STATIONS= 1009.0 1074.2 TYPE= 4 TARGET= .026
CROSS SECTION AT DOWNSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

499.54	7.17	803.07	.00	802.99	803.34	.27	.04	.01	797.90
1660.	81.	1556.	23.	28.	365.	13.	258.	100.	797.90
1.36	2.87	4.27	1.84	.048	.048	.048	.058	795.90	1009.01
.001537	25.	25.	25.	0	0	0	.00	65.15	1074.16

*SECNO 499.590
2800 NAT Q1= 432.07 WSEL= 803.08 ENC Q1= 432.07 WSEL= 803.18 RATIO= .0000
NAT Q1= 445. RATIOS LOB,CH,ROB= .0577 .9153 .0270 WSEL= 803.18

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 808.40 MAX ELLC= 805.40

3470 ENCROACHMENT STATIONS= 1009.1 1074.0 TYPE= 4 TARGET= .029
CROSS SECTION AT UPSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

499.59	7.25	803.15	.00	803.08	803.42	.27	.08	.00	797.90
1660.	82.	1556.	22.	29.	368.	12.	259.	100.	797.90
1.37	2.86	4.22	1.80	.048	.048	.048	.058	795.90	1009.08
.001486	50.	50.	50.	0	0	0	.00	64.96	1074.05

1490 NH CARD USED
*SECNO 499.620

3470 ENCROACHMENT STATIONS= 759.4 859.1 TYPE= 1 TARGET= 99.700
CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE

CONVEYANCE LEFT OF STA 759.4 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 859.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

499.62	8.72	803.22	.00	803.12	803.46	.24	.04	.01	797.90
1660.	24.	1611.	24.	34.	400.	34.	259.	100.	797.90
1.37	.71	4.03	.71	.144	.054	.144	.057	794.50	775.34
.001441	25.	25.	25.	2	0	0	.00	77.74	853.08

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	AROB	VOL	TOA	LEFT/RIGHT
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 499.640
2800 NAT Q1= 431.57 WSEL= 803.16 ENC Q1= 431.57 WSEL= 803.26 RATIO= .0000
NAT Q1= 442. RATIOS LOB,CH,ROB= .0149 .9702 .0149 WSEL= 803.26

3470 ENCROACHMENT STATIONS= 786.8 841.6 TYPE= 4 TARGET= .023
CROSS SECTION G

499.64	8.74	803.24	.00	803.16	803.51	.26	.04	.01	797.90
1660.	3.	1654.	3.	7.	402.	7.	259.	100.	797.90
1.37	.43	4.11	.43	.144	.054	.144	.057	794.50	786.79
.001495	25.	25.	25.	0	0	0	.00	54.82	841.61

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 500.600
2800 NAT Q1= 464.93 WSEL= 804.47 ENC Q1= 464.93 WSEL= 804.57 RATIO= .0000
NAT Q1= 475. RATIOS LOB,CH,ROB= .0159 .9697 .0144 WSEL= 804.57

3470 ENCROACHMENT STATIONS= 566.9 613.8 TYPE= 4 TARGET= .021
CROSS SECTION H

CONVEYANCE LEFT OF STA 555.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

500.60	10.26	804.56	.00	804.47	804.84	.27	1.33	.00	797.90
1660.	7.	1648.	4.	14.	391.	10.	269.	101.	797.90
1.43	.53	4.22	.45	.144	.054	.144	.057	794.30	566.90
.001284	950.	960.	950.	2	0	0	.00	46.93	613.84

1490 NH CARD USED
*SECNO 501.470
2800 NAT Q1= 292.32 WSEL= 806.06 ENC Q1= 292.32 WSEL= 806.16 RATIO= .0000
NAT Q1= 301. RATIOS LOB,CH,ROB= .0943 .8468 .0589 WSEL= 806.16

3470 ENCROACHMENT STATIONS= 700.3 775.8 TYPE= 4 TARGET= .028
CROSS SECTION I

501.47	6.96	806.16	.00	806.06	806.54	.38	1.67	.03	800.80
1660.	136.	1435.	88.	95.	272.	55.	277.	102.	800.80
1.48	1.44	5.28	1.59	.144	.054	.141	.057	799.20	700.31
.003182	880.	870.	860.	2	0	0	.00	75.50	775.81

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO -96.490
START TRIB COMP
-96.490 96.490 799.730
WATER EL=X5 CARD= 799.410

3470 ENCROACHMENT STATIONS= 850.0 1126.0 TYPE= 1 TARGET= 276.000
CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

-96.49	7.51	799.41	.00	799.66	799.76	.35	.00	.00	793.90
1660.	30.	1616.	14.	57.	337.	19.	281.	104.	793.90
1.51	.53	4.80	.73	.110	.054	.144	.057	791.90	850.00
.002254	530.	430.	500.	0	0	0	.00	276.00	1126.00

1490 NH CARD USED
*SECNO 497.300

3470 ENCROACHMENT STATIONS= 700.0 950.0 TYPE= 1 TARGET= 250.000
CROSS SECTION E

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.30	8.68	800.38	.00	800.50	800.41	.04	.62	.03	792.50
550.	68.	472.	11.	204.	265.	35.	268.	108.	794.40
1.63	.33	1.66	.30	.120	.054	.144	.057	791.70	700.00
.000228	650.	650.	700.	2	0	0	.00	241.66	941.66

1490 NH CARD USED
*SECNO 497.640

3470 ENCROACHMENT STATIONS= 800.0 935.0 TYPE= 1 TARGET= 135.000
CROSS SECTION AT DOWNSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.64	8.26	800.46	.00	800.57	800.50	.05	.08	.00	793.00
550.	54.	489.	7.	108.	270.	22.	292.	110.	794.90
1.69	.50	1.81	.33	.120	.054	.144	.057	792.20	800.00
.000291	320.	330.	330.	2	0	0	.00	135.00	935.00

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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= .300 CEHV= .500
*SECNO 497.660

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 800.0 930.0 TYPE= 1 TARGET= 130.000
CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

497.66	8.26	800.46	.00	800.57	800.52	.06	.01	.01	802.00
550.	6.	544.	0.	35.	271.	0.	292.	110.	802.00
1.69	.17	2.01	.00	.120	.054	.120	.057	792.20	800.00
.000544	25.	25.	25.	0	0	0	.00	111.97	929.80

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
.90	1.50	2.40	.00	34.30	4.50	233.20	.00	792.20	792.20

*SECNO 497.680

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	W3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
800.59	800.52	.01	107.	443.	233.	203.	799.00	799.80

3470 ENCROACHMENT STATIONS= 790.0 930.0 TYPE= 1 TARGET= 140.000
CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

497.68	8.28	800.48	.00	800.58	800.54	.06	.02	.00	802.00
550.	7.	543.	0.	39.	271.	0.	292.	110.	802.00
1.69	.17	2.00	.00	.120	.054	.120	.057	792.20	790.00
.000540	15.	15.	15.	2	0	4	.00	122.17	929.80

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	MACH	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

1490 NH CARD USED
*SECNO 497.710

3470 ENCROACHMENT STATIONS= 820.0 935.0 TYPE= 1 TARGET= 115.000
CROSS SECTION AT UPSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.71	8.31	800.51	.00	800.61	800.56	.04	.01	.01	793.00
550.	55.	488.	7.	109.	272.	22.	292.	110.	794.90
1.70	.50	1.79	.32	.120	.054	.144	.057	792.20	820.00
.000285	30.	30.	30.	1	0	0	.00	115.00	935.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 498.440

3470 ENCROACHMENT STATIONS= .0 550.0 TYPE= 1 TARGET= 549.999
CROSS SECTION EF

CONVEYANCE RIGHT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

498.44	7.96	800.76	.00	800.85	800.84	.07	.27	.01	794.70
550.	69.	443.	38.	99.	184.	84.	299.	112.	794.70
1.80	.69	2.40	.46	.144	.054	.144	.057	792.80	275.41
.000545	700.	710.	720.	2	0	0	.00	109.75	385.16

1490 NH CARD USED
*SECNO 498.700
2800 NAT Q1= 260.72 WSEL= 801.13 ENC Q1= 261.72 WSEL= 801.23 RATIO= -.0038
NAT Q1= 269. RATIOS LOB,CH,ROB= .0141 .9742 .0117 WSEL= 801.23

3470 ENCROACHMENT STATIONS= 626.8 676.6 TYPE= 4 TARGET= .026
CROSS SECTION F

498.70	8.18	801.08	.00	801.13	801.14	.06	.30	.00	798.30
550.	0.	550.	0.	0.	288.	0.	303.	113.	798.30
1.88	.00	1.91	.00	.144	.144	.144	.056	792.90	626.80
.000518	500.	560.	600.	2	0	0	.00	49.80	676.60

1) COUNTY: LENAWEE

2) STUDY NAME: CLINTON, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED APRIL 1980
  ERROR CORR -  01,02,03,04
  MODIFICATION -  50,51,52,53,54
**********************************************

C
T1      HUD FLOOD INSURANCE STUDIES  H-3970  WILLIAMS & WORKS
T2      VILLAGE OF CLINTON      RIVER RAISIN
T3      CLINTON, RIVER RAISIN   100-YEAR FLOOD

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
        0.       2.        0.        0.   .000000       .00     -1.0        0.   789.840     .000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    1.000       .000    -1.000      .000      .000     1.200      .000      .000      .000      .000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    150.000   200.000      .000      .000      .000      .000      .000      .000      .000      .000

NC      .100      .100      .045      .100      .300      .000      .000      .000      .000      .000
QT     5.000  1660.000. 1660.000 2140.000 1430.000  850.000      .000      .000      .000      .000
ET      .000  7.100     1.400     .000      .000      .000      854.900   2304.100  .000      .000
NH     6.000  .120      521.200   .060      975.800   .120      1530.600  .045      1584.600  .120
NH  2099.800  .060      2304.100  .000      .000      .000      .000      .000      .000      .000

        CROSS SECTION AA

        CONVEYANCE  LEFT OF STA  854.9 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1  486.720   36.000    1530.600  1584.600  .000      .000      .000      .000      .000      .000
GR  812.100   .000      811.600   48.500    811.600   125.300   806.800   231.800   805.000   318.700
GR  788.400   414.600   789.900   521.200   791.700   613.100   792.800   743.700   799.200   854.900
GR  790.100   975.800   789.100   1124.900  787.100   1309.400  788.400   1423.000  784.900   1530.600
GR  783.100   1533.600  782.900   1537.600  783.500   1547.600  783.500   1557.600  783.200   1567.600
GR  783.500   1577.600  783.700   1583.600  784.900   1584.600  788.100   1614.200  787.200   1699.800
GR  789.500   1756.600  790.500   1825.000  790.500   1872.600  791.000   1917.600  793.900   1988.800
GR  797.700   2052.500  797.700   2099.800  797.700   2155.800  798.400   2224.500  801.100   2275.900
GR  800.300   2304.100  .000      .000      .000      .000      .000      .000      .000      .000
ET      .000  7.100     9.100     .000      .000      .000      801.500   4549.900  1150.000  1550.000
NH     5.000  .060      801.500   .120      1462.900  .045      1508.900  .120      1705.200  .060
NH  4549.900  .000      .000      .000      .000      .000      .000      .000      .000      .000
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CROSS SECTION AB

CONVEYANCE LEFT OF STA 801.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	487.790	35.000	1462.900	1508.900	830.000	1050.000	1070.000	.000	.000	.000
GR	809.100	.000	806.800	118.000	792.700	291.500	790.100	479.300	790.100	630.200
GR	790.100	801.500	790.100	932.900	790.100	1102.000	790.000	1235.800	790.100	1387.600
GR	788.700	1448.400	785.600	1462.900	784.800	1465.900	783.800	1470.900	782.900	1475.900
GR	782.300	1480.900	782.500	1485.900	782.900	1490.900	783.300	1495.900	783.700	1500.900
GR	784.300	1505.900	785.600	1508.900	792.900	1582.400	796.300	1705.200	799.400	1829.800
GR	802.500	2018.800	803.300	2206.300	803.600	2395.300	807.400	2571.700	807.500	2715.700
GR	807.500	2895.300	810.000	3052.400	812.400	3248.800	815.900	3381.200	801.700	4549.900
ET	.000	.000	9.100	.000	.000	.000	.000	.000	600.000	1350.000
NH	5.000	.060	470.800	.120	882.900	.045	918.400	.120	1426.300	.060
NH	2519.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AC

X1	490.140	26.000	882.900	918.400	1020.000	1100.000	2350.000	.000	.000	.000
GR	816.000	.000	810.100	124.100	795.800	327.300	792.000	470.800	792.500	655.200
GR	792.000	878.400	787.300	882.900	785.000	887.900	784.800	892.900	785.200	897.900
GR	785.400	902.900	785.700	907.900	786.200	912.900	786.800	917.900	787.300	918.400
GR	792.300	1007.400	792.400	1278.100	795.000	1426.300	800.900	1557.700	803.000	1679.200
GR	805.000	1815.300	801.100	1950.900	802.900	2081.900	802.900	2223.900	802.900	2355.300
GR	816.000	2519.300	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1100.100	200.000	950.000
NH	5.000	.060	354.000	.120	451.100	.045	531.100	.120	673.400	.060
NH	2510.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION A

CONVEYANCE RIGHT OF STA 1100.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	491.740	31.000	451.100	531.100	600.000	580.000	1600.000	.000	.000	.000
GR	816.000	.000	798.300	71.900	792.100	153.900	792.100	243.400	792.100	354.000
GR	792.500	430.800	789.000	451.100	788.200	453.100	788.000	455.100	787.400	460.100
GR	787.400	465.100	787.100	475.100	787.800	485.100	788.400	495.100	789.000	497.600
GR	789.800	506.100	789.000	516.100	788.600	520.100	789.000	531.100	793.400	535.600
GR	793.500	673.400	794.000	1100.100	794.000	1198.400	794.700	1342.800	795.000	1470.400
GR	802.100	1687.800	803.800	1912.400	801.700	2039.000	802.300	2182.800	804.200	2352.300
GR	816.000	2510.300	.000	.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	700.000
NH	5.000	.060	360.000	.120	421.000	.045	473.500	.120	841.600	.060
NH	1726.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION B1

X1	492.340	18.000	421.000	473.500	550.000	680.000	595.000	.000	.000	.000
GR	816.000	.000	793.400	98.100	793.400	360.000	793.400	410.000	789.000	421.000
GR	786.800	425.000	786.800	435.000	788.700	449.500	792.500	473.500	793.700	488.900
GR	793.700	719.900	793.700	841.600	796.300	1009.200	796.400	1165.500	796.400	1319.500
GR	798.100	1442.000	796.900	1569.400	804.500	1726.300	.000	.000	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	700.000
NH	5.000	.060	360.000	.120	421.000	.045	473.500	.120	841.600	.060
NH	1726.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

X1	492.370	.000	.000	.000	40.000	40.000	40.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	720.000
NH	5.000	.060	360.000	.120	421.000	.045	473.500	.120	841.600	.060
NH	1726.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	492.380	23.000	421.000	473.500	10.000	10.000	10.000	.000	.000	.000
X2	.000	.000	.000	795.600	797.000	.000	.000	.000	.000	.000
GR	816.000	.000	793.400	98.100	793.400	360.000	797.000	421.000	789.000	421.000
GR	786.800	425.000	786.400	435.000	787.500	440.000	788.200	445.000	788.700	449.500
GR	789.500	455.000	790.100	460.000	790.900	465.000	792.500	473.500	797.000	473.500
GR	793.700	719.900	793.700	841.600	796.300	1009.200	796.400	1165.500	796.400	1319.500
GR	798.100	1442.000	796.900	1569.400	804.500	1726.300	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	720.000

CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	492.400	.000	.000	.000	15.000	15.000	15.000	.000	.000	.000
X2	.000	.000	.000	795.600	797.000	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	720.000
NH	5.000	.060	360.000	.120	421.000	.045	473.500	.120	841.600	.060
NH	1726.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

X1	492.410	18.000	421.000	473.500	10.000	10.000	10.000	.000	.000	.000
GR	816.000	.000	793.400	98.100	793.400	360.000	793.400	410.000	789.000	421.000
GR	786.800	425.000	786.800	435.000	788.700	449.500	792.500	473.500	793.700	488.900
GR	793.700	719.900	793.700	841.600	796.300	1009.200	796.400	1165.500	796.400	1319.500
GR	798.100	1442.000	796.900	1569.400	804.500	1726.300	.000	.000	.000	.000

ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	720.000
NH	5.000	.060	360.000	.120	421.000	.045	473.500	.120	841.600	.060
NH	1726.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION B2

X1	492.450	.000	.000	.000	40.000	40.000	40.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	100.000	800.000
NH	5.000	.060	315.200	.120	420.700	.045	484.700	.120	841.600	.060
NH	2427.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION B

X1	492.950	33.000	420.700	484.700	500.000	450.000	500.000	.000	.000	.000
GR	816.000	.000	793.400	98.100	793.400	210.600	793.400	315.200	793.400	404.100
GR	790.000	420.700	789.500	425.700	789.400	430.700	789.200	435.700	789.000	440.700
GR	788.700	445.700	788.600	450.700	788.400	455.700	788.200	460.700	788.100	465.700
GR	788.600	470.700	788.800	475.700	788.900	480.700	790.000	484.700	793.700	488.900
GR	793.700	719.900	793.700	841.600	796.300	1009.200	796.400	1165.500	796.400	1319.500
GR	798.100	1442.000	796.900	1569.400	804.500	1726.300	802.700	1928.500	803.000	2075.400
GR	804.000	2220.500	806.300	2351.000	816.000	2427.300	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	900.000	1200.000	900.000	1200.000
NH	5.000	.060	874.000	.120	1065.600	.045	1100.600	.120	1433.300	.060
NH	3329.600	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION C

CONVEYANCE RIGHT OF STA 1138.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	494.400	29.000	1065.600	1100.600	1500.000	1370.000	1450.000	.000	.000	.000
GR	820.900	.000	818.700	66.800	818.700	238.500	815.500	392.800	798.300	550.500
GR	795.600	727.600	795.600	874.000	791.700	1065.600	790.600	1067.600	788.900	1072.600
GR	788.500	1077.600	788.400	1082.600	788.500	1087.600	789.400	1092.600	790.300	1097.600
GR	791.700	1100.600	797.900	1138.500	797.300	1289.800	797.300	1433.300	795.000	1611.300
GR	795.000	1826.800	797.600	2021.300	800.300	2191.200	803.500	2413.600	804.000	2621.400
GR	806.300	2837.000	808.000	3060.500	810.100	3249.900	815.200	3329.600	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	935.000	1420.000	1000.000	1370.000
NH	5.000	.070	740.000	.120	1050.000	.045	1085.000	.120	1100.000	.060
NH	3500.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION DC

CONVEYANCE RIGHT OF STA 1420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	495.150	25.000	1050.000	1085.000	530.000	800.000	750.000	.000	.000	.000
GR	820.000	.000	816.000	40.000	815.500	740.000	812.000	855.000	808.000	865.000
GR	804.000	890.000	800.000	935.000	796.000	1035.000	793.200	1050.000	792.100	1052.000
GR	790.400	1057.000	790.000	1062.000	789.000	1067.000	790.000	1072.000	790.900	1077.000
GR	791.800	1082.000	793.200	1085.000	796.000	1100.000	796.000	1420.000	798.500	1850.000

GR	800.000	2250.000	804.000	2325.000	808.000	3250.000	812.000	3350.000	816.000	3500.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	750.000	1110.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION D1

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	495.970	33.000	1058.900	1105.900	700.000	810.000	820.000	.000	.000	.000
GR	816.900	.000	816.600	103.900	811.500	224.200	802.400	302.500	800.000	405.300
GR	800.000	570.200	797.500	737.900	797.800	912.100	798.000	1052.000	793.700	1058.900
GR	792.400	1060.900	791.900	1065.900	792.000	1070.900	792.100	1075.900	791.900	1080.900
GR	791.800	1085.900	791.700	1090.900	791.700	1095.900	792.300	1102.900	793.700	1105.900
GR	798.900	1111.800	799.600	1190.500	798.300	1337.600	800.500	1489.100	799.600	1612.600
GR	800.000	1841.300	799.300	2091.900	809.200	2245.500	810.200	2386.500	807.800	2545.700
GR	809.600	2719.700	812.400	2892.300	815.900	3010.200	.000	.000	.000	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	750.000	1110.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	496.010	.000	.000	.000	45.000	45.000	45.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	750.000	1110.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	496.020	35.000	1058.900	1105.900	5.000	5.000	5.000	.000	.000	.000
GR	816.900	.000	816.600	103.900	811.500	224.200	802.400	302.500	800.000	405.300
GR	800.000	570.200	797.500	737.900	797.800	912.100	799.000	1052.000	793.700	1055.000
GR	793.700	1058.900	792.400	1060.900	791.900	1065.900	792.000	1070.900	792.100	1075.900
GR	791.900	1080.900	791.800	1085.900	791.700	1090.900	791.700	1095.900	792.300	1102.900
GR	793.700	1105.900	799.000	1109.000	799.000	1111.800	799.600	1190.500	798.300	1337.600
GR	800.500	1489.100	799.600	1612.600	800.000	1841.300	799.300	2091.900	809.200	2245.500
GR	810.200	2386.500	807.800	2545.700	809.600	2719.700	812.400	2892.300	815.900	3010.200
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	750.000	1110.000
SB	1.250	1.500	2.500	.000	38.700	1.400	274.300	1.000	791.700	.000

CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	496.030	.000	.000	.000	10.000	10.000	10.000	.000	.000	.000
X2	.000	.000	1.000	797.800	799.000	.000	.000	.000	.000	.000
BT	28.000	.000	816.900	816.900	103.900	816.600	816.600	224.200	811.500	811.500
BT	302.500	802.400	802.400	405.300	800.000	800.000	570.200	800.000	800.000	737.900
BT	797.500	797.500	912.100	797.800	797.800	1052.000	799.000	799.000	1055.000	799.000
BT	799.000	1055.000	799.000	797.800	1058.900	799.000	797.800	1105.900	799.000	797.800
BT	1109.000	799.000	797.800	1109.000	799.000	799.000	1111.800	799.000	799.000	1190.500
BT	799.600	799.600	1337.600	798.300	798.300	1489.100	800.500	800.500	1612.600	799.600
BT	799.600	1841.300	800.000	800.000	2091.900	799.300	799.300	2245.500	809.200	809.200
BT	2386.500	810.200	810.200	2545.700	807.800	807.800	2719.700	809.600	809.600	2892.300
BT	812.400	812.400	3010.200	815.900	815.900	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	700.000	1110.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	496.040	33.000	1058.900	1105.900	5.000	5.000	5.000	.000	.000	.000
GR	816.900	.000	816.600	103.900	811.500	224.200	802.400	302.500	800.000	405.300
GR	800.000	570.200	797.800	737.900	797.800	912.100	797.500	1052.000	793.700	1058.900
GR	792.400	1060.900	791.900	1065.900	792.000	1070.900	792.100	1075.900	791.900	1080.900
GR	791.800	1085.900	791.700	1090.900	791.700	1095.900	792.300	1102.900	793.700	1105.900
GR	799.000	1111.800	799.600	1190.500	798.300	1337.600	800.500	1489.100	799.600	1612.600
GR	800.000	1841.300	799.300	2091.900	809.200	2245.500	810.200	2386.500	807.800	2545.700
GR	809.600	2719.700	812.400	2892.300	815.900	3010.200	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	1190.500	700.000	1110.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION D

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	496.060	.000	.000	.000	25.000	25.000	25.000	.000	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	925.000	1190.500	925.000	1126.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	96.490	.000	.000	.000	530.000	500.000	430.000	.000	.200	.000
QT	5.000	1110.000	1110.000	1450.000	950.000	530.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	943.100	3128.300	1050.000	1400.000
NH	5.000	.100	888.800	.120	1138.600	.045	1185.000	.120	1276.200	.055
NH	3128.300	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION E

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	497.310	44.000	1138.600	1185.000	650.000	750.000	820.000	.000	.000	.000
GR	819.900	.000	819.400	74.800	819.300	183.000	819.400	326.700	801.800	366.200
GR	800.000	446.000	799.900	594.200	799.800	780.100	799.800	870.000	794.400	888.800
GR	792.500	895.500	792.700	901.500	791.900	906.500	791.800	915.500	791.700	928.000
GR	794.400	929.800	801.100	943.100	801.600	996.800	796.500	1124.400	794.900	1138.600
GR	793.600	1148.000	792.700	1153.000	792.000	1158.000	792.100	1163.000	792.200	1168.000
GR	792.400	1173.000	792.400	1178.000	794.200	1183.000	794.900	1185.000	798.500	1199.400
GR	798.500	1276.200	799.300	1411.000	800.900	1629.000	802.300	1828.700	804.200	1982.100
GR	808.100	2132.100	808.100	2279.500	810.500	2421.300	813.700	2568.000	812.000	2721.900
GR	812.500	2858.400	812.300	2960.100	814.600	3053.000	821.800	3128.300	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	943.100	3128.300	1050.000	1400.000

CROSS SECTION E'

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	497.720	.000	.000	.000	400.000	450.000	410.000	.000	.500	.000
ET	.000	7.100	9.100	.000	.000	.000	550.000	1200.000	650.000	875.000
NH	7.000	.100	210.000	.120	300.000	.045	325.000	.120	680.000	.045
NH	726.400	.120	820.000	.060	1650.000	.000	.000	.000	.000	.000

CROSS SECTION EF

CONVEYANCE LEFT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 1200.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	498.430	32.000	680.000	726.400	700.000	720.000	710.000	.000	.000	.000
GR	825.700	.000	820.000	210.000	816.000	230.000	812.000	238.000	808.000	240.000
GR	804.000	256.000	800.000	280.000	796.000	284.000	794.700	300.000	793.700	305.000
GR	792.900	310.000	792.800	320.000	794.700	325.000	800.000	345.000	802.000	450.000
GR	802.700	550.000	800.000	675.000	795.600	680.000	794.300	689.400	793.400	694.400
GR	792.700	699.400	792.800	704.400	792.900	709.400	793.100	714.400	793.100	719.400
GR	794.900	724.400	795.600	726.400	800.000	750.000	800.000	820.000	802.200	1200.000
GR	804.000	1550.000	808.000	1650.000	.000	.000	.000	.000	.000	.000
ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
NH	5.000	.100	112.100	.120	626.800	.045	676.600	.120	805.300	.060
NH	1320.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION F

X1	498.690	25.000	626.800	676.600	280.000	170.000	260.000	.000	.000	.000
GR	825.700	.000	824.600	112.100	823.800	263.900	802.700	276.100	802.700	287.200
GR	802.700	315.200	802.700	320.200	802.700	359.300	802.700	595.500	798.800	624.500
GR	798.300	626.800	795.700	634.000	794.200	637.000	792.900	642.000	793.200	647.000
GR	793.700	652.000	794.200	657.000	795.400	662.000	797.000	667.000	798.300	676.600
GR	803.600	705.900	806.900	805.300	805.300	952.600	805.300	1106.100	802.500	1320.800
QT	5.000	1660.000	1660.000	2140.000	1430.000	850.000	.000	.000	.000	.000
NH	5.000	.055	430.000	.120	445.000	.045	500.000	.120	514.000	.060
NH	1190.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION F1

CONVEYANCE RIGHT OF STA 514.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	499.490	27.000	445.000	500.000	900.000	600.000	800.000	.000	.000	.000
X3	.000	.000	.000	410.000	.000	514.000	.000	.000	.000	.000
GR	820.000	.000	816.000	40.000	812.000	390.000	808.000	410.000	806.000	420.000
GR	804.000	430.000	802.300	434.000	800.000	439.000	798.000	444.000	797.900	445.000
GR	796.600	449.000	795.900	454.000	795.900	464.000	796.100	469.000	796.200	474.000
GR	796.300	479.000	796.400	484.000	796.500	489.000	797.100	494.000	797.800	499.000
GR	797.900	500.000	800.900	504.000	802.900	509.000	804.600	514.000	804.000	600.000
GR	808.000	1080.000	812.000	1190.000	.000	.000	.000	.000	.000	.000
NC	.040	.040	.040	.300	.500	.000	.000	.000	.000	.000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE

CONVEYANCE LEFT OF STA 420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 509.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	499.520	.000	.000	.000	25.000	25.000	25.000	.000	.000	.000
X3	.000	.000	.000	420.000	.000	509.000	.000	.000	.000	.000

CROSS SECTION AT DOWNSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

X1	499.540	46.000	1016.000	1071.000	25.000	25.000	25.000	.000	.000	.000
X2	.000	.000	.000	805.400	808.400	.000	.000	.000	.000	.000
GR	828.400	.000	828.100	84.800	826.300	176.400	824.300	268.700	821.200	367.300
GR	818.700	461.200	816.100	548.200	813.700	651.700	811.700	755.300	810.700	878.600
GR	808.500	995.000	803.900	1001.000	802.300	1005.000	800.000	1010.000	798.000	1015.000
GR	797.900	1016.000	796.600	1020.000	795.900	1025.000	795.900	1035.000	796.100	1040.000
GR	796.200	1045.000	796.300	1050.000	796.400	1055.000	796.500	1060.000	797.100	1065.000
GR	797.800	1070.000	797.900	1071.000	800.900	1075.000	802.900	1080.000	804.600	1085.000
GR	808.400	1091.500	810.500	1170.100	811.400	1324.400	810.300	1417.200	810.900	1493.200
GR	810.500	1577.300	811.600	1658.200	811.700	1735.500	812.900	1823.100	812.800	1902.000
GR	813.400	1990.300	814.000	2091.600	814.200	2192.300	815.000	2283.000	815.900	2411.800
GR	816.900	2600.800	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AT UPSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

X1	499.590	.000	.000	.000	50.000	50.000	50.000	.000	.000	.000
X2	.000	.000	.000	805.400	808.400	.000	.000	.000	.000	.000
NH	5.000	.100	385.400	.120	788.200	.045	840.200	.120	859.100	.060
NH	2382.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE

CONVEYANCE LEFT OF STA 759.4 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 859.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	499.620	30.000	788.200	840.200	25.000	25.000	25.000	.000	.000	.000
X3	.000	.000	.000	759.400	.000	859.100	.000	.000	.000	.000
GR	827.000	.000	829.000	98.100	820.300	98.600	819.000	218.200	811.400	385.400
GR	808.700	501.500	810.800	667.000	809.800	759.400	797.900	788.200	797.200	790.200
GR	796.700	793.200	796.000	798.200	795.500	803.200	795.300	808.200	795.000	813.200
GR	794.700	818.200	794.500	823.200	794.500	828.200	795.100	833.200	795.500	835.200
GR	797.900	840.200	805.700	859.100	804.200	1005.300	805.600	1224.500	809.200	1428.300
GR	813.600	1610.100	813.800	1836.300	814.400	2053.600	815.800	2244.400	813.700	2382.800
NH	5.000	.100	385.400	.120	788.200	.045	840.200	.120	859.100	.060
NH	2382.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION G

X1	499.640	.000	.000	.000	25.000	25.000	25.000	.000	.000	.000
NC	.100	.100	.045	.100	.300	.000	.000	.000	.000	.000
NH	5.000	.100	555.000	.120	569.200	.045	612.200	.120	626.700	.060
NH	2166.200	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION H

CONVEYANCE LEFT OF STA 555.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	500.600	27.000	569.200	612.200	950.000	950.000	960.000	.000	.000	.000
ET	.000	7.100	1.400	.000	.000	.000	555.000	2166.200	.000	.000
GR	830.000	.000	809.800	44.000	809.400	165.500	806.100	336.700	804.000	479.500
GR	807.400	555.000	797.900	569.200	796.300	574.200	795.200	579.200	794.800	585.200
GR	794.400	590.200	794.300	595.200	795.500	600.200	794.900	603.200	795.600	605.200
GR	796.900	610.200	797.900	612.200	807.500	626.700	805.300	767.300	806.400	932.900
GR	807.100	1162.300	808.500	1338.000	816.000	1439.600	816.200	1652.100	816.900	1867.800
GR	816.000	2038.500	815.500	2166.200	.000	.000	.000	.000	.000	.000
NH	5.000	.100	699.800	.120	720.800	.045	763.800	.120	774.800	.060
NH	4985.900	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION I

X1	501.470	32.000	720.800	763.800	880.000	860.000	870.000	.000	.000	.000
GR	830.500	.000	830.000	63.900	829.900	149.700	810.700	176.100	809.800	269.600
GR	807.800	366.100	807.800	486.200	806.900	597.500	809.600	694.700	802.300	699.800
GR	800.800	720.800	800.500	725.800	799.300	730.800	800.000	735.800	799.600	745.800
GR	799.200	755.800	800.800	763.800	802.100	774.800	808.800	782.800	808.400	820.100
GR	807.600	931.200	808.400	1086.300	810.500	1284.100	811.500	1466.800	814.600	1663.300
GR	820.500	1866.800	818.700	2045.400	819.900	2208.400	819.300	2286.500	813.600	3583.400
GR	813.600	3583.400	821.300	4985.900	.000	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	737.900	1190.500	850.000	1126.000
NH	4.000	.055	1052.000	.120	1058.900	.045	1105.900	.120	3010.200	.000

CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	-96.490	33.000	1058.900	1105.900	530.000	500.000	430.000	.000	.200	.000
X5	5.000	.000	799.410	.000	.000	.000	.000	.000	.000	.000
GR	816.900	.000	816.600	103.900	811.500	224.200	802.400	302.500	800.000	405.300
GR	800.000	570.200	799.500	737.900	799.000	912.100	799.000	1052.000	793.700	1058.900
GR	792.400	1060.900	791.900	1065.900	792.000	1070.900	792.100	1075.900	791.900	1080.900
GR	791.800	1085.900	791.700	1090.900	791.700	1095.900	792.300	1102.900	793.700	1105.900
GR	799.000	1111.800	799.600	1190.500	798.300	1337.600	800.500	1489.100	799.600	1612.600
GR	800.000	1841.300	799.300	2091.900	809.200	2245.500	810.200	2386.500	807.800	2545.700
GR	809.600	2719.700	812.400	2892.300	815.900	3010.200	.000	.000	.000	.000
QT	5.000	550.000	550.000	690.000	480.000	320.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	594.200	996.800	700.000	950.000
NH	3.000	.100	895.500	.045	929.800	.120	3128.300	.000	.000	.000

CROSS SECTION E

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	497.300	44.000	895.500	929.800	650.000	700.000	650.000	.000	.000	.000
GR	819.900	.000	819.400	74.800	819.300	183.000	819.400	326.700	801.800	366.200
GR	800.000	446.000	799.900	594.200	799.800	780.100	799.800	870.000	794.400	888.800
GR	792.500	895.500	792.700	901.500	791.900	906.500	791.800	915.500	791.700	928.000
GR	794.400	929.800	801.100	943.100	801.600	996.800	796.500	1124.400	794.900	1138.600
GR	793.600	1148.000	792.700	1153.000	792.000	1158.000	792.100	1163.000	792.200	1168.000
GR	792.400	1173.000	792.400	1178.000	794.200	1183.000	794.900	1185.000	798.500	1199.400
GR	798.500	1276.200	799.300	1411.000	800.900	1629.000	802.300	1828.700	804.200	1982.100
GR	809.100	2132.100	808.100	2279.500	810.500	2421.300	813.700	2568.000	812.000	2721.900
GR	812.500	2858.400	812.300	2960.100	814.600	3053.000	821.800	3128.300	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	870.000	996.800	800.000	935.000
NH	3.000	.100	895.500	.045	929.800	.120	3128.300	.000	.000	.000

CROSS SECTION AT DOWNSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	497.640	.000	.000	.000	320.000	330.000	330.000	.000	.500	.000
NC	.000	.000	.000	.300	.500	.000	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	780.100	929.800	800.000	930.000

CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	497.660	19.000	895.500	929.800	25.000	25.000	25.000	.000	.000	.000
GR	819.900	.000	819.400	74.800	819.300	183.000	819.400	326.700	802.300	366.200
GR	800.500	446.000	800.400	594.200	800.300	780.100	799.800	870.000	802.000	895.500
GR	793.000	895.500	793.200	901.500	792.400	906.500	792.300	915.500	792.200	928.000
GR	794.900	929.800	802.000	929.800	801.600	943.100	802.100	996.800	.000	.000
ET	.000	.000	9.100	.000	.000	.000	.000	.000	790.000	930.000
SB	.900	1.500	2.400	.000	34.300	4.500	233.200	.000	.000	.000

CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

X1	497.680	.000	.000	.000	15.000	15.000	15.000	.000	.000	.000
X2	.000	.000	1.000	799.000	799.800	.000	.000	.000	.000	.000
BT	15.000	.000	819.900	819.900	74.800	819.400	819.400	183.000	819.300	819.300
BT	326.700	819.400	819.400	366.200	802.300	802.300	446.000	800.500	800.500	594.200
BT	800.400	800.400	780.100	800.300	800.300	870.000	799.800	799.800	895.500	802.000
BT	802.000	895.500	802.000	799.000	929.800	802.000	799.000	929.800	802.000	802.000
BT	943.100	801.600	801.600	996.800	802.100	802.100	.000	.000	.000	.000
ET	.000	7.100	9.100	.000	.000	.000	.000	996.800	820.000	935.000
NH	3.000	.100	895.500	.045	929.800	.120	3128.300	.000	.000	.000

CROSS SECTION AT UPSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	497.710	44.000	895.500	929.800	30.000	30.000	30.000	.000	.500	.000
GR	819.900	.000	819.400	74.800	819.300	183.000	819.400	326.700	801.800	366.200
GR	800.000	446.000	799.900	594.200	799.800	780.100	799.800	870.000	794.400	888.800
GR	792.500	895.500	792.700	901.500	791.900	906.500	791.800	915.500	791.700	928.000
GR	794.400	929.800	801.100	943.100	801.600	996.800	796.500	1124.400	794.900	1138.600
GR	793.600	1148.000	792.700	1153.000	792.000	1158.000	792.100	1163.000	792.200	1168.000
GR	792.400	1173.000	792.400	1178.000	794.200	1183.000	794.900	1185.000	798.500	1199.400
GR	797.800	1276.200	799.300	1411.000	800.900	1629.000	802.300	1828.700	804.200	1982.100
GR	808.100	2132.100	808.100	2279.500	810.500	2421.300	813.700	2568.000	812.000	2721.900
GR	812.500	2858.400	812.300	2960.100	814.600	3053.000	821.800	3128.300	.000	.000
NC	.000	.000	.000	.100	.300	.000	.000	.000	.000	.000

ET	.000	.000	1.400	.000	.000	.000	.000	.000	.000	.000
NH	7.000	.100	210.000	.120	300.000	.045	325.000	.120	680.000	.045
NH	726.400	.120	820.000	.060	1650.000	.000	.000	.000	.000	.000

CROSS SECTION EF

CONVEYANCE RIGHT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

X1	498.440	32.000	300.000	325.000	700.000	720.000	710.000	.000	.000	.000
X3	.000	.000	.000	.000	.000	550.000	.000	.000	.000	.000
GR	825.700	.000	820.000	210.000	816.000	230.000	812.000	238.000	808.000	240.000
GR	804.000	256.000	800.000	280.000	796.000	284.000	794.700	300.000	793.700	305.000
GR	792.900	310.000	792.800	320.000	794.700	325.000	800.000	345.000	802.000	450.000
GR	802.700	550.000	800.000	675.000	795.600	680.000	794.300	689.400	793.400	694.400
GR	792.700	699.400	792.800	704.400	792.900	709.400	793.100	714.400	793.100	719.400
GR	794.900	724.400	795.600	726.400	800.000	750.000	800.900	820.000	802.200	1200.000
GR	804.000	1550.000	808.000	1650.000	.000	.000	.000	.000	.000	.000
NH	5.000	.100	112.100	.120	626.800	.045	676.600	.120	805.300	.060
NH	1320.800	.000	.000	.000	.000	.000	.000	.000	.000	.000

CROSS SECTION F

X1	498.700	25.000	626.800	676.600	500.000	600.000	560.000	.000	.000	.000
GR	825.700	.000	824.600	112.100	823.800	263.900	802.700	276.100	802.700	287.200
GR	802.700	315.200	802.700	320.200	802.700	359.300	802.700	595.500	799.800	624.500
GR	798.300	626.800	795.700	634.000	794.200	637.000	792.900	642.000	793.200	647.000
GR	793.700	652.000	794.200	657.000	795.400	662.000	797.000	667.000	798.300	676.600
GR	803.600	705.900	806.900	805.300	805.300	952.600	805.300	1106.100	802.500	1320.800
EJ	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000

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

*PROF 1

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 486.720

3470 ENCROACHMENT STATIONS= 854.9 2304.1 TYPE= 1 TARGET= 1449.200
CROSS SECTION AA

CONVEYANCE LEFT OF STA 854.9 ELIMINATED AS NON-EFFECTIVE FLOW AREA

486.72	6.94	789.84	.00	.00	789.91	.07	.00	.00	784.90
1660.	495.	967.	198.	943.	347.	375.	0.	0.	784.90
.00	.52	2.78	.53	.144	.054	.144	.000	782.90	1014.57
.000878	0.	0.	0.	0	0	0	.00	765.29	1779.86

1490 NH CARD USED
*SECNO 487.790

3470 ENCROACHMENT STATIONS= 801.5 4549.9 TYPE= 1 TARGET= 3748.400
CROSS SECTION AB

CONVEYANCE LEFT OF STA 801.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

487.79	8.57	790.87	.00	.00	791.05	.18	1.11	.03	785.60
1660.	247.	1311.	102.	609.	340.	140.	29.	15.	785.60
.09	.41	3.86	.73	.144	.054	.144	.057	782.30	801.50
.001392	830.	1070.	1050.	2	0	0	.00	760.46	1561.96

1490 NH CARD USED
*SECNO 490.140
CROSS SECTION AC

490.14	8.66	793.46	.00	.00	793.60	.13	2.54	.01	787.30
1660.	235.	1026.	399.	551.	278.	659.	70.	37.	787.30
.31	.43	3.70	.61	.137	.054	.144	.062	784.80	415.64
.001198	1020.	2350.	1100.	3	0	0	.00	922.93	1338.57

1490 NH CARD USED

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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 491.740
CROSS SECTION A

CONVEYANCE RIGHT OF STA 1100.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

491.74	7.41	794.51	.00	.00	794.56	.05	.95	.01	789.00
1660.	549.	1069.	42.	765.	496.	160.	98.	48.	789.00
.52	.72	2.16	.26	.087	.054	.144	.064	787.10	122.09
.000542	600.	1600.	580.	2	0	0	.00	551.32	673.40

1490 NH CARD USED
*SECNO 492.340
CROSS SECTION B1

492.34	8.13	794.93	.00	.00	795.02	.09	.46	.01	789.00
1660.	452.	990.	218.	524.	317.	511.	117.	58.	792.50
.59	.86	3.12	.43	.083	.054	.136	.063	786.80	91.46
.001194	550.	595.	680.	2	0	0	.00	829.48	920.93

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO 492.370
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

492.37	8.18	794.98	.00	.00	795.07	.09	.05	.00	789.00
1660.	460.	974.	225.	538.	320.	531.	119.	59.	792.50
.60	.86	3.05	.42	.083	.054	.135	.063	786.80	91.27
.001130	40.	40.	40.	1	0	0	.00	832.46	923.73

1490 NH CARD USED
*SECNO 492.380

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN.ELTRD= 797.00 MAX ELLC= 795.60

CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	NACH	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
			DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS						
492.38	8.59	794.99	.00	.00	795.10	.11	.01	.01	797.00
1660.	471.	1062.	127.	445.	327.	274.	119.	59.	797.00
.60	1.06	3.25	.46	.073	.054	.126	.063	786.40	91.17
.001525	10.	10.	10.	0	0	0	.00	650.31	925.11

*SECNO 492.400

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 797.00 MAX ELLC= 795.60

CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR FACTORY

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

492.40	8.61	795.01	.00	.00	795.12	.11	.02	.00	797.00
1660.	473.	1058.	128.	448.	327.	278.	119.	59.	797.00
.60	1.06	3.23	.46	.073	.054	.125	.063	786.40	91.13
.001506	15.	15.	15.	0	0	0	.00	651.97	925.78

1490 NH CARD USED

*SECNO 492.410

CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

492.41	8.26	795.06	.00	.00	795.14	.08	.01	.01	789.00
1660.	476.	945.	240.	567.	324.	570.	120.	59.	792.50
.60	.84	2.91	.42	.083	.054	.135	.063	786.80	90.88
.001012	10.	10.	10.	2	0	0	.00	838.53	929.41

1490 NH CARD USED

*SECNO 492.450

CROSS SECTION B2

492.45	8.31	795.11	.00	.00	795.18	.07	.04	.00	789.00
1660.	484.	928.	248.	584.	327.	594.	121.	60.	792.50
.61	.83	2.84	.42	.083	.054	.135	.063	786.80	90.67
.000952	40.	40.	40.	0	0	0	.00	841.99	932.65

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
1490 NH CARD USED
*SECNO 492.950
CROSS SECTION B

492.95	7.38	795.48	.00	.00	795.52	.04	.34	.00	790.00
1660.	457.	934.	268.	708.	423.	744.	140.	69.	790.00
.70	.65	2.21	.36	.089	.054	.132	.062	788.10	89.08
.000522	500.	500.	450.	2	0	0	.00	867.17	956.24

1490 NH CARD USED
*SECNO 494.400

3470 ENCROACHMENT STATIONS= 900.0 1200.0 TYPE= 1 TARGET= 300.000
CROSS SECTION C

CONVEYANCE RIGHT OF STA 1138.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

494.40	8.25	796.65	.00	.00	796.84	.19	1.27	.04	791.70
1660.	509.	1092.	59.	540.	257.	75.	185.	87.	791.70
.83	.94	4.26	.78	.144	.054	.144	.060	788.40	900.00
.001747	1500.	1450.	1370.	2	0	0	.00	230.85	1130.85

1490 NH CARD USED
*SECNO 495.150

3470 ENCROACHMENT STATIONS= 935.0 1420.0 TYPE= 1 TARGET= 485.000
CROSS SECTION DC

CONVEYANCE RIGHT OF STA 1420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

495.19	8.83	797.83	.00	.00	797.95	.12	1.10	.01	793.20
1660.	54.	911.	695.	90.	250.	632.	200.	93.	793.20
.91	.60	3.65	1.10	.144	.054	.076	.060	789.00	989.40
.001339	530.	750.	800.	2	0	0	.00	430.60	1420.00

1490 NH CARD USED
*SECNO 495.970
CROSS SECTION D1

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
		CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA							
495.97	7.22	798.92	.00	.00	799.10	.17	1.13	.01	793.70
1660.	418.	1232.	10.	455.	323.	15.	216.	100.	793.70
.99	.92	3.81	.63	.069	.054	.144	.059	791.70	642.33
.001500	700.	820.	810.	2	0	0	.00	469.47	1111.80

CCHV= .300 CEHV= .500
1490 NH CARD USED
*SECNO 496.010

3470 ENCROACHMENT STATIONS= .0 1190.5 TYPE= 1 TARGET= 1190.500
CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

496.01	7.31	799.01	.00	.00	799.16	.15	.06	.00	793.70
1660.	450.	1201.	10.	491.	327.	16.	217.	101.	793.70
.99	.92	3.67	.61	.069	.054	.144	.059	791.70	636.60
.001367	45.	45.	45.	2	0	0	.00	475.20	1111.80

1490 NH CARD USED
*SECNO 496.020
CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

496.02	7.31	799.01	.00	.00	799.18	.18	.01	.01	793.70
1660.	394.	1262.	4.	428.	327.	8.	217.	101.	793.70
.99	.92	3.86	.49	.072	.054	.144	.059	791.70	636.51
.001510	5.	5.	5.	1.	0	0	.00	475.29	1111.80

SPECIAL BRIDGE

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.50	2.50	.00	38.70	1.40	274.30	1.00	791.70	.00

*SECNO 496.030
6870 D.S. ENERGY OF 799.18 HIGHER THAN COMPUTED ENERGY OF 799.15
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
799.86	799.18	.00	959.	685.	274.	265.	797.80	799.00

3470 ENCROACHMENT STATIONS= .0 1190.5 TYPE= 1 TARGET= 1190.500
CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE NEAR VILLAGE WELLS

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

496.03	7.30	799.00	.00	.00	799.18	.18	.00	.00	793.70
1660.	391.	1265.	4.	425.	327.	8.	217.	101.	793.70
.99	.92	3.87	.49	.072	.054	.144	.059	791.70	636.93
.001520	10.	10.	10.	2	0	3	.00	474.87	1111.80

1490 NH CARD USED
*SECNO 496.040
CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO PRIVATE BRIDGE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

496.04	7.35	799.05	.00	.00	799.20	.15	.01	.01	793.70
1660.	462.	1189.	9.	498.	329.	16.	217.	101.	793.70
.99	.93	3.61	.59	.069	.054	.144	.059	791.70	642.48
.001314	5.	5.	5.	2	0	0	.00	469.32	1111.80

1490 NH CARD USED
*SECNO 496.060

3470 ENCROACHMENT STATIONS= .0 1190.5 TYPE= 1 TARGET= 1190.500
CROSS SECTION D

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	ML	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
496.06	7.39	799.09	.00	.00	799.23	.14	.03	.00	793.70
1660.	474.	1177.	9.	512.	331.	16.	217.	101.	793.70
.99	.92	3.56	.59	.069	.054	.144	.059	791.70	639.79
.001266	25.	25.	25.	0	0	0	.00	472.01	1111.80

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 96.490

3470 ENCROACHMENT STATIONS= 925.0 1190.5 TYPE= 1 TARGET= 265.500
CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

96.49	7.76	799.66	.00	.00	799.85	.19	.60	.01	793.90
1660.	309.	1339.	12.	258.	348.	18.	226.	105.	793.90
1.03	1.20	3.84	.65	.072	.054	.144	.059	791.90	925.00
.001380	530.	430.	500.	2	0	0	.00	186.80	1111.80

1490 NH CARD USED
*SECNO 497.310

3470 ENCROACHMENT STATIONS= 943.1 3128.3 TYPE= 1 TARGET= 2185.200
CROSS SECTION E

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.31	8.45	800.45	.00	.00	800.50	.05	.64	.01	794.90
1110.	108.	762.	240.	262.	347.	501.	241.	111.	794.90
1.16	.41	2.20	.48	.144	.054	.091	.059	792.00	1025.66
.000443	650.	820.	750.	2	0	0	.00	541.56	1567.21

*SECNO 497.720

3470 ENCROACHMENT STATIONS= 943.1 3128.3 TYPE= 1 TARGET= 2185.200
CROSS SECTION E'

CONVEYANCE LEFT OF STA 943.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.72	8.15	800.65	.00	.00	800.71	.07	.21	.00	795.40
1110.	104.	814.	192.	229.	333.	393.	251.	117.	795.40
1.22	.45	2.44	.49	.144	.054	.095	.058	792.50	1033.18
.000580	400.	410.	450.	2	0	0	.00	493.08	1526.26

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO 498.430

3470 ENCROACHMENT STATIONS= 550.0 1200.0 TYPE= 1 TARGET= 650.000
CROSS SECTION EF

CONVEYANCE LEFT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 1200.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

498.43	8.39	801.09	.00	.00	801.20	.11	.47	.01	795.60
1110.	14.	987.	110.	44.	344.	255.	264.	124.	795.60
1.30	.31	2.87	.43	.144	.054	.119	.058	792.70	624.76
.000763	700.	710.	720.	2	0	0	.00	382.69	1007.45

1490 NH CARD USED
*SECNO 498.690
CROSS SECTION F

498.69	8.40	801.30	.00	.00	801.50	.20	.28	.03	798.30
1110.	16.	1080.	14.	30.	299.	25.	266.	125.	798.30
1.32	.55	3.61	.54	.144	.054	.144	.058	792.90	605.89
.001641	280.	260.	170.	2	0	0	.00	87.30	693.20

1490 NH CARD USED
*SECNO 499.490

3470 ENCROACHMENT STATIONS= 410.0 514.0 TYPE= 1 TARGET= 104.000
CROSS SECTION F1

CONVEYANCE RIGHT OF STA 514.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

499.49	6.94	802.84	.00	.00	803.15	.32	1.62	.04	797.90
1660.	35.	1609.	16.	33.	351.	18.	273.	126.	797.90
1.37	1.07	4.58	.85	.144	.054	.144	.058	795.90	432.75
.002359	900.	800.	600.	2	0	0	.00	76.07	508.82

CCHV= .300 CEHV= .500
*SECNO 499.520

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	NL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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= 420.0 509.0 TYPE= 1 TARGET= 89.000

CROSS SECTION AT DOWNSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE

CONVEYANCE LEFT OF STA 420.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CONVEYANCE RIGHT OF STA 509.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

499.52	7.05	802.95	.00	.00	803.21	.27	.05	.01	797.90
1660.	91.	1527.	41.	34.	358.	19.	274.	126.	797.90
1.37	2.67	4.27	2.13	.048	.048	.048	.058	795.90	432.48
.001580	25.	25.	25.	2	0	0	.00	76.52	509.00

*SECNO 499.540

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 808.40 MAX ELLC= 805.40

CROSS SECTION AT DOWNSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

499.54	7.09	802.99	.00	.00	803.26	.26	.04	.00	797.90
1660.	92.	1526.	42.	35.	360.	20.	274.	126.	797.90
1.37	2.65	4.23	2.12	.048	.048	.048	.058	795.90	1003.26
.001538	25.	25.	25.	0	0	0	.00	77.02	1080.28

*SECNO 499.590

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 808.40 MAX ELLC= 805.40

CROSS SECTION AT UPSTREAM FACE OF US 12 (W. MICHIGAN AVENUE) BRIDGE

499.59	7.18	803.08	.00	.00	803.33	.26	.08	.00	797.90
1660.	94.	1523.	43.	36.	364.	21.	274.	126.	797.90
1.38	2.62	4.18	2.10	.048	.048	.048	.058	795.90	1003.08
.001476	50.	50.	50.	0	0	0	.00	77.42	1080.50

1490 NH CARD USED

*SECNO 499.620

3470 ENCROACHMENT STATIONS= 759.4 859.1 TYPE= 1 TARGET= 99.700

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
	CROSS SECTION AT UPSTREAM TOE OF EMBANKMENT TO US 12 BRIDGE								
	CONVEYANCE LEFT OF STA 759.4 ELIMINATED AS NON-EFFECTIVE FLOW AREA								
	CONVEYANCE RIGHT OF STA 859.1 ELIMINATED AS NON-EFFECTIVE FLOW AREA								
499.62	8.62	803.12	.00	.00	803.37	.25	.04	.00	797.90
1660.	24.	1613.	24.	33.	395.	33.	275.	127.	797.90
1.38	.72	4.08	.72	.144	.054	.144	.058	794.50	775.58
.001509	25.	25.	25.	0	0	0	.00	77.25	852.83
1490 NH CARD USED									
*SECNO 499.640									
	CROSS SECTION G								
499.64	8.66	803.16	.00	.00	803.41	.25	.04	.00	797.90
1660.	24.	1612.	24.	33.	397.	33.	275.	127.	797.90
1.38	.72	4.06	.72	.144	.054	.144	.058	794.50	775.48
.001480	25.	25.	25.	0	0	0	.00	77.46	852.94
CCHV= .100 CEHV= .300									
1490 NH CARD USED									
*SECNO 500.600									
3470 ENCROACHMENT STATIONS= 555.0 2166.2 TYPE= 1 TARGET= 1611.200									
	CROSS SECTION H								
	CONVEYANCE LEFT OF STA 555.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA								
500.60	10.17	804.47	.00	.00	804.73	.26	1.32	.00	797.90
1660.	23.	1613.	23.	32.	386.	33.	285.	128.	797.90
1.45	.72	4.17	.72	.144	.054	.144	.057	794.30	559.38
.001275	950.	960.	950.	2	0	0	.00	62.73	622.12
1490 NH CARD USED									
*SECNO 501.470									
	CROSS SECTION I								
501.47	6.86	806.06	.00	.00	806.44	.37	1.67	.03	800.80
1660.	155.	1408.	97.	100.	268.	60.	294.	130.	800.80
1.50	1.56	5.26	1.61	.143	.054	.133	.057	799.20	697.17
.003225	880.	870.	860.	2	0	0	.00	82.36	779.53

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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

1490 NH CARD USED
*SECNO -96.490
START TRIB COMP
-96.490 96.490 799.659

3470 ENCROACHMENT STATIONS= 737.9 1190.5 TYPE= 1 TARGET= 452.600
CROSS SECTION DE

CONVEYANCE RIGHT OF STA 1190.5 ELIMINATED AS NON-EFFECTIVE FLOW AREA

-96.49	7.76	799.66	.00	.00	799.96	.30	.00	.00	793.90
1660.	69.	1574.	17.	122.	348.	32.	299.	132.	793.90
1.53	.56	4.52	.52	.086	.054	.144	.057	791.90	752.20
.001909	530.	430.	500.	0	0	0	.00	419.80	1172.00

1490 NH CARD USED
*SECNO 497.300

3470 ENCROACHMENT STATIONS= 594.2 996.8 TYPE= 1 TARGET= 402.600
CROSS SECTION E

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.30	8.80	800.50	.00	.00	800.53	.03	.55	.03	792.50
550.	80.	459.	11.	295.	289.	37.	307.	138.	794.40
1.66	.27	1.59	.29	.120	.054	.144	.057	791.70	594.20
.000206	650.	650.	700.	2	0	0	.00	347.71	941.91

1490 NH CARD USED
*SECNO 497.640

3470 ENCROACHMENT STATIONS= 870.0 996.8 TYPE= 1 TARGET= 126.800
CROSS SECTION AT DOWNSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

497.64	8.37	800.57	.00	.00	800.61	.04	.08	.00	793.00
550.	54.	486.	10.	100.	274.	32.	311.	140.	794.90
1.71	.54	1.77	.32	.120	.054	.144	.057	792.20	870.00
.000274	320.	330.	330.	2	0	0	.00	71.06	941.06

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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= .300 CEHV= .500
*SECNO 497.660

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 780.1 929.8 TYPE= 1 TARGET= 149.700
CROSS SECTION AT DOWNSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

497.66	8.37	800.57	.00	.00	800.63	.06	.01	.01	802.00
550.	9.	541.	0.	51.	274.	0.	311.	140.	100000.00
1.72	.18	1.97	.00	.120	.054	.120	.057	792.20	780.10
.000516	25.	25.	25.	0	0	0	.00	133.20	929.80

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	.90	1.50	2.40	.00	34.30	4.50	233.20	.00	792.20	792.20

*SECNO 497.680

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
800.70	800.64	.01	156.	389.	233.	203.	799.00	799.80

CROSS SECTION AT UPSTREAM FACE OF PRIVATE BRIDGE ON SIDE CHANNEL

DIVIDED FLOW DUE TO PRESENCE OF BRIDGE ABUTMENTS

497.68	8.38	800.58	.00	.00	800.64	.06	.01	.00	802.00
550.	15.	535.	0.	113.	275.	0.	311.	140.	802.00
1.72	.13	1.95	.00	.120	.054	.120	.057	792.20	442.50
.000505	15.	15.	15.	2	0	0	.00	470.83	929.80

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	HACH	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
497.71	8.41	800.61	.00	.00	800.65	.04	.01	.00	793.00
550.	61.	479.	10.	198.	275.	32.	311.	140.	794.90
1.73	.31	1.74	.31	.120	.054	.144	.057	792.20	441.45
.000263	30.	30.	30.	1	0	0	.00	499.67	941.12

1490 NH CARD USED
*SECNO 497.710
CROSS SECTION AT UPSTREAM EMBANKMENT

CONVEYANCE RIGHT OF STA 996.8 ELIMINATED AS NON-EFFECTIVE FLOW AREA

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 498.440

3470 ENCROACHMENT STATIONS= .0 550.0 TYPE= 1 TARGET= 549.999
CROSS SECTION EF

CONVEYANCE RIGHT OF STA 550.0 ELIMINATED AS NON-EFFECTIVE FLOW AREA

498.44	8.05	800.85	.00	.00	800.92	.07	.26	.01	794.70
550.	69.	441.	40.	101.	186.	89.	319.	145.	794.70
1.82	.68	2.37	.45	.144	.054	.144	.057	792.80	274.93
.000522	700.	710.	720.	2	0	0	.00	114.44	389.37

1490 NH CARD USED
*SECND 498.700
CROSS SECTION F

498.70	8.23	801.13	.00	.00	801.19	.05	.27	.00	798.30
550.	7.	537.	6.	26.	291.	22.	323.	147.	798.30
1.91	.28	1.85	.27	.144	.054	.144	.057	792.90	607.14
.000445	500.	560.	600.	2	0	0	.00	85.13	692.27

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: CLINTON, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: REPORT

00BREAK00

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WATER MANAGEMENT

HYDRAULIC ANALYSIS OF RIVER RAISIN

VILLAGE OF CLINTON, LENAWEE COUNTY

Dexter

Historical Flooding:

The most significant flooding in recent times of the River Raisin in Clinton occurred on June 26, 1968, according to local officials. Areas between the river and the former mill race, and adjacent to the river near the sewage treatment plant are reportedly prone to flooding. Some storm sewer surcharging also reportedly occurred as a result. The magnitude of the June, 1968 flood, or of other floods is not known, nor is the precise elevation of the river crest during flooding.

Hydraulic Computations:

The hydraulic computations were made utilizing the November, 1976 (updated July, 1979) version of the Corps of Engineers HEC-2 water surface profiles computer program.

The flood discharges used in the analysis were as follows:

10-year	-	850 cfs
50-year	-	1430 cfs
100-year	-	1660 cfs
500-year	-	2140 cfs

These flows were determined in a separate hydrologic analysis by computer simulation techniques using the SCS TR-20 Hydrology Model. The computer output and resultant flows were submitted to and approved by letter by the Hydrologic Studies Unit - Water Management Division of the Michigan Department of Natural Resources on April 10, 1980. A copy of the letter is attached.

Backwater computations were initiated at a point, identified as cross section AA, approximately 2.82 miles (14,850 ft.) downstream from the Atles Mill Dam in Clinton, and continued upstream to the dam. The Michigan Avenue (US-12) Bridge and three smaller, private bridges were incorporated into the computations.

For all of the flood discharges, the starting water surface elevation utilized for the computations was 789.5 (U.S.G.S. Datum), at the cross section identified as AA. This elevation is normal depth at Section AA for the 100-year flood as determined by the slope-area method. Three cross sections (AA, AB, and AC) were located up to 3420 feet downstream of the designated detailed study reach for the purpose of determining accurate water surface elevations at cross section A (initial section within the designated study reach). Several runs were made to show that for each recurrence interval flood, normal depth for the 100-year flood at Section AA (789.5) was within a range of starting stages which caused flood stage profiles to converge at Section A. The following are resultant elevations at A:

Recurrence Interval Flood (years)	Elevation at Section A
500	794.61
100	794.18
100 (with floodway)	794.29
50	793.92
10	792.77

Sounds questionable ΔE is the only function of Qs

A region of divided flow was found to exist under 100-year flood conditions between cross sections DE and F, in a portion of the former mill race. The amount of flow in each of the two channels which would result in the same water surface elevation at the point of their convergence (Section F) was determined through a divided flow analysis. An explanation of the procedures used and computations is attached.

The Manning's roughness coefficients which were used in the hydraulic analysis are shown on the plotted cross sections. A uniform roughness coefficient of 0.045 was used for the channel as being representative of the somewhat irregular channel section below normal water levels. Side-bank and over-bank roughness coefficients were varied from 0.055 in areas of short grass and field crops to

0.120 in areas of heavy brush and tree growth. Expansion and contraction coefficients of 0.3 and 0.1, respectively, were used to represent the gradual nature of these transitions between cross sections. The coefficients were increased to 0.5 and 0.3 immediately upstream and downstream of the bridge sections to reflect more abrupt flow transitions at these points.

Artificial encroachments were utilized in the HEC-2 model to limit the effective conveyance area, particularly upstream and downstream from bridges and natural restrictions. Flow lines were assumed to expand at a 1:3 slope (a top width: a reach length) and contract at a 1:1 slope for the purpose of computing effective top-widths.

The floodway was determined by using encroachment method No. 5 with a maximum allowable flow stage increase of 0.10 feet above the natural 100-year flood stage. Where artificial encroachments were utilized to define the effective flow areas, these encroachments also delineated the floodway limits.

Bridge losses were checked by hand to verify the accuracy of HEC-2 results, using techniques presented in the Bureau of Public Roads publication Hydraulics of Bridge Waterways. In all cases, close agreement with the HEC-2 analysis was found, and thus no changes were made. A copy of the computations is attached.

Results:

As historical flood profile or discharge data was not available for the River Raisin in Clinton, verification of the computer model by these means was not possible. However, computer representation of the channel-floodplain geometry and other characteristics, and the resultant flood stages were checked for reasonableness and found to be acceptable.

Flood stages determined for the 100-and 500-year floods have been delineated on the attached work map as were the computed floodway limits. The 100-year flood stages and floodway limits are also shown on the cross section plots.

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GRAND RAPIDS, MICHIGAN

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WATER MANAGEMENT

Calculation Sheet

Computed by J. SORG	Subject DIVIDED FLOW ANALYSIS	Sheet 1 of 6
Checked by	Client HUD F.I.S.	Job No. E5376
		Date 16 APR '80

VILLAGE OF CLINTON - DIVIDED FLOW ANALYSIS

ASSUMPTIONS:
- DIVIDED FLOW OCCURS BETWEEN CROSS SECTIONS DE AND F.
- NO HYDRAULIC CONNECTION EXISTS BETWEEN THE MAIN AND SIDE CHANNELS IN THIS REGION.

PROCEDURE USED FOR DIVIDED FLOW ANALYSIS:
1. OBTAIN STARTING WATER SURFACES AT CROSS SECTION DE FOR EACH RECURRENCE INTERVAL FLOOD.
2. OBTAIN PRELIMINARY FLOW DISTRIBUTION FROM HEC-2 FOR EACH CHANNEL.
3. FOR MAIN CHANNEL AND SIDE CHANNEL (FORMER RACEWAY) SEPARATELY, INPUT A RANGE OF DISCHARGES TO THE HEC-2 PROGRAM, AS INDICATED BY PRELIMINARY FLOW DISTRIBUTION.
4. PLOT RESULTING FLOOD STAGE AT CROSS SECTION F TO DEVELOP A 'RATING CURVE' FOR EACH CHANNEL.
5. FROM GRAPHICAL ANALYSES OF THESE CURVES DETERMINE THE DISTRIBUTION OF FLOW BETWEEN THE TWO CHANNELS WHICH WILL YIELD THE SAME FLOOD STAGE AT CROSS SECTION F.
6. ANALYSIS OF PRIVATE BRIDGE ON SIDE CHANNEL, VERIFYING HEC-2 RESULTS.

ANALYSIS:

1. FROM HEC-2 ANALYSIS, STARTING WATER SURFACES AT CROSS SECTION DE ARE:

799.31	(100-YR FLOOD)	799.03	(50-YR FLOOD)
799.79	(500-YR FLOOD)	797.89	(10-YR FLOOD)

2. PRELIMINARY FLOW DISTRIBUTION BETWEEN THE TWO CHANNELS IS APPROXIMATELY 70% FOR THE MAIN CHANNEL AND 30% FOR THE SIDE CHANNEL.

3. EACH OF THE RECURRENCE INTERVAL FLOOD FLOWS WERE DISTRIBUTED APPROXIMATELY AS ABOVE BETWEEN THE TWO CHANNELS. DISCHARGES INPUT

AND RESULTING FLOOD STAGES ARE AS FOLLOWS:

RECURRENCE INTERVAL FLOOD	MAIN CHANNEL DISCHARGE (CFS)	MAIN CHANNEL STAGE @ (F)	SIDE CHANNEL DISCHARGE (CFS)	SIDE CHANNEL STAGE @ (F)
100-YR	1210	800.88	450	800.51
100-YR W/ENCR.	1210	800.88	450	800.67
500-YR	1540	801.41	600	801.19
50-YR	1040	800.55	390	800.08
10-YR	590	799.16	270	798.70

4. THE ABOVE DATA IS PLOTTED ON THE FOLLOWING PAGE FOR EACH CHANNEL, FORMING TWO RATING CURVES.

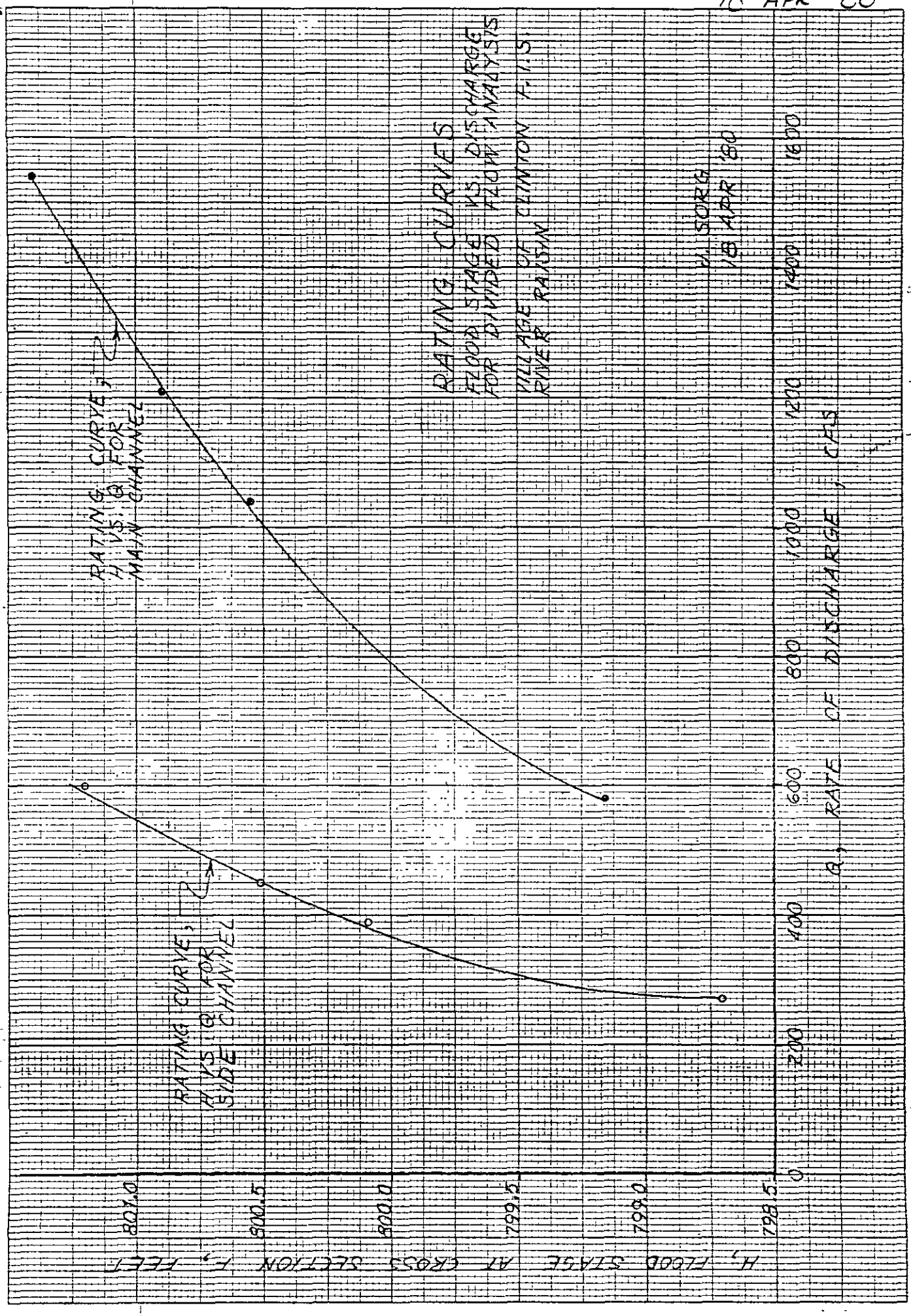
5. GRAPHICAL ANALYSIS OF RATING CURVES YIELDS THE FOLLOWING APPROXIMATE FLOOD STAGES AND FLOW DISTRIBUTIONS:

RECURRENCE INTERVAL FLOOD	DISCHARGE, CFS TOTAL	MAIN CHANNEL	SIDE CHANNEL	FLOOD STAGE @ (F)
100-YR	1660	1110	550	800.8
500-YR	2140	1450	690	801.4
50-YR	1430	950	480	800.4
10-YR	850	530	320	799.0

THE ABOVE ANALYSIS WAS PERFORMED ON WILLIAMS & WORKS IN-HOUSE COMPUTER. RESULTS USING THE ABOVE DISCHARGES FOR EACH CHANNEL HAVE ALSO BEEN RUN AT MICHIGAN STATE UNIVERSITY. RESULTING FLOOD ELEVATIONS AT CROSS SECTION F ARE ON PAGE 4.

J. DORG

SHEET 3 OF 6
18 APR '80



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Calculation Sheet

Computed by J SORG | Subject | Sheet 4 of 6
Checked by | Client | Job No. | Date 18 APR '80

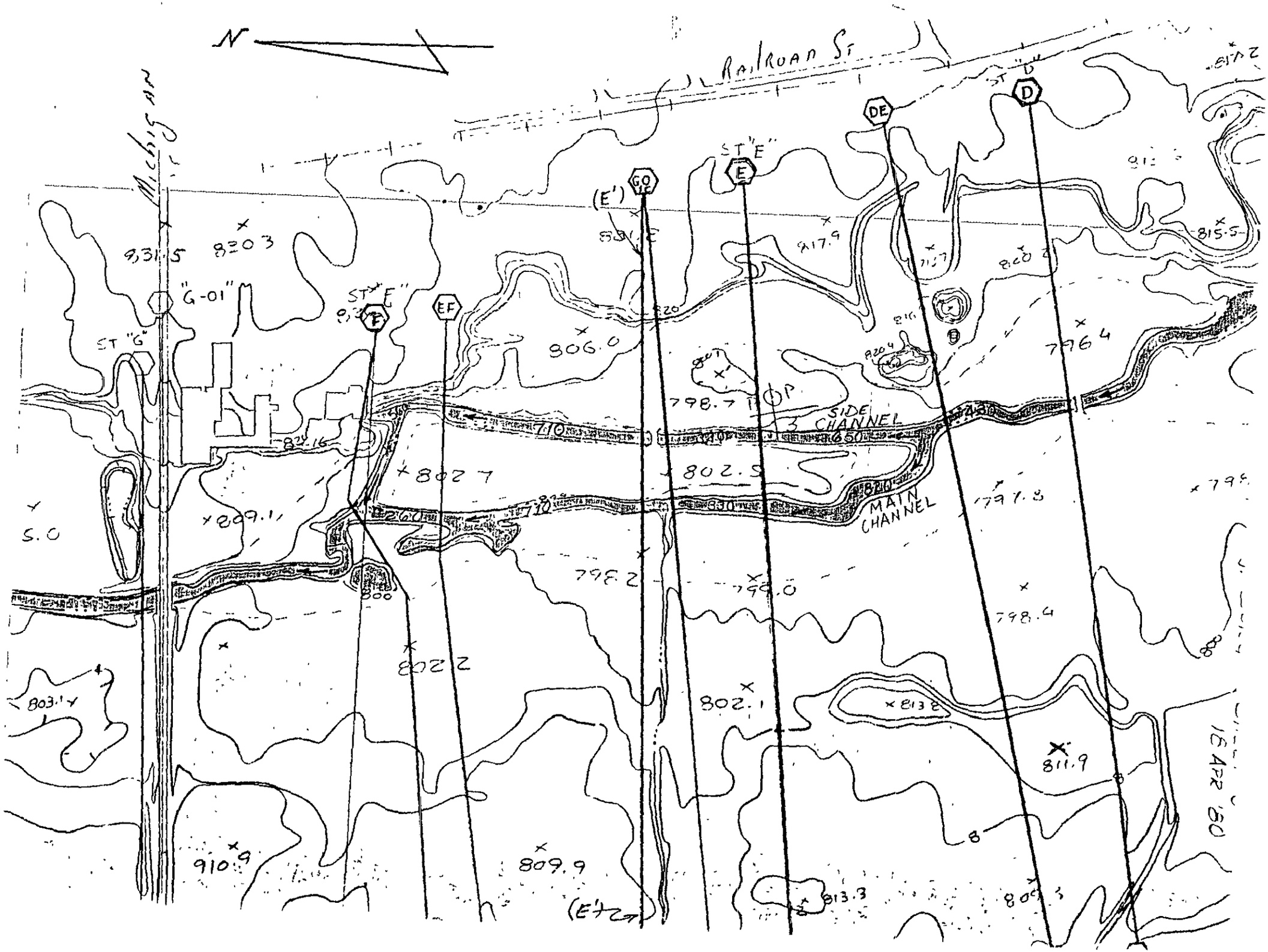
DIVIDED FLOW ANALYSIS - FLOOD STAGE ELEVATIONS AT CROSS SECTION F FROM HEC-2.

FROM WILLIAMS & WORKS IN-HOUSE COMPUTER

FLOOD	MAIN CHANNEL SECTION NUMBER	MAIN CHANNEL DISCHARGE CFS	MAIN CHANNEL CWSEL @ (F)	SIDE CHANNEL SECTION NUMBER	SIDE CHANNEL DISCHARGE CFS	SIDE CHANNEL CWSEL @ (F)
100-YR	498.690	1110.000	800.756	498.700	550.000	800.699
100-YR	498.690	1110.000	800.749	498.700	550.000	800.842
500-YR	498.690	1450.000	801.323	498.700	690.000	801.332
50-YR	498.690	950.000	800.415	498.700	480.000	800.267
10-YR	498.690	530.000	799.054	498.700	320.000	798.844

FROM MICHIGAN STATE UNIVERSITY COMPUTER

FLOOD	MAIN CHANNEL SEC NO	MAIN CHANNEL Q	MAIN CHANNEL CWSEL @ (F)	SIDE CHANNEL SEC NO	SIDE CHANNEL Q	SIDE CHANNEL CWSEL @ (F)
100-YR	498.690	1110.00	800.78	498.700	550.00	800.73
100-YR	498.690	1110.00	800.79	498.700	550.00	800.7-
500-YR	498.690	1450.00	801.35	498.700	690.00	801.35
50-YR	498.690	950.00	800.45	498.700	480.00	800.30
10-YR	498.690	530.00	799.11	498.700	320.00	798.90


N
Railroad St
Michigan
ST "D"
ST "E"
ST "F"
ST "G"
"G-01"
(E')
(E')
D
DE
E
GO
EF
F
SIDE CHANNEL
MAIN CHANNEL
710
650
430
820
830
260
800
831.5
820.3
806.0
798.7
802.7
802.5
809.1
798.2
799.0
798.4
797.8
796.4
815.5
802.2
802.1
813.8
811.9
803.1
910.9
809.9
813.3
16 APR '80

6. ANALYSIS OF PRIVATE BRIDGE ON SIDE CHANNEL *

ELEV. OF LOW CHORD = 799.0
ROADWAY ELEV. = 802.0

SINCE W.S. DOWNSTREAM = 800.20, ANALYZE AS PRESSURE FLOW.

$Q = (0.8)(b_N z)(2g\Delta h)^{1/2}$, FROM PG. 44 OF "HYDRAULICS OF BRIDGE WATERWAYS"

OR

$$\Delta h = \left[\frac{Q}{(0.8)(b_N z)}\right]^2 \div 2g$$

TOTAL Q = 550 CFS FOR 100-YR FLOOD;
Q = 550 CFS - 2 CFS (FLOW IN LEFT OVERBANK)
Q = 548 CFS
$(b_N z)$ = 232.2 FT^2 = NET BRIDGE OPENING AREA

$$\Delta h = \left(\frac{548}{(0.8)(232.2)}\right)^2 \div 2 \times 32.2$$

Δh = 0.13 FT

W.S. DOWNSTREAM = 800.20 AS PER HEC-2,
SO ENERGY GRADIENT UPSTREAM
= 800.20 + 0.13 = 800.33

HEC-2 ANALYSIS YIELDS ENERGY GRADIENT UPSTREAM OF 800.33, THUS HEC-2 RESULTS ARE OKAY.

* ANALYSIS IS BASED ON 100-YEAR FLOOD DISCHARGE.

WILLIAMS & WORKS
ENGINEERS / SURVEYORS / PLANNERS / GEOLOGISTS
GRAND RAPIDS MICHIGAN

Calculation Sheet

Computed by J. SORG	Subject RIVER RAISIN – CLINTON	Sheet 1 of 3
Checked by	Client HUD F.I.S.	Job No. 85376
		Date 11 APR '80

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BRIDGE ANALYSES – VILLAGE OF CLINTON

MICHIGAN AVENUE (US-12) BRIDGE

THIS BRIDGE IS A REINFORCED CONCRETE TYPE HAVING A TOTAL SPAN OF 70 FEET AND A WIDTH OF 52 FEET, LARGE CONCRETE ABUTMENTS, AND NO INTERMEDIATE PIERS.

HEC-2 ANALYSIS INDICATES THAT THE BRIDGE WILL OPERATE UNDER LOW FLOW CONDITIONS FOR ALL OF THE FLOOD DISCHARGES. THE BRIDGE WAS ANALYZED USING THE NORMAL BRIDGE ROUTINE CONTAINED IN THE HEC-2 PROGRAM.

PRIVATE BRIDGE BETWEEN SECTIONS A AND B

THIS BRIDGE CONSISTS OF A WOOD PLANK DECK SUPPORTED BY TWO 1 FOOT I-BEAMS. IT HAS A CENTER PIER OF THE TWIN TYPE, I-BEAM CONSTRUCTION, WITHOUT DIAPHRAGMS. IT HAS A TOTAL SPAN OF APPROXIMATELY 52 FEET AND A WIDTH OF 16 FEET.

HEC-2 ANALYSIS INDICATES THAT THE BRIDGE WILL OPERATE UNDER LOW FLOW CONDITIONS FOR ALL OF THE FLOOD DISCHARGES. THE BRIDGE WAS ANALYZED USING THE NORMAL BRIDGE ROUTINE CONTAINED IN THE HEC-2 PROGRAM.

PRIVATE BRIDGE BETWEEN SECTIONS DC AND DE

THIS BRIDGE CONSISTS OF A WOOD PLANK DECK SUPPORTED BY TWO 1 FOOT I-BEAMS. IT HAS TWO INTERMEDIATE PIERS OF THE TWIN TYPE CONSTRUCTED OF I-BEAMS, WITHOUT

DIAPHRAGMS. THE TOTAL SPAN OF THIS BRIDGE IS APPROXIMATELY 54 FEET, AND ITS WIDTH IS 10 FEET.

PRESSURE AND WEIR FLOW CONDITIONS RESULT AT THE BRIDGE FOR ALL OF THE FLOOD DISCHARGES EXCEPT THE 10-YEAR FLOOD (HEC-2 ANALYSIS). THE BRIDGE WAS ANALYZED USING THE SPECIAL BRIDGE ROUTINE CONTAINED IN THE HEC-2 PROGRAM.

VERIFICATION OF HEC-2 RESULTS:

ELEV. LOW CHORD = 797.8
ELEV. TOP ROADWAY = 799.0

W.S. DOWNSTREAM = 795.67 FROM HEC-2 ANALYSIS (100-YEAR FLOOD)

PRESSURE FLOW CONDITIONS (WEIR FLOW OCCURS IN THE LEFT OVERBANK AS FLOOD PLAIN FLOW, AND WILL NOT BE INCLUDED IN COMPUTATIONS).

$$\therefore Q = 0.8 (b_N z)(2g\Delta h)^{1/2}$$ FROM PG. 44 OF "HYDRAULICS OF BRIDGE WATERWAYS"

$(b_N z)$ = NET OPENING AREA = 274.3 FT^2

Q = 1378 CFS (FLOW IN CHANNEL ONLY, FROM HEC-2)

$$(2g\Delta h)^{1/2} = \frac{Q}{0.8 (b_N z)}$$

$$\Delta h = \left[\frac{Q}{0.8 (b_N z)}\right]^2 \div 2g$$

$$= \left[\frac{1378}{0.8(274.3)}\right]^2 \div 64.4 = 0.61 \text{ FT}$$

$\Delta h = 0.61$ FT

SINCE W.S. DOWNSTREAM = 798.67 AS PER HEC-2, ENERGY GRADIENT UPSTREAM =

$798.67 + 0.61 = 799.28$

HEC-2 ANALYSIS SHOWS ENERGY GRADIENT UPSTREAM AT 798.92, THUS HEC-2 RESULTS ARE IN CLOSE AGREEMENT.

PRIVATE BRIDGE BETWEEN SECTIONS E AND EF

THIS BRIDGE CONSISTS OF CONCRETE SLAB DECK APPROXIMATELY 3.2 FEET THICK, WITH LARGE CONCRETE ABUTMENTS. IT HAS A LARGE CONCRETE CENTER PIER WITH A ROUNDED NOSE AND TAIL. THIS BRIDGE SPANS APPROXIMATELY 36 FEET AND IS 14 FEET WIDE.

HEC-2 ANALYSIS INDICATES THAT THIS BRIDGE WILL OPERATE UNDER PRESSURE AND WEIR FLOW FOR ALL OF THE FLOOD DISCHARGES EXCEPT THE 10-YEAR FLOOD. THE BRIDGE WAS ANALYZED USING THE SPECIAL BRIDGE ROUTINE CONTAINED IN THE HEC-2 PROGRAM. SEE PAGE 6 OF DIVIDED FLOW ANALYSIS FOR VERIFICATION OF THE HEC-2 RESULTS.

RECEIVED
MAY 30 1980
WATER MANAGEMENT

VILLAGE OF CLINTON

LENAWEE COUNTY

Cross Section Identification	River Stationing (Feet)
AA	486.72
AB	487.79
AC	490.14
A	491.74
B1	492.34
B2	492.45
B	492.95
C	494.40
DC	495.15
D1	495.97
D	496.06
DE	96.49 (496.49)
E	497.31
E1	497.72
EF	498.43
F	498.69
F1	499.49
G	499.64
H	500.60
I	501.47
- Former Mill Race Channel -	
DE	-96.49 (496.49)
E	497.30
EF	498.44
F	498.70



1) COUNTY: LENAWEE

2) STUDY NAME: CLINTON, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: SUMMARY



****
HEC2 RELEASE DATED NOV 76 UPDATED APRIL 1980
ERROR CORR - 01,02,03,04
MODIFICATION - 50,51,52,53,54
****

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

CLINTON, RIVER RAISIN

SUMMARY PRINTOUT TABLE 150

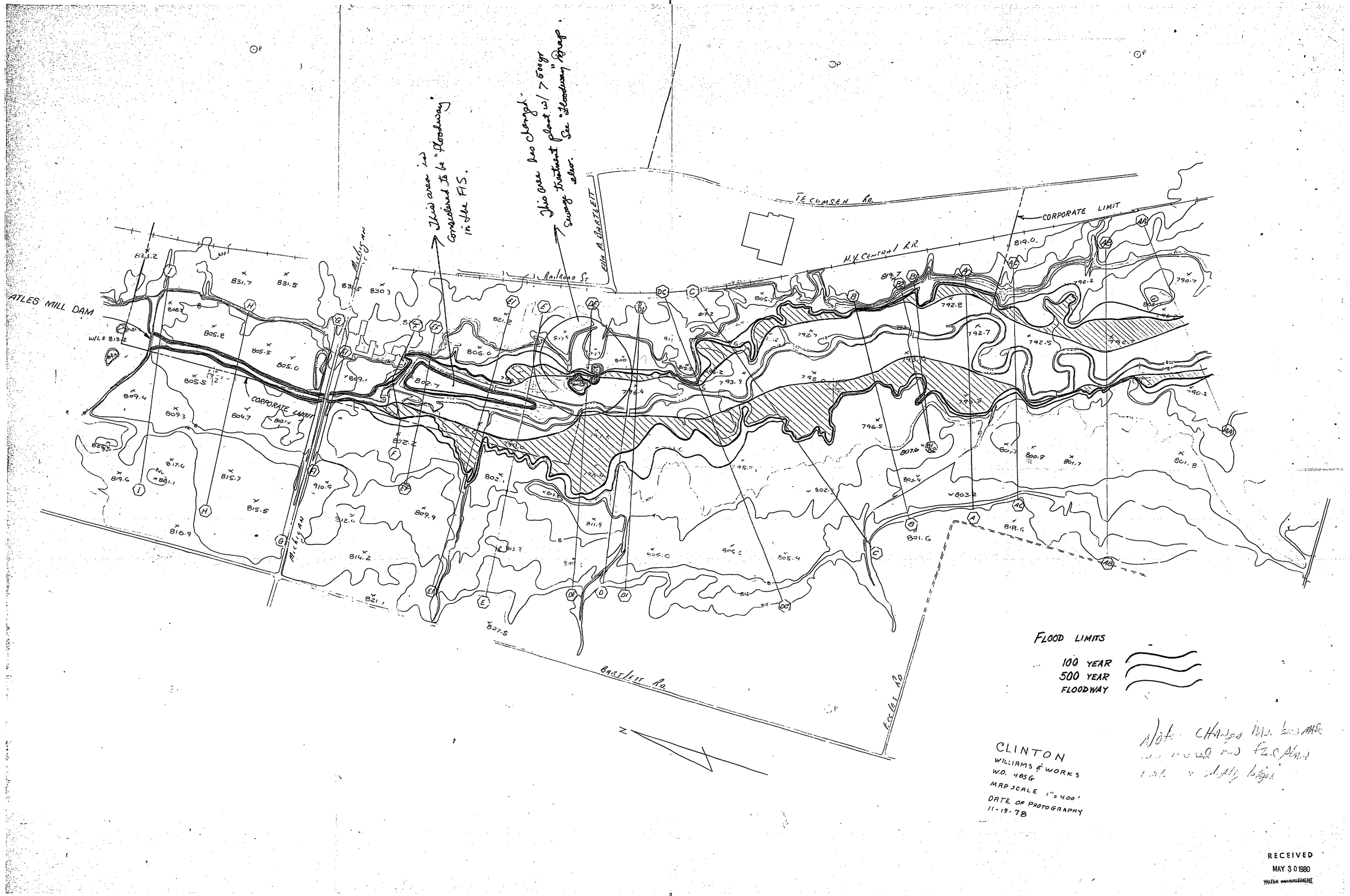
SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
486.720	.00	.00	.00	782.90	850.00	788.53	.00	788.60	8.63	2.37	819.84	289.43
486.720	.00	.00	.00	782.90	1430.00	789.53	.00	789.60	8.63	2.67	1487.17	486.82
486.720	.00	.00	.00	782.90	1660.00	789.84	.00	789.91	8.78	2.78	1664.90	560.12
486.720	.00	.00	.00	782.90	2140.00	790.35	.00	790.42	8.81	2.93	2223.31	721.10
487.790	1070.00	.00	.00	782.30	850.00	789.47	.00	789.59	10.18	2.87	397.68	266.46
487.790	1070.00	.00	.00	782.30	1430.00	790.53	.00	790.69	12.83	3.59	973.47	399.21
487.790	1070.00	.00	.00	782.30	1660.00	790.87	.00	791.05	13.92	3.86	1088.09	444.90
487.790	1070.00	.00	.00	782.30	2140.00	791.29	.00	791.42	11.39	3.62	1848.09	634.19
490.140	2350.00	.00	.00	784.80	850.00	791.93	.00	792.07	12.37	3.25	423.63	241.67
490.140	2350.00	.00	.00	784.80	1430.00	793.13	.00	793.27	12.62	3.69	1182.49	402.49
490.140	2350.00	.00	.00	784.80	1660.00	793.46	.00	793.60	11.98	3.70	1487.12	479.69
490.140	2350.00	.00	.00	784.80	2140.00	793.69	.00	793.86	15.79	4.33	1698.31	538.63
491.740	1600.00	.00	.00	787.10	850.00	793.16	.00	793.20	5.34	1.82	731.38	367.96
491.740	1600.00	.00	.00	787.10	1430.00	794.19	.00	794.23	4.96	1.99	1458.30	641.80
491.740	1600.00	.00	.00	787.10	1660.00	794.51	.00	794.56	5.42	2.16	1421.44	712.84
491.740	1600.00	.00	.00	787.10	2140.00	794.81	.00	794.85	5.31	2.20	2185.18	929.10
492.340	595.00	.00	.00	786.80	850.00	793.61	.00	793.77	18.13	3.26	348.24	199.61
492.340	595.00	.00	.00	786.80	1430.00	794.60	.00	794.71	13.70	3.22	1080.71	386.34
492.340	595.00	.00	.00	786.80	1660.00	794.93	.00	795.02	11.94	3.12	1352.11	480.45
492.340	595.00	.00	.00	786.80	2140.00	795.24	.00	795.35	13.54	3.43	1613.53	581.62
492.370	40.00	.00	.00	786.80	850.00	793.70	.00	793.84	16.51	3.15	381.85	209.20
492.370	40.00	.00	.00	786.80	1430.00	794.66	.00	794.76	12.55	3.10	1133.42	403.68
492.370	40.00	.00	.00	786.80	1660.00	794.98	.00	795.07	11.30	3.05	1388.14	493.81
492.370	40.00	.00	.00	786.80	2140.00	795.30	.00	795.40	12.59	3.33	1666.14	603.13
492.380	10.00	797.00	795.60	786.40	850.00	793.71	.00	793.86	18.38	3.15	344.10	198.28
492.380	10.00	797.00	795.60	786.40	1430.00	794.67	.00	794.79	16.50	3.29	847.11	352.05
492.380	10.00	797.00	795.60	786.40	1660.00	794.99	.00	795.10	15.25	3.25	1046.03	425.15
492.380	10.00	797.00	795.60	786.40	2140.00	795.30	.00	795.43	17.72	3.60	1258.80	508.35

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
492.400	15.00	797.00	795.60	786.40	850.00	793.74	.00	793.89	17.91	3.12	355.00	200.84
492.400	15.00	797.00	795.60	786.40	1430.00	794.69	.00	794.82	16.27	3.27	854.21	354.57
492.400	15.00	797.00	795.60	786.40	1660.00	795.01	.00	795.12	15.06	3.23	1052.76	427.71
492.400	15.00	797.00	795.60	786.40	2140.00	795.33	.00	795.46	17.41	3.57	1270.23	512.94
492.410	10.00	.00	.00	786.80	850.00	793.77	.00	793.91	15.17	3.05	434.01	218.27
492.410	10.00	.00	.00	786.80	1430.00	794.75	.00	794.84	11.20	2.96	1202.82	427.22
492.410	10.00	.00	.00	786.80	1660.00	795.06	.00	795.14	10.12	2.91	1461.83	521.72
492.410	10.00	.00	.00	786.80	2140.00	795.39	.00	795.48	11.33	3.19	1744.19	635.72
492.450	40.00	.00	.00	786.80	850.00	793.85	.00	793.97	13.82	2.94	489.14	228.68
492.450	40.00	.00	.00	786.80	1430.00	794.80	.00	794.88	10.43	2.87	1247.70	442.86
492.450	40.00	.00	.00	786.80	1660.00	795.11	.00	795.18	9.52	2.84	1504.08	538.08
492.450	40.00	.00	.00	786.80	2140.00	795.45	.00	795.53	10.62	3.11	1793.72	656.81
492.950	500.00	.00	.00	788.10	850.00	794.33	.00	794.37	5.19	1.94	922.28	373.04
492.950	500.00	.00	.00	788.10	1430.00	795.20	.00	795.24	5.24	2.15	1633.50	624.77
492.950	500.00	.00	.00	788.10	1660.00	795.48	.00	795.52	5.22	2.21	1875.64	726.83
492.950	500.00	.00	.00	788.10	2140.00	795.86	.00	795.91	5.92	2.44	2210.68	879.74
494.400	1450.00	.00	.00	788.40	850.00	795.35	.00	795.46	11.13	2.99	667.34	254.77
494.400	1450.00	.00	.00	788.40	1430.00	796.22	.00	796.31	10.76	3.21	1274.95	435.94
494.400	1450.00	.00	.00	788.40	1660.00	796.65	.00	796.84	17.47	4.26	871.75	397.20
494.400	1450.00	.00	.00	788.40	2140.00	796.93	.00	797.00	9.79	3.27	1926.74	683.99
495.150	750.00	.00	.00	789.00	850.00	796.35	.00	796.56	20.13	3.83	375.47	189.46
495.150	750.00	.00	.00	789.00	1430.00	797.18	.00	797.34	18.28	4.00	822.79	334.42
495.150	750.00	.00	.00	789.00	1660.00	797.83	.00	797.95	13.39	3.65	971.78	453.67
495.150	750.00	.00	.00	789.00	2140.00	797.82	.00	797.96	17.61	4.18	1258.07	509.95
495.970	820.00	.00	.00	791.70	850.00	797.72	.00	797.87	13.08	3.13	305.05	234.99
495.970	820.00	.00	.00	791.70	1430.00	798.56	.00	798.75	16.60	3.87	633.08	351.02
495.970	820.00	.00	.00	791.70	1660.00	798.92	.00	799.10	15.00	3.81	793.28	428.55
495.970	820.00	.00	.00	791.70	2140.00	799.20	.00	799.40	18.11	4.30	1006.50	502.83
496.010	45.00	.00	.00	791.70	850.00	797.79	.00	797.93	12.42	3.08	321.91	241.19
496.010	45.00	.00	.00	791.70	1430.00	798.66	.00	798.83	15.08	3.72	676.29	368.20
496.010	45.00	.00	.00	791.70	1660.00	799.01	.00	799.16	13.67	3.67	833.64	448.93
496.010	45.00	.00	.00	791.70	2140.00	799.31	.00	799.49	16.06	4.09	1083.27	533.98
496.020	5.00	.00	.00	791.70	850.00	797.80	.00	797.94	12.26	3.06	323.68	242.79
496.020	5.00	.00	.00	791.70	1430.00	798.66	.00	798.85	15.87	3.82	622.02	359.01
496.020	5.00	.00	.00	791.70	1660.00	799.01	.00	799.18	15.10	3.86	763.53	427.14
496.020	5.00	.00	.00	791.70	2140.00	799.31	.00	799.51	17.84	4.31	1010.56	506.71
496.030	10.00	799.00	797.80	791.70	850.00	797.89	.00	798.02	11.40	2.98	348.00	251.75
496.030	10.00	799.00	797.80	791.70	1430.00	798.65	.00	798.85	15.99	3.83	618.31	357.60
496.030	10.00	799.00	797.80	791.70	1660.00	799.00	.00	799.18	15.20	3.87	760.57	425.75
496.030	10.00	799.00	797.80	791.70	2140.00	799.30	.00	799.51	17.98	4.33	1005.12	504.63

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
496.040	5.00	.00	.00	791.70	850.00	797.89	.00	798.03	11.52	3.00	351.46	250.48
496.040	5.00	.00	.00	791.70	1430.00	798.70	.00	798.86	14.28	3.64	695.20	378.38
496.040	5.00	.00	.00	791.70	1660.00	799.05	.00	799.20	13.14	3.61	842.72	457.87
496.040	5.00	.00	.00	791.70	2140.00	799.36	.00	799.53	15.33	4.02	1104.66	546.53
496.060	25.00	.00	.00	791.70	850.00	797.93	.00	798.06	11.25	2.97	361.84	253.44
496.060	25.00	.00	.00	791.70	1430.00	798.74	.00	798.90	13.70	3.58	714.79	386.36
496.060	25.00	.00	.00	791.70	1660.00	799.09	.00	799.23	12.66	3.56	859.33	466.57
496.060	25.00	.00	.00	791.70	2140.00	799.41	.00	799.57	14.66	3.94	1136.68	559.00
96.490	430.00	.00	.00	791.90	850.00	798.39	.00	798.50	9.29	2.78	387.86	279.87
96.490	430.00	.00	.00	791.90	1430.00	799.33	.00	799.50	12.96	3.61	563.90	397.30
96.490	430.00	.00	.00	791.90	1660.00	799.66	.00	799.85	13.80	3.84	624.68	446.83
96.490	430.00	.00	.00	791.90	2140.00	800.08	.00	800.32	17.03	4.43	748.88	518.55
497.310	820.00	.00	.00	791.70	530.00	798.85	.00	798.86	2.01	1.26	776.87	373.79
497.310	820.00	.00	.00	791.70	950.00	799.96	.00	799.99	2.79	1.67	1302.70	568.71
497.310	820.00	.00	.00	792.00	1110.00	800.45	.00	800.50	4.43	2.20	1110.88	527.15
497.310	820.00	.00	.00	791.70	1450.00	800.84	.00	800.86	2.88	1.83	2217.63	854.54
497.720	410.00	.00	.00	792.20	530.00	798.94	.00	798.96	2.65	1.38	661.26	325.58
497.720	410.00	.00	.00	792.20	950.00	800.09	.00	800.12	3.76	1.86	1077.17	490.06
497.720	410.00	.00	.00	792.50	1110.00	800.65	.00	800.71	5.80	2.44	955.37	460.90
497.720	410.00	.00	.00	792.20	1450.00	800.97	.00	801.01	4.07	2.11	1817.74	718.68
498.430	710.00	.00	.00	792.70	530.00	799.11	.00	799.13	2.11	1.22	536.62	365.06
498.430	710.00	.00	.00	792.70	950.00	800.33	.00	800.37	3.30	1.75	741.03	523.32
498.430	710.00	.00	.00	792.70	1110.00	801.09	.00	801.20	7.63	2.87	643.22	401.84
498.430	710.00	.00	.00	792.70	1450.00	801.26	.00	801.31	4.32	2.19	1142.43	697.37
498.690	260.00	.00	.00	792.90	530.00	799.16	.00	799.28	17.06	2.75	196.64	128.33
498.690	260.00	.00	.00	792.90	950.00	800.39	.00	800.60	21.37	3.69	279.53	205.50
498.690	260.00	.00	.00	792.90	1110.00	801.30	.00	801.50	16.41	3.61	353.68	274.05
498.690	260.00	.00	.00	792.90	1450.00	801.29	.00	801.63	28.20	4.73	352.60	273.06
499.490	800.00	.00	.00	795.90	850.00	800.77	.00	800.96	23.65	3.53	254.93	174.79
499.490	800.00	.00	.00	795.90	1430.00	802.21	.00	802.50	24.93	4.40	355.83	286.39
499.490	800.00	.00	.00	795.90	1660.00	802.84	.00	803.15	23.59	4.58	402.42	341.81
499.490	800.00	.00	.00	795.90	2140.00	803.48	.00	803.90	28.08	5.33	452.74	403.83
499.520	25.00	.00	.00	795.90	850.00	800.84	.00	801.01	16.68	3.38	260.47	208.11
499.520	25.00	.00	.00	795.90	1430.00	802.31	.00	802.56	17.03	4.14	363.32	346.50
499.520	25.00	.00	.00	795.90	1660.00	802.95	.00	803.21	15.80	4.27	411.33	417.57
499.520	25.00	.00	.00	795.90	2140.00	803.63	.00	803.98	18.27	4.91	464.19	500.65
499.540	25.00	808.40	805.40	795.90	850.00	800.89	.00	801.05	16.03	3.34	263.84	212.30
499.540	25.00	808.40	805.40	795.90	1430.00	802.36	.00	802.60	16.50	4.10	367.18	352.08
499.540	25.00	808.40	805.40	795.90	1660.00	802.99	.00	803.26	15.38	4.23	415.15	423.34
499.540	25.00	808.40	805.40	795.90	2140.00	803.68	.00	804.03	17.71	4.86	469.76	508.52

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
499.590	50.00	808.40	805.40	795.90	850.00	800.97	.00	801.13	15.08	3.28	269.06	218.88
499.590	50.00	808.40	805.40	795.90	1430.00	802.45	.00	802.69	15.72	4.03	373.10	360.69
499.590	50.00	808.40	805.40	795.90	1660.00	803.08	.00	803.33	14.76	4.18	420.86	432.07
499.590	50.00	808.40	805.40	795.90	2140.00	803.78	.00	804.12	16.95	4.79	476.81	519.77
499.620	25.00	.00	.00	794.50	850.00	801.05	.00	801.18	11.79	2.92	311.31	247.58
499.620	25.00	.00	.00	794.50	1430.00	802.51	.00	802.73	15.01	3.85	413.87	369.09
499.620	25.00	.00	.00	794.50	1660.00	803.12	.00	803.37	15.09	4.08	460.69	427.36
499.620	25.00	.00	.00	794.50	2140.00	803.82	.00	804.17	18.36	4.78	517.07	499.40
499.640	25.00	.00	.00	794.50	850.00	801.08	.00	801.21	11.55	2.90	313.57	250.15
499.640	25.00	.00	.00	794.50	1430.00	802.55	.00	802.77	14.66	3.82	417.47	373.51
499.640	25.00	.00	.00	794.50	1660.00	803.16	.00	803.41	14.80	4.06	464.03	431.57
499.640	25.00	.00	.00	794.50	2140.00	803.87	.00	804.21	18.06	4.76	520.33	503.62
500.600	960.00	.00	.00	794.30	850.00	802.08	.00	802.22	9.61	2.95	310.21	274.24
500.600	960.00	.00	.00	794.30	1430.00	803.82	.00	804.05	12.22	3.89	411.45	409.12
500.600	960.00	.00	.00	794.30	1660.00	804.47	.00	804.73	12.75	4.17	451.23	464.93
500.600	960.00	.00	.00	794.30	2140.00	805.43	.00	805.76	14.45	4.76	606.11	562.93
501.470	870.00	.00	.00	799.20	850.00	803.59	.00	803.91	51.84	4.76	229.79	118.06
501.470	870.00	.00	.00	799.20	1430.00	805.42	.00	805.78	35.31	5.12	375.07	240.67
501.470	870.00	.00	.00	799.20	1660.00	806.06	.00	806.44	32.25	5.26	427.66	292.32
501.470	870.00	.00	.00	799.20	2140.00	807.13	.00	807.55	30.55	5.69	524.09	387.20
-96.490	430.00	.00	.00	791.90	850.00	798.39	.00	798.52	10.13	2.91	312.88	267.04
-96.490	430.00	.00	.00	791.90	1430.00	799.33	.00	799.59	17.21	4.16	452.37	344.72
-96.490	430.00	.00	.00	791.90	1660.00	799.66	.00	799.96	19.09	4.52	502.73	379.94
-96.490	430.00	.00	.00	791.90	2140.00	800.08	.00	800.38	20.09	4.81	1028.77	477.44
497.300	650.00	.00	.00	791.70	320.00	798.76	.00	798.77	.82	.86	747.76	352.60
497.300	650.00	.00	.00	791.70	480.00	799.93	.00	799.93	.85	.97	1272.85	521.69
497.300	650.00	.00	.00	791.70	550.00	800.50	.00	800.53	2.06	1.59	620.67	383.14
497.300	650.00	.00	.00	791.70	690.00	800.76	.00	800.77	.88	1.06	2127.12	733.49
497.640	330.00	.00	.00	792.20	320.00	798.79	.00	798.80	1.11	.95	633.61	303.57
497.640	330.00	.00	.00	792.20	480.00	799.96	.00	799.97	1.17	1.10	1017.35	444.16
497.640	330.00	.00	.00	792.20	550.00	800.57	.00	800.61	2.74	1.77	406.41	332.10
497.640	330.00	.00	.00	792.20	690.00	800.79	.00	800.81	1.31	1.25	1631.19	603.04
497.660	25.00	.00	.00	792.20	320.00	798.78	.00	798.81	3.80	1.50	213.07	164.16
497.660	25.00	.00	.00	792.20	480.00	799.94	.00	800.00	5.15	1.90	255.16	211.49
497.660	25.00	.00	.00	792.20	550.00	800.57	.00	800.63	5.16	1.97	325.31	242.11
497.660	25.00	.00	.00	792.20	690.00	800.77	.00	800.84	6.98	2.32	476.64	261.18
497.680	15.00	799.80	799.00	792.20	320.00	798.78	.00	798.82	3.80	1.50	212.99	164.07
497.680	15.00	799.80	799.00	792.20	480.00	799.98	.00	800.04	5.08	1.89	257.31	212.88
497.680	15.00	799.80	799.00	792.20	550.00	800.58	.00	800.64	5.05	1.95	387.52	244.86
497.680	15.00	799.80	799.00	792.20	690.00	800.77	.00	800.84	6.98	2.32	476.65	261.18

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
497.710	30.00	.00	.00	792.20	320.00	798.82	.00	798.83	1.08	.94	667.03	308.05
497.710	30.00	.00	.00	792.20	480.00	800.05	.00	800.06	1.04	1.04	1132.81	470.37
497.710	30.00	.00	.00	792.20	550.00	800.61	.00	800.65	2.63	1.74	505.69	339.34
497.710	30.00	.00	.00	792.20	690.00	800.86	.00	800.87	1.17	1.18	1775.66	639.12
498.440	710.00	.00	.00	792.80	320.00	798.94	.00	798.99	5.38	1.97	234.33	137.98
498.440	710.00	.00	.00	792.80	480.00	800.15	.00	800.22	5.82	2.34	311.11	199.00
498.440	710.00	.00	.00	792.80	550.00	800.85	.00	800.92	5.22	2.37	376.47	240.63
498.440	710.00	.00	.00	792.80	690.00	800.97	.00	801.07	7.71	2.91	390.77	248.54
498.700	560.00	.00	.00	792.90	320.00	799.26	.00	799.30	5.72	1.62	202.45	133.78
498.700	560.00	.00	.00	792.90	480.00	800.48	.00	800.53	5.15	1.83	286.07	211.55
498.700	560.00	.00	.00	792.90	550.00	801.13	.00	801.19	4.45	1.85	339.25	260.72
498.700	560.00	.00	.00	792.90	690.00	801.38	.00	801.46	6.05	2.21	360.63	280.47



Note: Changes have been made [illegible] flood plain [illegible] slightly larger

RECEIVED
MAY 30 1980
WATER MANAGEMENT

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: CAMP BRENOTT DRAIN

4) DOCUMENT TYPE: 100-YEAR CONVERGENCE RUN

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************
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CONVERGENCE

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T1       HUD-FIA H-4705 T06
T2       DEERFIELD VILLAGE FIS
T3       CAMP BRENOTT DRAIN  100 YR

J1  ICHECK     INC        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
      -1.        4.         0.         0.    .001900       0.00        .5         0.    660.000     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

QT      5.000    420.000    640.000    730.000    960.000    730.000      0.000      0.000      0.000      0.000
NC       .090       .090       .065       .150       .350      0.000      0.000      0.000      0.000      0.000

X1      1.000      6.000     50.000    130.000      0.000      0.000      0.000      0.000      0.000      0.000
GR    669.500     50.000    656.600     89.000    655.800     96.000    656.800    109.000    665.700    130.000
GR    666.300    158.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

X1      1.900      9.000      0.000     63.000    400.000    400.000    400.000      0.000      0.000      0.000
GR    663.100      0.000    657.700     14.000    657.200     20.000    656.300     22.000    656.300     25.000
GR    656.500     29.000    658.100     32.000    661.600     63.000    661.600    130.000      0.000      0.000
NC      0.000      0.000      0.000       .350       .550      0.000      0.000      0.000      0.000      0.000

X1      1.980      7.000    198.100    202.200     70.000     70.000     70.000      0.000      0.000      0.000
X3     10.000      0.000      0.000      0.000      0.000      0.000      0.000    661.500    661.500      0.000
GR    663.000    198.000    659.500    198.100    657.500    198.200    656.500    200.000    657.500    202.200
GR    659.500    202.300    662.700    300.000      0.000      0.000      0.000      0.000      0.000      0.000
SB      0.000      1.870      2.800    100.000      4.000      0.000     10.000      0.000    656.500    656.500

X1      2.020      0.000      0.000      0.000     30.000     30.000     30.000      0.000      0.000      0.000
X2      0.000      0.000      1.000    659.500    662.700      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    662.700    662.700      0.000

X1      2.100      8.000     73.000    100.000     50.000     50.000     50.000      0.000      0.000      0.000
GR    664.300      0.000    662.100     50.000    661.800     73.000    658.100     82.000    656.800     88.000
GR    675.300     91.000    661.200    100.000    661.500    175.000      0.000      0.000      0.000      0.000
NC      0.000      0.000      0.000       .150       .350      0.000      0.000      0.000      0.000      0.000

X1      2.500      6.000    370.000    460.000    150.000    150.000    150.000       .870      0.000      0.000
GR    672.000    340.000    660.000    370.000    657.700    450.000    660.500    460.000    661.000    570.000
GR    664.000    590.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
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X1	3.000	9.000	35.000	44.000	300.000	300.000	300.000	0.000	0.000	0.000
GR	667.800	0.000	660.100	20.000	660.300	35.000	658.400	38.000	657.900	40.000
GR	658.300	42.000	659.300	44.000	660.200	100.000	665.000	160.000	0.000	0.000
X1	3.500	0.000	0.000	0.000	400.000	400.000	400.000	1.700	.600	0.000
X1	4.000	7.000	182.000	212.000	75.000	75.000	75.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	664.000	664.000	0.000
GR	664.500	100.000	662.600	182.000	659.500	193.000	658.700	200.000	659.500	201.000
GR	662.100	212.000	663.500	400.000	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 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

CAMP BRENOTT DRAIN 100

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1.000	0.00	0.00	0.00	655.80	730.00	663.46	0.00	663.57	19.04	2.73	267.23	167.29
1.000	0.00	0.00	0.00	655.80	730.00	664.60	0.00	664.67	10.30	2.18	335.22	227.50
1.000	0.00	0.00	0.00	655.80	730.00	662.30	0.00	662.50	38.97	3.55	205.50	116.95
1.900	400.00	0.00	0.00	656.30	730.00	664.04	0.00	664.08	8.84	1.91	471.95	245.55
1.900	400.00	0.00	0.00	656.30	730.00	664.92	0.00	664.95	4.68	1.53	586.47	337.42
1.900	400.00	0.00	0.00	656.30	730.00	663.38	0.00	663.45	15.67	2.32	385.48	184.43
1.980	70.00	0.00	0.00	656.50	730.00	664.13	0.00	664.22	37.39	3.80	325.83	119.39
1.980	70.00	0.00	0.00	656.50	730.00	664.96	0.00	665.02	17.74	2.82	411.60	173.34
1.980	70.00	0.00	0.00	656.50	730.00	663.55	0.00	663.70	70.26	4.93	266.73	87.09
2.020	30.00	662.70	659.50	656.50	730.00	664.57	0.00	664.64	24.76	3.22	370.85	146.71
2.020	30.00	662.70	659.50	656.50	730.00	665.17	0.00	665.21	15.23	2.66	431.64	187.07
2.020	30.00	662.70	659.50	656.50	730.00	664.46	0.00	664.53	27.29	3.35	359.71	139.74
2.100	50.00	0.00	0.00	656.80	730.00	664.71	0.00	664.75	17.03	2.13	486.11	176.89
2.100	50.00	0.00	0.00	656.80	730.00	665.26	0.00	665.28	10.33	1.73	576.17	227.18
2.100	50.00	0.00	0.00	656.80	730.00	664.61	0.00	664.66	18.77	2.22	469.99	168.48
2.500	150.00	0.00	0.00	657.70	730.00	664.81	0.00	664.82	1.92	1.03	917.15	526.94
2.500	150.00	0.00	0.00	657.70	730.00	665.32	0.00	665.33	1.38	.93	1021.88	621.20
2.500	150.00	0.00	0.00	657.70	730.00	664.72	0.00	664.73	2.04	1.05	899.53	511.68
3.000	300.00	0.00	0.00	657.90	730.00	664.90	0.00	664.93	7.66	2.01	582.56	263.77
3.000	300.00	0.00	0.00	657.90	730.00	665.39	0.00	665.41	5.37	1.77	657.30	314.88
3.000	300.00	0.00	0.00	657.90	730.00	664.81	0.00	664.84	8.14	2.05	570.04	255.86
3.500	400.00	0.00	0.00	658.50	730.00	665.11	0.00	665.13	3.49	1.35	893.44	390.96
3.500	400.00	0.00	0.00	658.50	730.00	665.54	0.00	665.55	2.53	1.21	1001.87	459.09
3.500	400.00	0.00	0.00	658.50	730.00	665.04	0.00	665.06	3.68	1.38	876.34	380.49
4.000	75.00	0.00	0.00	658.70	730.00	665.15	0.00	665.17	8.83	1.86	712.95	245.71
4.000	75.00	0.00	0.00	658.70	730.00	665.56	0.00	665.58	5.39	1.54	841.11	314.43
4.000	75.00	0.00	0.00	658.70	730.00	665.08	0.00	665.10	9.55	1.92	694.10	236.23

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: ~~[illegible]~~ CAMP BRIGHTON DRAIN

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

C
T1  HUD-FIA H-4705 T-06
T2  DEERFIELD VILLAGE FIS
T3  CAMP-BRENOTT DRAIN          100 YR FLOW=730 CFS   ENCROACHED

J1  ICHECK    INQ      NINV     IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      -1.       2.       0.       0.  0.000000      0.00     -1.0       0.    676.240     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

NC      .085      .085      .050      .150      .350     0.000     0.000     0.000     0.000     0.000
QT     5.000   730.000   730.000   420.000   640.000   960.000     0.000     0.000     0.000     0.000
ET     0.000     0.000    75.200     0.000     0.000     0.000     0.000     0.000     0.000     0.000

      ***HEC2 RUNS START U/S 7 FT CULVERT USING
      ***HAND CALCULATED STARTING ELEVATIONS
      ***U/S FACE 7 FT CULVERT-REPEAT OF SEC. 2.8

X1    1.700    12.000   200.000   229.000     0.000     0.000     0.000     .960      .200      0.000
GR  676.600   165.000   673.000   165.000   669.400   165.000   667.200   165.000   664.200   200.000
GR  660.300   208.000   659.300   213.000   660.300   222.000   663.700   229.000   664.500   265.000
GR  666.400   265.000   675.000   265.000     0.000     0.000     0.000     0.000     0.000     0.000

X1    2.300    11.000   200.000   229.000    14.000    14.000    14.000     0.000     0.000     0.000
GR  678.900   100.000   676.200   185.000   666.000   186.000   664.200   200.000   660.300   208.000
GR  659.800   213.000   660.300   222.000   663.700   229.000   664.000   250.000   676.200   251.000
GR  679.800   300.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
SB    1.050     1.190     2.800   200.000    29.000     4.000   653.000      .670   659.800   659.800

X1    2.700     0.000     0.000     0.000     6.000     6.000     6.000     0.000     0.000     0.000
X2    0.000     0.000     1.000   676.200   678.900     0.000     0.000     1.750     0.000     0.000

      ***50 FT U/S RAILROAD BRIDGE-FIELD SURVEYED

X1    2.800     9.000   200.000   229.000    50.000    50.000    50.000     0.000     0.000     0.000
GR  675.000   130.000   671.000   131.000   664.200   200.000   660.300   208.000   659.300   213.000
GR  660.300   222.000   663.600   229.000   666.500   300.000   675.000   301.000     0.000     0.000
NC    0.000     0.000     0.000      .100      .300     0.000     0.000     0.000     0.000     0.000

      ***FIELD SURVEYED VALLEY SECTION
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X1	3.000	12.000	195.000	230.000	360.000	360.000	360.000	0.000	0.000	0.000
GR	678.300	145.000	677.000	147.000	669.200	175.000	667.800	195.000	660.500	211.000
GR	659.600	217.000	660.500	220.000	663.600	230.000	663.800	260.000	665.700	395.000
GR	668.200	420.000	673.900	435.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	3.500	0.000	0.000	0.000	700.000	700.000	700.000	0.000	.100	0.000

***FIELD SURVEYED VALLEY SECTION

X1	4.000	8.000	1012.000	1045.000	700.000	700.000	700.000	0.000	0.000	0.000
GR	676.000	930.000	670.000	990.000	667.600	1012.000	661.000	1029.000	659.800	1034.000
GR	661.000	1040.000	668.900	1045.000	676.000	1128.000	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 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1  HUD-FIA H-4705 T-06
T2  DEERFIELD VILLAGE FIS
T3  CAMP-BRENOTT DRAIN        FLOODWAY

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      -1.       3.        0.        0.  0.000D00      0.00     -1.0       0.   676.240    0.000
J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIP     ITRACE
     2.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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*PROF 2

CCHV= .150 CEHV= .350
*SECNO 1.700
3280 CROSS SECTION 1.70 EXTENDED 1.24 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= 176.5 248.5 TYPE= 2 TARGET= 75.000

***HEC2 RUNS START U/S 7 FT CULVERT USING

***HAND CALCULATED STARTING ELEVATIONS

***U/S FACE 7 FT CULVERT-REPEAT OF SEC. 2.8

1.70	16.74	676.24	0.00	676.24	676.26	.02	0.00	0.00	664.40
730.	109.	495.	126.	240.	419.	267.	0.	0.	663.90
0.00	.46	1.18	.47	.085	.050	.085	0.000	659.50	176.52
.000047	0.	0.	0.	0	0	0	0.00	72.00	248.52

*SECNO 2.300

3470 ENCROACHMENT STATIONS= 177.0 252.0 TYPE= 2 TARGET= 75.000

2.30	16.44	676.24	0.00	676.24	676.26	.01	.00	.00	664.20
730.	87.	488.	156.	161.	438.	266.	0.	0.	663.70
.00	.54	1.11	.58	.085	.050	.085	.047	659.80	183.72
.000041	14.	14.	14.	0	0	0	0.00	67.83	251.55

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.19	2.80	200.00	29.00	4.00	653.00	.67	659.80	659.80

*SECNO 2.700
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
676.27	676.26	.00	0.	730.	653.	590.	676.20	678.90

3470 ENCROACHMENT STATIONS= 177.0 252.0 TYPE= 2 TARGET= 75.000

2.70	16.45	676.25	0.00	676.25	676.27	.01	.01	0.00	664.20
730.	87.	488.	156.	161.	439.	267.	0.	0.	663.70
.01	.54	1.11	.58	.085	.050	.085	.045	659.80	183.18

.000040	6.	6.	6.	1	0	0	0.00	68.61	251.79

*SECNO 2.800
3280 CROSS SECTION 2.80 EXTENDED 1.25 FEET

3470 ENCROACHMENT STATIONS= 177.0 252.0 TYPE= 2 TARGET= 75.000

***50 FT U/S RAILROAD BRIDGE-FIELD SURVEYED

2.80	16.95	676.25	0.00	676.26	676.27	.01	.00	.00	664.20
730.	109.	496.	126.	251.	442.	280.	1.	0.	663.60
.02	.43	1.12	.45	.085	.050	.085	.048	659.30	177.00
.000041	50.	50.	50.	0	0	0	0.00	75.00	252.00

CCHV= .100 CEHV= .300
*SECNO 3.000
3280 CROSS SECTION 3.00 EXTENDED 2.37 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= 175.0 250.0 TYPE= 2 TARGET= 75.000

***FIELD SURVEYED VALLEY SECTION

3.00	16.67	676.27	0.00	676.26	676.28	.02	.02	.00	667.80
730.	61.	549.	120.	155.	482.	252.	9.	1.	663.60
.12	.39	1.14	.48	.085	.050	.085	.050	659.60	175.00
.000048	360.	360.	360.	0	0	0	0.00	75.00	250.00

*SECNO 3.500
3280 CROSS SECTION 3.50 EXTENDED 2.30 FEET

3470 ENCROACHMENT STATIONS= 175.0 250.0 TYPE= 2 TARGET= 75.000

3.50	16.60	676.30	0.00	676.27	676.32	.02	.03	.00	667.90
730.	60.	550.	120.	154.	480.	251.	23.	2.	663.70
.32	.39	1.15	.48	.085	.050	.085	.050	659.70	175.00
.000049	700.	700.	700.	0	0	0	0.00	75.00	250.00

*SECNO 4.000
3280 CROSS SECTION 4.00 EXTENDED .34 FEET

3470 ENCROACHMENT STATIONS= 991.0 1066.0 TYPE= 2 TARGET= 75.000

***FIELD SURVEYED VALLEY SECTION

4.00	16.54	676.34	0.00	676.27	676.36	.02	.04	.00	667.60
730.	81.	585.	64.	159.	437.	137.	36.	3.	668.90
.49	.51	1.34	.47	.085	.050	.085	.050	659.80	991.00
.000081	700.	700.	700.	0	0	0	0.00	75.00	1066.00

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: CAMP BRENOTT DRAIN

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1       HUD-FIA H-4705 T06
T2       DEERFIELD VILLAGE FIS
T3       CAMP BRENOTT DRAIN  100 YR  NATURAL

J1   ICHECK      INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ

       -1.         4.         0.         0.    .001900       0.00         .5         0.    660.000    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

QT       5.000    420.000    640.000    730.000    960.000    730.000      0.000      0.000      0.000      0.000
NC        .090       .090       .065       .150       .350      0.000      0.000      0.000      0.000      0.000

X1       1.000      6.000     50.000    130.000      0.000      0.000      0.000      0.000      0.000      0.000
GR     669.500     50.000    656.600     89.000    655.800     96.000    656.800    109.000    665.700    130.000
GR     666.300    158.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

X1       1.900      9.000      0.000     63.000    400.000    400.000    400.000      0.000      0.000      0.000
GR     663.100      0.000    657.700     14.000    657.200     20.000    656.300     22.000    656.300     25.000
GR     656.500     29.000    658.100     32.000    661.600     63.000    661.600    130.000      0.000      0.000
NC       0.000      0.000      0.000       .350       .550      0.000      0.000      0.000      0.000      0.000

X1       1.980      7.000    198.100    202.200     70.000     70.000     70.000      0.000      0.000      0.000
X3      10.000      0.000      0.000      0.000      0.000      0.000      0.000    661.500    661.500      0.000
GR     663.000    198.000    659.500    198.100    657.500    198.200    656.500    200.000    657.500    202.200
GR     659.500    202.300    662.700    300.000      0.000      0.000      0.000      0.000      0.000      0.000
SB       0.000      1.870      2.800    100.000      4.000      0.000     10.000      0.000    656.500    656.500

X1       2.020      0.000      0.000      0.000     30.000     30.000     30.000      0.000      0.000      0.000
X2       0.000      0.000      1.000    659.500    662.700      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    662.700    662.700      0.000

X1       2.100      8.000     73.000    100.000     50.000     50.000     50.000      0.000      0.000      0.000
GR     664.300      0.000    662.100     50.000    661.800     73.000    658.100     82.000    656.800     88.000
GR     675.300     91.000    661.200    100.000    661.500    175.000      0.000      0.000      0.000      0.000
NC       0.000      0.000      0.000       .150       .350      0.000      0.000      0.000      0.000      0.000

X1       2.500      6.000    370.000    460.000    150.000    150.000    150.000       .870      0.000      0.000
GR     672.000    340.000    660.000    370.000    657.700    450.000    660.500    460.000    661.000    570.000
GR     664.000    590.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
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X1	3.000	9.000	35.000	44.000	300.000	300.000	300.000	0.000	0.000	0.000
GR	667.800	0.000	660.100	20.000	660.300	35.000	658.400	38.000	657.900	40.000
GR	658.300	42.000	659.300	44.000	660.200	100.000	665.000	160.000	0.000	0.000
X1	3.500	0.000	0.000	0.000	400.000	400.000	400.000	1.700	.600	0.000
X1	4.000	7.000	182.000	212.000	75.000	75.000	75.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	664.000	664.000	0.000
GR	664.500	100.000	662.600	182.000	659.500	193.000	658.700	200.000	659.500	201.000
GR	662.100	212.000	663.500	400.000	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

*PROF 1

CCHV= .150 CEHV= .350

*SECNO 1.000

SECNO	DEPTH	CWSEL	CRITS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLCB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLCBL	XLCH	XLCBR	ITRIAL	ICC	ICONT	CORAR	TOPWID	ENDST
1.00	7.66	663.46	0.00	660.00	663.57	.12	0.00	0.00	669.50
730.	0.	730.	0.	0.	267.	0.	0.	0.	665.70
0.00	0.00	2.73	0.00	.090	.065	.090	0.000	655.80	68.27
.001904	0.	0.	0.	0	0	5	0.00	56.44	124.71

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 2.44 FEET

1.90	7.74	664.04	0.00	0.00	664.08	.05	.50	.01	663.10
730.	0.	588.	142.	0.	309.	163.	3.	1.	661.60
.07	0.00	1.91	.87	.090	.065	.090	.065	656.30	0.00
.000884	400.	400.	400.	2	0	0	0.00	130.00	130.00

CCHV= .350 CEHV= .550

*SECNO 1.980

3280 CROSS SECTION 1.98 EXTENDED 1.43 FEET

1.98	7.63	664.13	0.00	0.00	664.22	.09	.11	.02	659.50
730.	0.	111.	619.	0.	29.	296.	4.	1.	657.50
.07	.16	3.80	2.09	.090	.065	.090	.065	656.50	198.00
.003739	70.	70.	70.	2	0	0	0.00	102.00	300.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.87	2.80	100.00	4.00	0.00	10.00	0.00	656.50	656.50

*SECNO 2.020

3280 CROSS SECTION 2.02 EXTENDED 1.87 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
818.87	664.22	0.00	689.	42.	10.	12.	659.50	662.70
2.02	8.07	664.57	0.00	0.00	664.64	.07	.42	0.00	659.50
730.	0.	100.	630.	0.	31.	340.	4.	1.	657.50
.08	.13	3.22	1.86	.090	.065	.090	.065	656.50	198.00
.002476	30.	30.	30.	2	0	8	0.00	102.00	300.00

*SECNO 2.100

3265 DIVIDED FLOW

3280 CROSS SECTION 2.10 EXTENDED 3.21 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	ICCNT	CORAR	TOPWID	ENDST
2.10	7.91	664.71	0.00	0.00	664.75	.04	.10	.01	661.80
730.	152.	204.	374.	139.	95.	252.	5.	1.	661.20
.09	1.10	2.13	1.49	.090	.065	.090	.065	656.80	0.00
.001703	50.	50.	50.	2	0	0	0.00	166.52	175.00

CCHV= .150 CEHV= .350
*SECNO 2.500
3280 CROSS SECTION 2.50 EXTENDED .80 FEET

2.50	7.11	664.81	0.00	0.00	664.82	.01	.06	.00	660.00
730.	10.	479.	241.	25.	464.	428.	7.	2.	660.50
.13	.38	1.03	.56	.090	.065	.090	.065	657.70	355.65
.000192	150.	150.	150.	2	0	0	0.00	201.85	557.50

*SECNO 3.000

3.00	7.00	664.90	0.00	0.00	664.93	.03	.10	.01	660.30
730.	114.	112.	504.	100.	56.	426.	12.	3.	659.30
.20	1.13	2.01	1.18	.090	.065	.090	.065	657.90	7.54
.000766	300.	300.	300.	2	0	0	0.00	151.19	158.73

*SECNO 3.500

3.50	6.61	665.11	0.00	0.00	665.13	.01	.20	.00	660.90
730.	112.	121.	498.	153.	89.	651.	19.	5.	659.90
.33	.73	1.35	.76	.090	.065	.090	.065	658.50	14.51
.000349	400.	400.	400.	2	0	0	0.00	247.16	261.67

*SECNO 4.000
3280 CROSS SECTION 4.00 EXTENDED 1.65 FEET

4.00	6.45	665.15	0.00	0.00	665.17	.03	.04	.00	662.60
730.	87.	263.	380.	131.	141.	441.	21.	5.	662.10
.35	.67	1.86	.86	.090	.065	.090	.065	658.70	100.00
.000883	75.	75.	75.	2	0	0	0.00	300.00	400.00

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, ~~EST~~ VILLAGE OF

3) WATERCOURSE: CAMP BECKETT DRAIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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**************************************************
  HEC 2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

-BRENDTT DRAIN 10

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1.700	0.00	0.00	0.00	659.50	730.00	676.24	0.00	676.25	.29	.93	1178.59	1357.36
1.700	0.00	0.00	0.00	659.50	730.00	676.24	0.00	676.26	.47	1.18	925.00	1069.80
1.700	0.00	0.00	0.00	659.50	420.00	665.80	0.00	665.92	13.66	2.90	190.69	113.62
1.700	0.00	0.00	0.00	659.50	640.00	675.60	0.00	675.61	.26	.86	1117.15	1247.60
1.700	0.00	0.00	0.00	659.50	960.00	676.70	0.00	676.71	.45	1.18	1222.75	1438.58
2.300	14.00	0.00	0.00	659.80	730.00	676.24	0.00	676.25	.41	1.11	865.75	1146.35
2.300	14.00	0.00	0.00	659.80	730.00	676.24	0.00	676.26	.41	1.11	865.77	1146.38
2.300	14.00	0.00	0.00	659.80	420.00	665.83	0.00	665.94	11.81	2.76	188.05	122.21
2.300	14.00	0.00	0.00	659.80	640.00	675.60	0.00	675.61	.36	1.03	823.51	1059.54
2.300	14.00	0.00	0.00	659.80	960.00	676.69	0.00	676.72	.63	1.41	901.74	1210.91
2.700	6.00	678.90	676.20	659.80	730.00	676.25	0.00	676.26	.40	1.11	866.58	1148.02
2.700	6.00	678.90	676.20	659.80	730.00	676.25	0.00	676.27	.40	1.11	866.95	1148.77
2.700	6.00	678.90	676.20	659.80	420.00	665.85	0.00	665.95	11.59	2.74	189.49	123.38
2.700	6.00	678.90	676.20	659.80	640.00	675.60	0.00	675.61	.37	1.03	823.38	1059.28
2.700	6.00	678.90	676.20	659.80	960.00	676.71	0.00	676.73	.63	1.41	902.68	1212.42
2.800	50.00	0.00	0.00	659.30	730.00	676.26	0.00	676.26	.15	.67	1843.72	1912.87
2.800	50.00	0.00	0.00	659.30	730.00	676.25	0.00	676.27	.41	1.12	973.82	1144.62
2.800	50.00	0.00	0.00	659.30	420.00	665.91	0.00	666.01	10.08	2.62	222.23	132.30
2.800	50.00	0.00	0.00	659.30	640.00	675.61	0.00	675.61	.14	.63	1732.10	1738.04
2.800	50.00	0.00	0.00	659.30	960.00	676.73	0.00	676.74	.22	.84	1924.20	2043.27
3.000	360.00	0.00	0.00	659.60	730.00	676.26	0.00	676.27	.06	.41	2970.44	2890.18
3.000	360.00	0.00	0.00	659.60	730.00	676.27	0.00	676.28	.48	1.14	889.37	1049.03
3.000	360.00	0.00	0.00	659.60	420.00	666.26	0.00	666.29	5.94	1.83	415.57	172.34
3.000	360.00	0.00	0.00	659.60	640.00	675.62	0.00	675.62	.06	.39	2785.78	2621.72
3.000	360.00	0.00	0.00	659.60	960.00	676.74	0.00	676.74	.10	.52	3107.71	3095.64
3.500	700.00	0.00	0.00	659.70	730.00	676.27	0.00	676.27	.07	.42	2942.91	2849.58
3.500	700.00	0.00	0.00	659.70	730.00	676.30	0.00	676.32	.49	1.15	884.22	1040.02
3.500	700.00	0.00	0.00	659.70	420.00	666.62	0.00	666.64	4.38	1.61	469.22	200.70
3.500	700.00	0.00	0.00	659.70	640.00	675.62	0.00	675.62	.06	.39	2758.44	2582.76
3.500	700.00	0.00	0.00	659.70	960.00	676.75	0.00	676.75	.10	.52	3080.49	3054.51

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
4.000	700.00	0.00	0.00	659.80	730.00	676.27	0.00	676.28	.57	1.12	1113.03	966.38
4.000	700.00	0.00	0.00	659.80	730.00	676.34	0.00	676.36	.81	1.34	733.53	812.96
4.000	700.00	0.00	0.00	659.80	420.00	667.09	0.00	667.24	19.21	3.16	133.08	95.82
4.000	700.00	0.00	0.00	659.80	640.00	675.62	0.00	675.63	.57	1.09	985.87	846.72
4.000	700.00	0.00	0.00	659.80	960.00	676.75	0.00	676.77	.81	1.37	1208.47	1066.08

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR FLOODPLAIN, U.S. BOSCHULTZ RD.

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1      JOB HJD FIA H-4705  T-06      U.S. BUSCHOETZ ROAD
T2      DEERFIELD VILLAGE FIS
T3      RIVER RAISIN FLOODWAY

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      -1.       4.        0.        0.  0.000000      0.00      0.0       0.    671.740     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
    15.000     0.000     0.000     0.000     0.000     1.080     0.000     0.000     0.000     15.000
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*PROF 6

CCHV=    .015 CEHV=    .035
*SECNO 4.800
   SECNO     DEPTH     CWSEL     CRIWS     WSEIK     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=      677.20 ELREA=      671.80

     4.80     18.24    671.74      0.00    671.74    671.87      .13      0.00      0.00    664.00
     9000.       0.     9000.        0.        0.      3168.       0.        0.        0.     663.50
     0.00      0.00      2.84      0.00      .092      .059      .092     0.000    653.50     83.20
  .000396        0.        0.        0.         0         0         0      0.00    224.00    307.20


FLOW DISTRIBUTION FOR SECNO=      4.80          CWSEL=    671.74

STA=      83.      307.
  PER Q=    100.0
   AREA=   3167.7
    VEL=      2.8

CCHV=    .150 CEHV=    .350
*SECNO 4.900
     4.90     19.81    671.91      0.00      0.00    671.96      .06       .09       .01    665.00
     9000.     862.     8000.      138.      1031.     4043.     262.       31.        3.     665.00
      .05       .84      1.98       .53       .092      .065      .092      .063    652.10    370.31
  .000203      500.      300.      150.         2         0         0      0.00    495.65    865.96


FLOW DISTRIBUTION FOR SECNO=      4.90          CWSEL=    671.91

STA=      370.      520.      790.      855.
  PER Q=      9.6      88.9       1.5
   AREA=   1031.4   4042.6     262.3
    VEL=       .8       2.0        .5

*SECNO 5.000
3280 CROSS SECTION      5.00 EXTENDED      .65 FEET

     5.00     19.65    672.15      0.00      0.00    672.19      .04       .23       .00    666.50
     9000.    4482.     4518.        0.      5368.     2278.       0.      166.       18.     671.50
      .24       .83      1.98      0.00      .092      .065      .092      .070    652.50    840.33
  .000264      700.     1100.     1100.         2         0         0      0.00   1129.67   1970.00


FLOW DISTRIBUTION FOR SECNO=      5.00          CWSEL=    672.15

STA=      840.     1790.     1970.
  PER Q=     49.8      50.2
   AREA=   5367.8   2277.8
    VEL=       .8       2.0

1490 NH CARD USED
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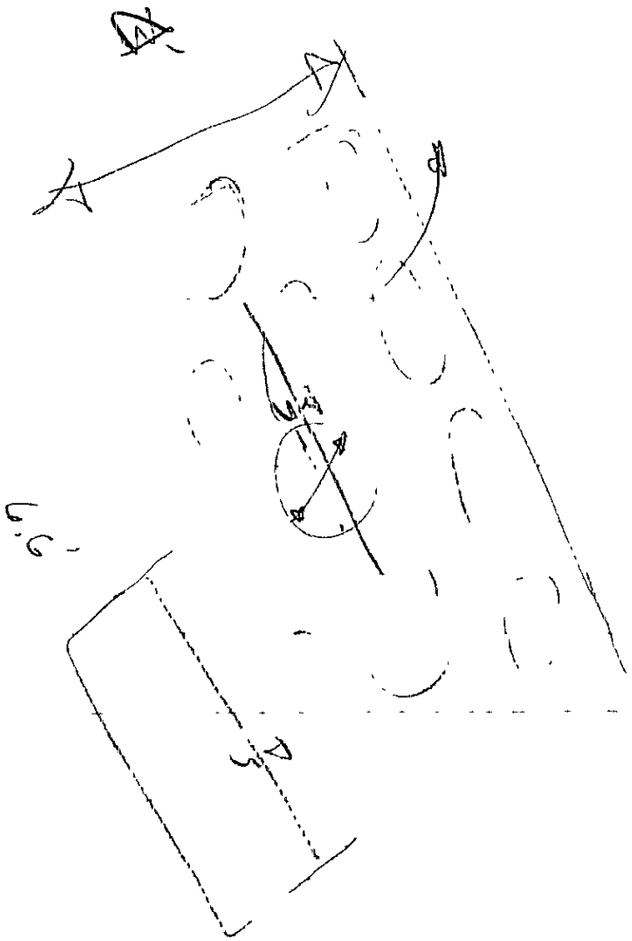

*SECNO 5.300

5.30	20.51	672.51	0.00	0.00	672.53	.01	.33	.00	668.00
9000.	3698.	3302.	0.	13247.	2192.	0.	551.	77.	676.00
.79	.43	1.51	0.00	.136	.065	.092	.077	652.00	999.53
.000150	1300.	2100.	2100.	2	0	0	0.00	2596.79	3596.33

FLOW DISTRIBUTION FOR SECNO= 5.30 CWSEL= 672.51

STA=	1000.	1200.	1500.	1700.	2100.	2300.	2550.	2900.	3100.	3300.	3420.	3600.
PER Q=	9.7	13.6	5.0	8.6	3.5	5.1	7.8	4.1	3.8	2.2	36.7	
AREA=	1254.0	1803.7	1182.5	2164.9	952.5	1315.6	1929.3	1052.5	1002.5	589.5	2192.0	
VEL=	.7	.7	.4	.4	.3	.4	.4	.4	.3	.3	1.5	

29% 35% Σ= 60%

*SECNO 5.800

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALCB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNI	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
5.80	21.60	672.90	0.00	0.00	672.94	.04	.40	.01	667.50
9000.	1985.	4509.	2506.	2892.	1976.	5748.	1110.	169.	666.50
1.20	.69	2.28	.44	.092	.065	.162	.077	651.30	706.68
.000239	1300.	2500.	1600.	2	0	0	0.00	1853.90	2560.58

FLOW DISTRIBUTION FOR SECNO= 5.80 CWSEL= 672.90

STA=	707.	760.	1360.	1470.	1860.	2560.	2561.
PER Q=	.5	21.6	50.1	13.6	14.3	.0	
AREA=	103.9	2787.8	1976.5	2494.6	3252.5	.8	
VEL=	.4	.7	2.3	.5	.4	.1	

1490 NH CARD USED

*SECNO 6.000

6.00	22.14	673.14	0.00	0.00	673.18	.05	.24	.00	667.50
9000.	4401.	4599.	0.	7296.	1944.	0.	1284.	197.	677.00
1.36	.60	2.37	0.00	.150	.065	.162	.077	651.00	1344.39
.000350	600.	1000.	900.	2	0	0	0.00	1462.71	2807.10

FLOW DISTRIBUTION FOR SECNO= 6.00 CWSEL= 673.14

STA=	1344.	1400.	1700.	2100.	2670.	2810.
PER Q=	.5	7.7	13.6	27.1	51.1	
AREA=	101.1	1015.7	2254.3	3924.9	1944.3	
VEL=	.5	.7	.5	.6	2.4	

1490 NH CARD USED

*SECNO 7.000

7.00	22.02	673.42	0.00	0.00	673.46	.05	.28	.00	665.00
9000.	397.	5745.	2857.	586.	2735.	5612.	1464.	221.	667.50
1.54	.68	2.10	.51	.108	.065	.143	.077	651.40	230.32
.000228	700.	1200.	800.	1	0	0	0.00	1249.08	1479.40

FLOW DISTRIBUTION FOR SECNO= 7.00 CWSEL= 673.42

STA=	230.	330.	510.	760.	1440.	1479.
PER Q=	4.4	63.8	11.2	20.2	.4	

AREA=	536.2	2734.7	1477.4	4018.6	116.4
VEL=	.7	2.1	.7	.5	.3

1490 NH CARD USED

*SECNO 8.000

8.00	21.98	673.68	0.00	0.00	673.71	.03	.25	.00	678.20
9000.	0.	5140.	3860.	0.	2764.	6761.	1715.	258.	670.00
1.79	0.00	1.86	.57	-.108	.065	.115	.076	651.70	174.47
.000192	800.	1200.	1200.	2	0	0	0.00	1457.57	1632.04

FLOW DISTRIBUTION FOR SECNO= 8.00 CWSEL= 673.68

STA=	174.	360.	500.	500.	770.	835.	885.	1100.	1500.	1632.
PER Q=	57.1	4.4	6.1	7.9	5.9	4.5	5.7	7.0	1.3	
AREA=	2764.4	639.4	683.1	982.8	565.0	431.6	1235.2	1812.4	412.0	
VEL=	1.9	.6	.8	.7	.9	.9	.4	.3	.3	

*SECNO 9.000

9.00	21.90	673.90	0.00	0.00	673.92	.03	.21	.00	665.00
9000.	4925.	4024.	51.	7074.	2195.	95.	1934.	284.	665.00
2.07	.70	1.83	.54	-.108	.065	.092	.077	652.00	10.95
.000157	800.	1600.	800.	0	0	0	0.00	1064.67	1075.62

FLOW DISTRIBUTION FOR SECNO= 9.00 CWSEL= 673.90

STA=	11.	50.	350.	920.	1050.	1060.	1076.
PER Q=	.2	12.7	41.8	44.7	.5	.1	
AREA=	76.2	1921.5	5075.8	2195.1	64.0	30.5	
VEL=	.3	.6	.7	1.8	.6	.3	

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL D.S. BUSCHOLTZ ROAD

00BREAK00

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1      JOB HUD FIA H-4705  T-06
T2      DEERFIELD VILLAGE FIS
T3      RIVER RAISIN CALIBRATION

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
      -1.        6.        0.        0.  0.000000      0.00      0.0       0.   568.030     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

NC       .085      .085      .055      .015      .035     0.000     0.000     0.000     0.000     0.000
QT      5.000  6300.000  8200.000  9000.000 10600.000  7400.000     0.000     0.000     0.000     0.000

X1      2.000    18.000   600.000   770.000     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   677.000   677.000     0.000
GR    583.000     0.000   679.000   400.000   678.500   600.000   660.000   640.000   655.000   650.000
GR    653.500   657.000   651.500   660.000   651.500   680.000   651.700   700.000   651.500   710.000
GR    654.700   730.000   666.000   770.000   665.600   810.000   665.600  1030.000   665.800  1380.000
GR    666.000  1450.000   678.000  1530.000   682.000  1600.000     0.000     0.000     0.000     0.000

X1      2.500    13.000   490.000   630.000   700.000   700.000   700.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   677.000   677.000     0.000
GR    676.000    50.000   668.000    80.000   668.000   490.000   656.000   500.000   653.000   510.000
GR    651.300   540.000   651.300   580.000   653.000   610.000   656.000   615.000   666.500   630.000
GR    667.000   830.000   670.000  1330.000   675.000  1400.000     0.000     0.000     0.000     0.000

X1      3.000    17.000   490.000   630.000  1200.000  1200.000  1200.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   677.000   671.000     0.000
GR    676.000    45.000   668.000    80.000   668.000   200.000   668.000   490.000   656.000   500.000
GR    653.000   505.000   651.000   518.000   652.500   550.000   653.000   570.000   651.300   600.000
GR    653.000   611.000   656.000   615.000   666.400   630.000   666.700   830.000   669.800  1428.000
GR    670.300  1630.000   675.000  1820.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      0.000     0.000     0.000      .500     1.000     0.000     0.000     0.000     0.000     0.000

X1      4.200    29.000    40.000   200.000   900.000   600.000   800.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   677.000   671.500     0.000
GR    672.200     0.000   676.000    40.000   656.000    75.000   653.400    80.000   653.500   112.000
GR    653.800   135.000   654.000   175.000   656.000   181.000   668.000   186.000   668.000   200.000
GR    668.000   275.000   668.000   311.000   668.000   470.000   669.000   480.000   673.500   500.000
GR    673.000   520.000   680.000   520.000   680.000   600.000   680.000   620.000   673.000   620.000
GR    670.000   700.000   670.000   800.000   670.000  1000.000   670.000  1200.000   670.000  1400.000
GR    670.000  1600.000   673.000  1715.000   674.500  1800.000   674.800  1900.000     0.000     0.000
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RECEIVED
OCT 09 1979
WATER MANAGEMENT

X1	4.300	15.000	135.000	310.000	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	677.200	672.000	0.000
GR	677.200	0.000	673.200	135.000	670.500	135.100	658.700	135.200	656.200	145.000
GR	654.000	165.000	653.200	185.000	653.200	275.000	657.500	290.000	658.000	309.900
GR	673.300	310.000	671.000	800.000	671.000	1733.000	674.000	1800.000	674.000	2000.000
SB	1.250	1.330	2.500	0.000	175.000	5.000	3250.000	0.000	654.480	654.480
X1	4.700	0.000	0.000	0.000	33.000	33.000	33.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	673.600	672.300	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	677.200	672.300	0.000
BT	6.000	0.000	677.200	0.000	115.000	677.200	0.000	311.000	677.900	0.000
BT	600.000	673.200	0.000	800.000	672.300	0.000	801.000	675.000	0.000	0.000
X1	4.710	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	677.200	672.300	0.000
X5	-5.000	.050	.070	.070	.060	.050	0.000	0.000	0.000	0.000
X1	4.800	18.000	130.000	480.000	50.000	50.000	50.000	.640	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	677.200	672.300	0.000
GR	677.500	0.000	677.000	40.000	671.500	90.000	664.000	130.000	656.400	150.000
GR	655.000	190.000	653.500	220.000	653.500	320.000	660.500	360.000	662.000	400.000
GR	663.500	480.000	672.000	530.000	680.000	530.000	680.000	680.000	672.000	680.000
GR	668.000	900.000	668.000	1720.000	675.000	1820.000	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 RELEASE DATED NOV 76 UPDATED FEB 1977
 ERROR CORR -  01
 MODIFICATION -  50,51,52
**************************************************


T1     JOB HUD FIA H-4705  T-06
T2     DEERFIELD VILLAGE FIS
T3     RIVER RAISIN 100 YR FLOW

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

     -1.       4.        0.        0.     .000950     0.00      0.0       0.     666.500    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
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*PROF 4

CCHV= .015 CEHV= .035
*SECNO 2.000

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
2.00	18.14	669.64	0.00	666.50	669.96	.32	0.00	0.00	678.50
9000.	0.	9000.	0.	0.	1987.	0.	0.	0.	666.00
0.00	0.00	4.53	0.00	.085	.055	.085	0.000	651.50	619.16
.000951	0.	0.	0.	0	0	4	0.00	150.84	770.00

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.00 ELREA= 677.00

*SECNO 2.500

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.00 ELREA= 677.00

2.50	18.92	670.22	0.00	0.00	670.46	.24	.50	.00	668.00
9000.	0.	9000.	0.	0.	2294.	0.	34.	2.	666.50
.05	0.00	3.92	0.00	.085	.055	.085	.055	651.30	490.00
.000566	700.	700.	700.	2	0	0	0.00	140.00	630.00

*SECNO 3.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.00 ELREA= 671.00

3.00	19.88	670.88	0.00	0.00	671.11	.22	.65	.00	668.00
9000.	0.	9000.	0.	0.	2370.	0.	99.	6.	666.40
.14	0.00	3.80	0.00	.085	.055	.085	.055	651.00	490.00
.000513	1200.	1200.	1200.	3	0	0	0.00	140.00	630.00

CCHV= .500 CEHV= 1.000
*SECNO 4.200

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.00 ELREA= 671.50

4.20	17.98	671.38	0.00	0.00	671.65	.27	.50	.04	676.00
9000.	0.	9000.	0.	0.	2164.	0.	140.	9.	668.00
.19	0.00	4.16	0.00	.085	.055	.085	.055	653.40	48.08
.000766	900.	800.	600.	2	0	0	0.00	151.92	200.00

*SECNO 4.300

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

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.20 ELREA= 672.00

4.30	18.42	671.62	0.00	0.00	671.76	.14	.05	.06	673.20
9000.	0.	9000.	0.	0.	3009.	0.	146.	9.	673.30
.20	0.00	2.99	0.00	.085	.055	.085	.055	653.20	135.06
.000335	100.	100.	100.	2	0	0	0.00	174.93	310.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.33	2.50	0.00	175.00	5.00	3250.00	0.00	654.48	654.48

*SECNO 4.700

3265 DIVIDED FLOW

CLASS A LOW FLOW

3420 BRIDGE W.S.= 671.62 BRIDGE VELOCITY= 3.09 CALCULATED CHANNEL AREA= 2914.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	671.77	.01	0.	9000.	3250.	3250.	673.60	672.30

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.20 ELREA= 672.30

4.70	18.43	671.63	0.00	0.00	671.77	.14	.01	0.00	673.20
9000.	0.	9000.	0.	0.	3011.	0.	148.	9.	673.30
.20	0.00	2.99	0.00	.085	.055	.085	.055	653.20	135.06
.000334	33.	33.	33.	0	0	0	0.00	174.93	310.00

*SECNO 4.710
WATER EL=X5 CARD= 671.701

3265 DIVIDED FLOW

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.20 ELREA= 672.30

4.71	18.50	671.70	0.00	0.00	671.84	.14	.00	.00	673.20
9000.	0.	9000.	0.	0.	3023.	0.	149.	9.	673.30
.20	0.00	2.98	0.00	.085	.055	.085	.055	653.20	135.06
.000330	1.	1.	1.	0	0	0	0.00	174.93	310.00

*SECNO 4.800

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 677.20 ELREA= 672.30

4.80	18.24	671.74	0.00	0.00	671.86	.13	.02	.01	664.00
9000.	0.	9000.	0.	0.	3165.	0.	152.	10.	663.50
.21	0.00	2.84	0.00	.085	.055	.085	.055	653.50	83.20
.000340	50.	50.	50.	1	0	0	0.00	224.00	307.20

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL U.S. OF BUSCHOLTZ Rd.

00BREAK00

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**********************************************

I1      JOB HUD FIA H-4705  T-06
I2      DEERFIELD VILLAGE FIS
I3      RIVER RAISIN CALIBRATION

J1  ICHECK     INQ       NINV      IDIR       STFT      METRIC    HVINS     Q         WSEL      FQ

      -1.       6.        0.        0.   0.000000       0.00      0.0       0.   670.000     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH      FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.000    -1.000     0.000     0.000     1.080     0.000     0.000     0.000     0.000

NC      .085      .085      .055      .015      .035     0.000     0.000     0.000     0.000     0.000
QT     5.000  6300.000  8200.000  9000.000 10600.000  7400.000     0.000     0.000     0.000     0.000

X1     4.300    18.000   130.000   480.000     0.000     0.000     0.000      .640     0.000     0.000
X3    10.000     0.000     0.000     0.000     0.000     0.000     0.000   677.200   671.800     0.000
GR   677.500     0.000   677.000    40.000   671.500    90.000   664.000   130.000   656.400   150.000
GR   655.000   190.000   653.500   220.000   653.500   320.000   660.500   360.000   662.000   400.000
GR   663.500   480.000   672.000   530.000   680.000   530.000   680.000   680.000   672.000   680.000
GR   663.000   900.000   668.000  1720.000   675.000  1820.000     0.000     0.000     0.000     0.000
NC     0.000     0.000      .060      .150      .350     0.000     0.000     0.000     0.000     0.000

X1     4.900     9.000   520.000   790.000   500.000   150.000   300.000     0.000     0.000     0.000
GR   675.000   370.000   665.000   371.000   665.000   520.000   656.000   590.000   652.100   660.000
GR   656.000   730.000   660.000   770.000   665.000   790.000   675.000   900.000     0.000     0.000

X1     5.000     7.000  1790.000  1970.000   700.000  1100.000  1100.000     0.000     0.000     0.000
GR   675.000   840.000   666.500   841.000   666.500  1790.000   652.500  1825.000   652.500  1880.000
GR   664.500  1920.000   671.500  1970.000     0.000     0.000     0.000     0.000     0.000     0.000
NH     4.000      .085  1500.000      .150  3420.000      .060  3600.000      .085  4200.000     0.000

X1     5.300    24.000  3420.000  3600.000  1300.000  2100.000  2100.000     0.000     0.000     0.000
GR   680.000   999.000   666.000  1000.000   666.500  1200.000   666.500  1500.000   666.700  1700.000
GR   667.500  2100.000   668.000  2300.000   666.500  2550.000   667.500  2900.000   667.000  3100.000
GR   668.000  3300.000   667.200  3370.000   668.000  3420.000   664.800  3440.000   666.000  3465.000
GR   652.000  3480.000   661.500  3500.000   656.700  3518.000   652.600  3530.000   652.000  3560.000
GR   657.000  3580.000   676.000  3600.000   677.000  3640.000   678.000  4200.000     0.000     0.000
NC      .085      .150     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1     5.800    10.000  1360.000  1470.000  1800.000  1600.000  2500.000     0.000     0.000     0.000
GR   678.500   630.000   669.000   760.000   667.500  1360.000   660.000  1361.000   651.300  1380.000
GR   651.300  1430.000   666.500  1470.000   666.500  1860.000   670.000  2560.000   675.000  2561.000
NH     3.000      .085  1700.000      .150  2670.000      .060  2810.000     0.000     0.000     0.000
```

X1	6.000	12.000	2670.000	2810.000	600.000	900.000	1000.000	0.000	0.000	0.000
GR	678.000	1270.000	669.500	1400.000	670.000	1700.000	665.000	2100.000	667.500	2670.000
GR	665.500	2700.000	657.000	2734.000	653.700	2738.000	651.000	2770.000	654.700	2795.000
GR	657.000	2795.000	677.000	2810.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	4.000	.100	330.000	.060	510.000	.100	760.000	.150	1490.000	0.000
X1	7.000	13.000	330.000	510.000	700.000	800.000	1200.000	0.000	0.000	0.000
GR	675.000	230.000	670.000	231.000	665.000	330.000	660.000	360.000	655.000	375.000
GR	651.400	390.000	651.400	420.000	655.000	440.000	660.000	460.000	667.500	510.000
GR	667.500	760.000	667.500	1440.000	675.000	1490.000	0.000	0.000	0.000	0.000
NH	4.000	.085	170.000	.060	360.000	.085	885.000	.150	2300.000	0.000
X1	8.000	31.000	170.000	360.000	800.000	1200.000	1200.000	0.000	0.000	0.000
GR	685.000	0.000	680.500	0.000	680.300	36.000	678.200	170.000	660.000	188.000
GR	650.000	232.000	658.000	235.000	656.000	240.000	652.000	255.000	651.700	265.000
GR	654.800	306.000	658.000	315.000	670.000	360.000	669.800	400.000	667.800	500.000
GR	664.700	540.000	669.800	600.000	666.000	770.000	664.300	800.000	665.400	835.000
GR	664.700	885.000	667.500	925.000	667.800	970.000	669.400	1100.000	668.900	1500.000
GR	670.700	1590.000	678.500	1700.000	681.200	1800.000	677.800	1950.000	677.000	2100.000
GR	677.500	2300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	.100	.085	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	9.000	11.000	920.000	1050.000	800.000	800.000	1600.000	0.000	0.000	0.000
GR	675.000	0.000	670.000	50.000	665.000	350.000	665.000	920.000	660.000	940.000
GR	652.000	980.000	652.000	1020.000	660.000	1025.000	665.000	1050.000	670.000	1060.000
GR	675.000	1080.000	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 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**********************************************

T1      JOB HUD FIA H-4705  T-06
T2      DEERFIELD VILLAGE FIS
T3      RIVER RAISIN 100 YR FLOW

J1  ICHECK     INQ        NINV       IDIR       STRT       METRIC     HVINS      Q          WSEL       FQ
      -1.        4.         0.         0.   0.000000       0.00       0.0        0.     671.740      0.000
J2  NPROF      IPLOT      PRFVS      XSECV      XSECH      FN         ALLDC      IBW        CHNIM      ITRACE
     5.000      0.000     -1.000      0.000      0.000      1.080      0.000      0.000      0.000      0.000
```

*PROF 5

CCHV= .015 CEHV= .035
*SECNO 4.800

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	AICE	ACH	ARCB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNI	XNCH	XNB	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=					677.20	ELREA=	671.80		
4.80	18.24	671.74	0.00	671.74	671.87	.13	0.00	0.00	664.00
9000.	0.	9000.	0.	0.	3168.	0.	0.	0.	663.50
0.00	0.00	2.84	0.00	.092	.059	.092	0.000	653.50	83.20
.000396	0.	0.	0.	0	0	0	0.00	224.00	307.20
CCHV= .150 CEHV= .350									
*SECNO 4.900									
4.90	19.81	671.91	0.00	0.00	671.96	.06	.09	.01	665.00
9000.	862.	8000.	138.	1031.	4043.	262.	31.	3.	665.00
.05	.84	1.98	.53	.092	.065	.092	.063	652.10	370.31
.000203	500.	300.	150.	2	0	0	0.00	495.65	865.96
*SECNO 5.000									
3280 CROSS SECTION		5.00	EXTENDED		.65	FEET			
5.00	19.65	672.15	0.00	0.00	672.19	.04	.23	.00	666.50
9000.	4482.	4518.	0.	5368.	2278.	0.	166.	18.	671.50
.24	.83	1.98	0.00	.092	.065	.092	.070	652.50	840.33
.000264	700.	1100.	1100.	2	0	0	0.00	1129.67	1970.00
1490 NH CARD USED									
*SECNO 5.300									
5.30	20.51	672.51	0.00	0.00	672.53	.01	.33	.00	668.00
9000.	5698.	3302.	0.	13247.	2192.	0.	551.	77.	676.00
.79	.43	1.51	0.00	.136	.065	.092	.077	652.00	999.53
.000150	1300.	2100.	2100.	2	0	0	0.00	2596.79	3596.33
*SECNO 5.800									

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	XNI	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
5.80	21.60	672.90	0.00	0.00	672.94	.04	.40	.01	667.50
9000.	1985.	4509.	2506.	2892.	1976.	5748.	1110.	169.	666.50
1.20	.69	2.28	.44	.092	.065	.162	.077	651.30	706.68
.000239	1800.	2500.	1600.	2	0	0	0.00	1853.90	2560.58
1490 NH CARD USED									

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*SECNO 6.000
     6.00     22.14    673.14      0.00      0.00    673.18      .05      .24      .00    667.50
     9000.    4401.     4599.       0.      7296.     1944.       0.     1284.     197.     677.00
     1.36      .60      2.37      0.00      .150      .065      .162      .077    651.00   1344.39
   .000350     600.     1000.     900.         2         0         0      0.00   1462.71   2807.10

1490 NH CARD USED
*SECNO 7.000
     7.00     22.02    673.42      0.00      0.00    673.46      .05      .28      .00    665.00
     9000.     397.     5745.     2857.      586.     2735.     5612.     1464.     221.     667.50
     1.54      .68      2.10      .51       .108      .065      .143      .077    651.40   230.32
   .000228     700.     1200.     800.         1         0         0      0.00   1249.08   1479.40

1490 NH CARD USED
*SECNO 8.000
     8.00     21.98    673.68      0.00      0.00    673.71      .03      .25      .00    678.20
     9000.       0.     5140.     3860.        0.     2764.     6761.     1715.     258.     670.00
     1.79      0.00     1.86      .57       .108      .065      .115      .076    651.70   174.47
   .000192     800.     1200.     1200.        2         0         0      0.00   1457.57   1632.04

*SECNO 9.000
     9.00     21.90    673.90      0.00      0.00    673.92      .03      .21      .00    665.00
     9000.    4925.     4024.       51.     7074.     2195.       95.     1934.     284.     665.00
     2.07      .70      1.83      .54       .108      .065      .092      .077    652.00   10.95
   .000157     800.     1600.     800.         0         0         0      0.00   1064.67   1075.62
```



1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN & CAMP BREMOTT DR.

4) DOCUMENT TYPE: REPORT



DNR

FLOOD INSURANCE STUDY HYDRAULIC REPORT

PROJECT: HUD-FIA-H-4705 DEERFIELD VILLAGE FIS, LENAWEE CO. MICH.

CONSULTING FIRM: McNamee, Porter and Seeley/Smith, Hinchman and Grylls

WATERCOURSE: CAMP-BRENOTT DRAIN

STUDY LIMITS: CONFLUENCE WITH RIVER RAISIN (DOWNSTREAM LIMIT) TO WEST KEEGAN RD. (UPSTREAM LIMIT).

DATE OF AERIAL SURVEY: NOT APPLICABLE

DATE OF LAND SURVEY: 11/9/78 – 11/27/78
McNAMEE, PORTER & SEELEY FIELD CREW.

SOURCE OF FLOWS: Discharges were computed by MP&S/SH&G and approved by MDNR on 1/24/79

TOPOGRAPHIC INFORMATION: USGS 5 Ft topographic maps 1"=400'

METHOD OF ANALYSIS: HEC2 water surface profile computer program and hand calculations per references 5 and 6.

VARIABLES AND COEFFICIENTS:
Channel "n" 0.050
Overbank "n" 0.085
n values thru bridges 0.012 - 0.050
Contraction Coefficients 0.1 - 0.15
Expansion Coefficients 0.3 - 0.35

Bridge loss coefficients were chosen per References 1 and 2. See enclosed computation of XKOR.

PHOTOGRAPHS: Enclosed for your review, please return

CROSS-SECTIONS: Cross-section plots enclosed, please return
See Table 1 for cross-section description.

REFERENCES:

1. "Hec-2 Water Surface Profiles", Users Manual, U.S. Army Corps of Engineers, Feb. 1972.
2. "Application of the Hec-2 Bridge Routines", U.S. Army Corps of Engineers, June 1974.
3. "Roughness Characteristics of Natural Channels", Barnes, Harry H. Jr., Geological Survey Water Supply Paper 1849.
4. "Floodway Determination using computer Program Hec-2", Bonner, Vernon R., U.S. Army Corps of Engineers Hec Training Document 5, May 1974.
5. "OPEN CHANNEL HYDRAULICS", CHOW, VEN TE, McGRAW-HILL BOOK CO, 1959
6. "HANDBOOK OF HYDRAULICS", BRATER AND KING, McGRAW-HILL BOOK CO, 1976 3RD ED.

HIGH WATER MARKS & CALIBRATION:

No highwater marks were available for model calibration. A sensitivity analysis was performed for the 100 yr. flow by raising and lowering manning 'n' values by 30%. The computed 100 yr. natural water surface is shown on the enclosed profile.

STARTING CONDITIONS:

Coincidental peak flows in the Camp Brenott Drain and River Raisin are unlikely to occur so the normal depth concept was used to determine starting elevations for the Camp-Brenott Drain. Normal depth is difficult to define at the confluence with the River Raisin. However, it is apparent that the very wide area available downstream of the culvert outlet will result in the culvert outlet controlling. Hand calculations for backwater thru the culvert to determine the starting elevations upstream are enclosed.

DESIGNATED FLOODWAY

Encroachment method 4 in the HEC-2 program was used to determine encroachment stations based on an allowable surcharge of 0.1 ft. At field surveyed sections the designated floodway was established using the computer determined encroachment stations. Between field surveyed sections, the available topographic information was used to complete the floodway delineation. (See the enclosed 1" = 400' topographic map for floodway delineation).

COMPUTER OUTPUTS

Enclosed are complete computer outputs for (i) 100 year natural and 100 yr designated floodway, (ii) 10, 50 and 500 yr flood profiles and (iii) sensitivity analysis for your review.

SECNO TABLE SECTION * TABLE 1 CAMP-BRENOTT DRAIN

		C	*								
	3	C	1./***HEC2 RUNS START U/S 7 FT CULVERT USING								
	4	C	1.7***HAND CALCULATED STARTING ELEVATIONS								
	5	C	1.7***U/S FACE 7 FT CULVERT-REPEAT OF SEC. 2.8								
	6	C	2.3***D/S FACE RAILROAD BRIDGE-REPEAT OF SEC. 2.8								
	7	C	2.7***U/S FACE RAILROAD BRIDGE-REPEAT OF SEC. 2.8								
	8	C	2.8***50 FT U/S RAILROAD BRIDGE-FIELD SURVEYED								
	9	C	3***FIELD SURVEYED VALLEY SECTION								
	10	C	4***FIELD SURVEYED VALLEY SECTION								
	11	T1	HUD-FIA H-4705 T-06								
	12	T2	DEERFIELD VILLAGE FIS								
	13	T3	CAMP-BRENOTT DRAIN								
	14	J1	-1	2					.5		665
	15	NC	.085	.085	.050	.15	.35				
	16	QT	4	420	640	730	960				
	17	X1	1.7	12	200	229	0	0	0	.96	
	18	GR	676.6	0	673	114	669.4	144	667.2	174	66
	19	GR	660.3	208	659.3	213	660.3	222	663.7	229	
	20	GR	666.4	298	675.0	440					
	21	X1	2.3				14	14	14		
	21.5	X3	10							676.2	67
	22	SB	1.05	1.19	2.8	200	29	4	653	.67	66
	23	X1	2.7				6	6	6		
	24	X2			1	676.2	678.9			1.75	
	24.5	X3	10							678.9	67
	25	X1	2.8				50	50	50	.96	
	26	NC				.1	.3				
	27	X1	3	14	195	230	360	360	360		
	28	GR	678.3	0	677	147	669.2	175	667.8	195	66
	29	GR	659.6	217	660.5	220	663.6	230	663.8	260	66
	30	GR	668.2	420	673.9	435	678.3	590	684.1	790	
	31	X1	4	15	1012	1045	1400	1400	1400	.67	
	32	GR	678	200	676.7	435	675	500	674.7	550	66
	33	GR	666.9	700	665.9	900	667.6	1012	661.0	1029	65
	34	GR	661.0	1040	668.9	1045	676.0	1128	676.0	1400	67
	35	LJ									
	36	T1	HUD-FIA H-4705 T-06								
	37	T2	DEERFIELD VILLAGE FIS								
	38	T3	CAMP-BRENOTT DRAIN								
	39	J1	-1	3					.5		675
	40	J2	2								
	41	TJ	HUD-FIA H-4705 T-06								
	42	T2	DEERFIELD VILLAGE FIS								
	43	T3	CAMP-BRENOTT DRAIN								
	44	J1	1	5					5		676
	45	J2	15								

T-06 DEERFIELD VILLAGE FIS

MPG 6/14/79

CAMP BIRENDTT DRAIN - Culvert hydraulics hand computations

Assumption: Culvert will be flowing freely at the outlet. The cross section D/s at the exit is very wide and Normal depth there would be lower than critical depth in pipe @ outlet.

1) Examine outlet for drawdown by computing critical depth

Set WSEL = 0.99d d = 7 ft $D_c/d = 0.99$

Table 8-10 Brater $K_c' = 8.83$

$\Rightarrow Q_c = K_c'(d)^{5/2} = 8.83(7)^{5/2} = 1150$ cfs

Since 500 yr flow = 960 cfs, culvert will not be flowing full for the entire length for 10, 50, 100 or 500 yr.

2) Compute d_c for 100 yr and 10 yr flows:

$Q_{100} = 730$ cfs $Q = K_c' d^{5/2}$ $K_c' = \frac{730}{(7)^{5/2}} = 5.63$

$\Rightarrow D_c/d = 0.94 = D_c = .94(7\text{ ft}) = 6.58\text{ ft} = D_{crit}$

$Q_{10} = 420$ cfs $K_c' = \frac{420}{(7)^{5/2}} = 3.24 \Rightarrow D_c/d = 0.77 \Rightarrow D_c = (.77)7 = 5.39$ ft

3) Run a backwater to determine length that culvert flows partially full.

100 yr:

$A_{full} = \frac{(7')^2\pi}{4} = 38.5\text{ ft}^2$ $R_{full} = \frac{7}{4} = 1.75$ ft $V_{full} = \frac{730}{38.5} = 19.0$

Compute Critical depth in pipe for 50 yr flow.

$K_c' = \frac{640\text{ cfs}}{(7)^{5/2}} = 4.93 \Rightarrow D_c/d = 0.91 \Rightarrow D_c = 6.37'$

T-06 DEERFIELD VILLAGE FIS

MPG 6/14/79

$S_f = \left(\frac{Qn}{1.49AR^{2/3}}\right)^2$ $\Delta X = \frac{H_o - H_u}{S_o - S_{\Delta V}}$

* By Table 7.9, Bretor $n = .012$ $S_o = 0.3\%$

100 YR:

Invert	y	A*	R*	Q	V	h_{vr}	H	S	$S_{\Delta V}$	$S_o - S_{\Delta V}$	ΔH	ΔX	WSEL
658.7	6.58	31.5	2.02	730	19.47	5.88	12.46	.0097					665.28
								↓	.0104	.0074	.12	16 ft	
658.75	7.0	38.5	1.75	730	19.0	5.58	12.58	.0111					665.75

Result: Culvert flows partly full for 16 ft. (100 yr thru culvert) no weir flow assumed

10 YR:

Invert	y	A	R	Q	V	h_{vr}	H	S	$S_{\Delta V}$	$S_o - S_{\Delta V}$	ΔH	ΔX	WSEL
658.7	5.39	31.8	2.12	420	13.2	2.71	8.10	.00415					
				410			8.21		.00377	.000772	.08	104 ft	(142 ft)
	6.0	35.2	2.12	420	11.9	2.21	8.23	.0034			.11		
	6.16	35.9	2.11	420	11.7	2.13	8.29	.00329	.00334	.000343	.08	232 ft	$\Sigma\Delta X = 37($
	6.09	35.53	2.11	420	11.8	2.17	8.26	.00334	.00337	.00037	.03	81 ft	(too lo
													$\Sigma\Delta X = 22.$
659.5	6.1												

WSEL inside pipe = 665.6

Compute Backwater for 50 yr.

50 YR:

Invert	y	A	R	Q	V	h_{vr}	H	S	$S_{\Delta V}$	$S_o - S_{\Delta V}$	ΔH	ΔX	WSEL
658.7	6.37	36.8	2.07	640	17.4	4.71	11.08	.00744					
									.00742	.00442	.12	27	665.0
	6.58	37.5	2.02	640	17.1	4.52	11.10	.00740					
									.00795	.00495	.19	38	
658.9	7.0	38.5	1.75	640	16.6	4.29	11.29	.00850				$\Sigma = 65$	665.

Result: Culvert will flow partly full for 65 ft for 50 yr. flow (No weir flow assumed)

T-06 DEERFIELD VILLAGE TIS

MPG 6/14/79

CAMP - BRENOTT DRAIN

XKOR Computations

100 YR XKOR = $K_c + K_f + 1$ $K_e = 0.5$

$K_f = 29(n)^2 L / R^{4/3}$ $L = 276'$ $L_{pressure} = 260$ ft

1 ft flow $K_f = 29(.012)^2 (260) / (1.75)^{4/3} = 0.51$

$\Rightarrow$ XKOR = 0.5 + 0.53 + 1 = 2.01

500 YR $K_f = 29(.012)^2 (276\text{ ft}) / (1.75)^{4/3} = 0.55$ Assume $L_{pressure} \cong 276$ ft

XKOR = 0.5 + 0.55 + 1 = 2.05

50 YR $K_f = 29(.012)^2 (276 - 65) / (1.75)^{4/3} = 0.42$

XKOR = 0.5 + 0.42 + 1 = 1.92 $L_{pressure} = 211$ ft

10 YR = Low flow thru total length

Hand computation of WSEL u/s culvert:

100 yr: WSEL @ location of pressure flow = 665.75

$V_{pipe} = \frac{730}{38.5} = 19.0$ $h_{vs_{pipe}} = 5.88$

$h_L = XKOR(h_{vs_{pipe}}) = (2.01)\,5.88 = 11.8'$

Energy @ u/s face = $665.75 + 11.8 + \underbrace{260(.003)}_{\Delta L \cdot S_{bottom}} = 678.35$

WSEL @ u/s face = $E - h_{vs_{CH}}$ (0)

WSEL @ u/s face = 678.4 (Assumption of no weir flow is no good)

weir @ 676.0'

50 yr: WSEL @ location of pressure flow = 665.90

$V_{pipe} = 17.4$ fps $h_{vs_{pipe}} = 4.71'$

$h_L = XKOR(h_{vs_{pipe}}) = (1.92)(4.71) = 9.04$ ft

Energy @ u/s face = $665.90 + 9.04\,ft + \underbrace{211(.003)}_{\Delta L \cdot S_{bottom}} = 675.57$

WSEL @ u/s face = $E - h_{vs_{CH}}$ (0)

WSEL @ u/s face = 675.6 (Assumption of no weir flow is OK)

500 yr: Assume pressure flow for entire length ⇒ WSEL = crown of culvert @ exit.

$WSEL_{D/S} = 665.7$

$V_{pipe} = \frac{960 \text{ cfs}}{38.5 \text{ ft}^2} = 24.9 \text{ fps}$ $\quad h_{v_{pipe}} = 9.65$

$h_L = (XKOR)\, h_{v_{pipe}} = (2.05)\,9.65 = 19.79 \text{ ft}$

Energy u/s face = 665.7 + 19.79 + 276(.003)

= 686.32

WSEL @ u/s Face = E − $h_{v_{CH}}$ = 686.3

10 yr: WSEL inside pipe = 665.60 $\quad$ $0.5 h_{v_{pipe}}$ entrance loss

$h_{v_{pipe}} = 2.2'$

⇒ E inside pipe = 667.8 + 0.5(2.2) = 668.9

Energy u/s culvert = 668.9 − 0.1 = 668.8 = WSEL u/s Culvert.

($h_{v_{channel}}$)

Compute Weir flow Rating Curve:

$Q = CLH^{3/2}$ $\quad \Rightarrow \quad H = \left[\frac{Q}{(2.5)(200)}\right]^{2/3}$

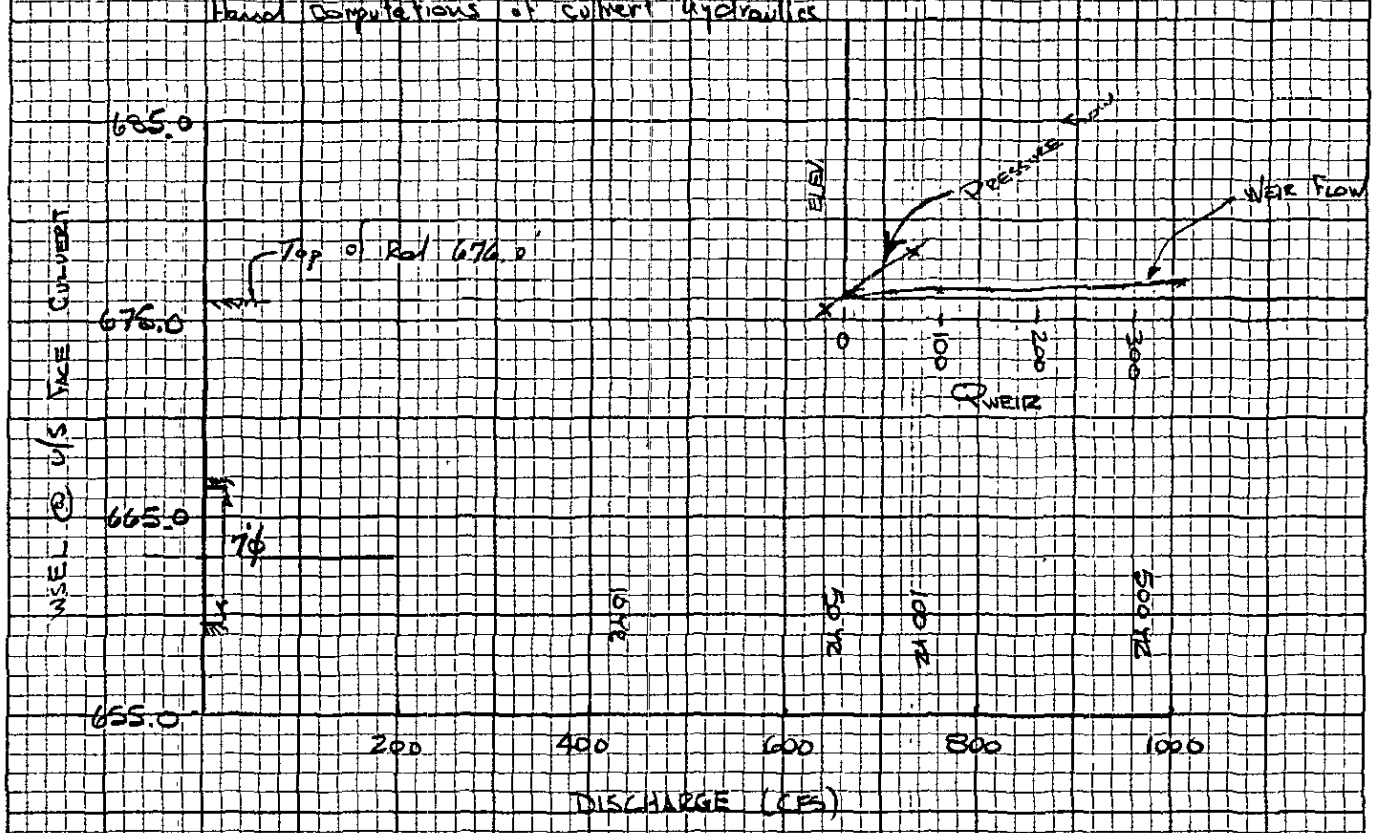
L = 200 ft

use C = 2.5 $\quad H = \left[\frac{Q}{500}\right]^{2/3}$

Q	H
50 cfs	.22
100 "	.34
150 "	.45
250 "	.63
350 "	.79

CAMP- BRENOTT DRAIN

Hand computations of culvert hydraulics



Combination Pressure and Weir Flow:

Weir flow curve is very flat ⇒ $Q_{pressure}$ = 670 cfs

100 yr: Q_{100} = 730 cfs - 670 cfs ⇒ Q_{WEIR} = 60 cfs

H = 0.24 ft ⇒ WSEL u/s Culvert = 676.24 ft

500 yr: Q_{500} = 960 cfs - 670 cfs ⇒ Q_{WEIR} = 290 cfs

H = 0.70' ⇒ WSEL u/s Culvert = 676.70 ft

DEERFIELD VILLAGE FIS

MPG 6/19/79

CAMP BRENOTT DRAIN

Summary of results - starting water surface elevations upstream of 7' culvert.

Frequency	Starting Elev	Remarks
10 yr	668.8	Low flow thru culvert
50 yr	675.6	Pressure flow " "
100 yr	676.24	Pressure and weir flow thru culvert
500 yr	676.7	" " " " "

HUD - FIA H-4705

DEERFIELD VILLAGE FIS

MPG DATE 6/19/79

XKOR Computation

Watercourse: Comp. Brenott Drain

Bridge: Railroad Bridge u/s 7' Ø culvert

$$XKOR = K_c + K_f + 1$$

No abutments, piers and low chord only obstructions

$$\Rightarrow K_c = 0.15$$

use channel n' thru bridge

$$K_f = 29(0.050)^2(6.51)\Big/\left(\frac{653\ ft^2}{109\ ft}\right)^{4/3} = 0.04$$

$$\Rightarrow XKOR = 0.15 + 0.04 + 1 = \underline{1.19}$$

MP&S
SH&G
2223 Packard Road
Ann Arbor, Michigan
48104
(313) 769-9220

455 W. Fort St.
Detroit, Michigan
48226
(313) 964-3000

A Joint Venture

FLOOD INSURANCE STUDY

H-4705

TRANSMITTAL

To: Michigan DNR
Water Management Division
P.O. Box 30028
Lansing, Michigan 48909

Attn: Mr. Daniel Morgan, P.E.

Date: October 18, 1979

Re: Deerfield Village
Hydraulics

Gentlemen:

We are enclosing herewith X

We are sending under separate cover ___

We acknowledge receipt of ___

The following: ___ Drawings ___ Specifications X

Additional hydraulic back up data for Camp-Brenott Drain

For ___ Your approval ___ Your corrections ___ Your comments

___ Your use ✓ Your files

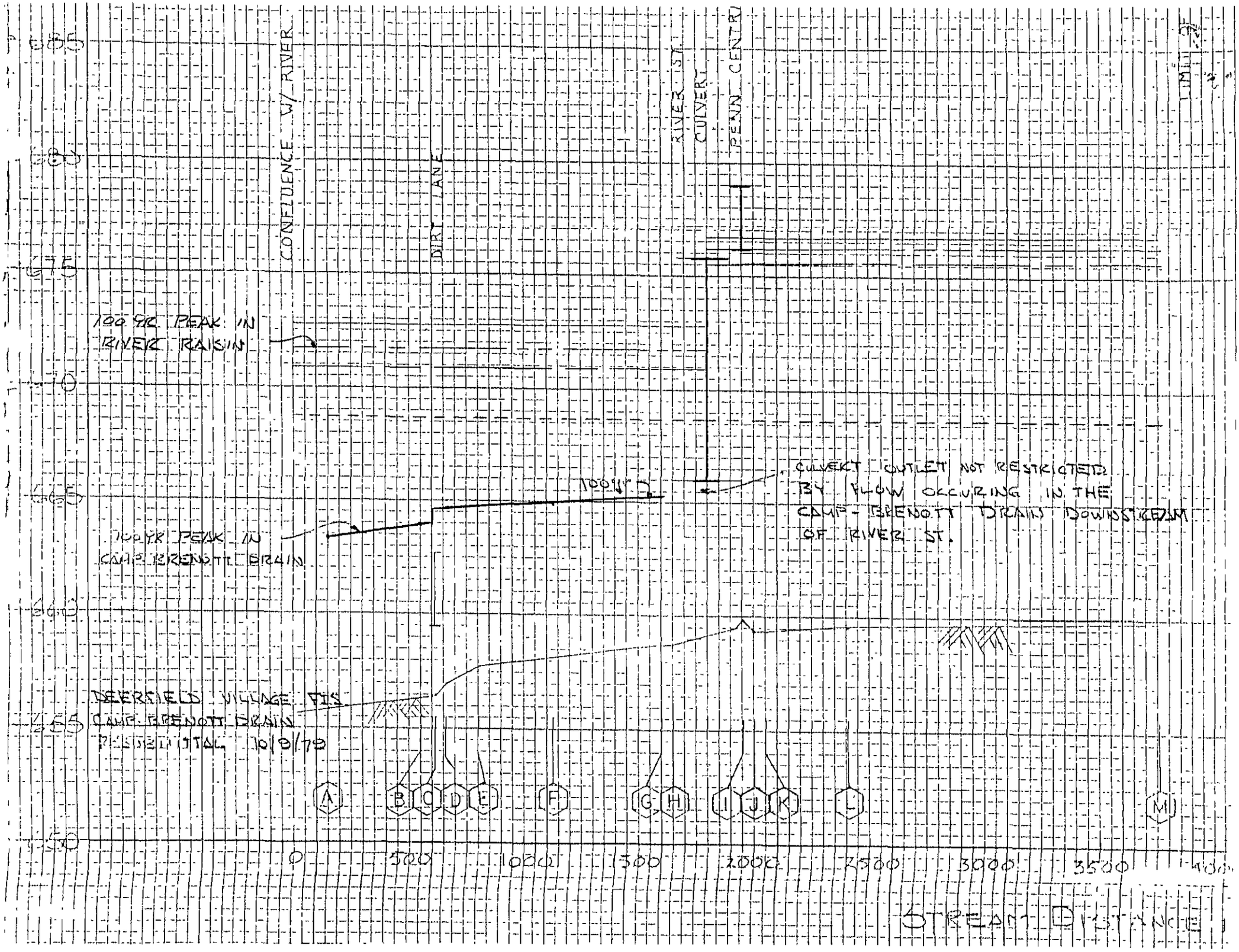
Remarks: _____

Distribution:

Daryl Flatt-SH&G
File

Very truly yours,
McNAMEE, PORTER AND SEELEY

Duane R. Meyer P.E.
Duane R. Meyer, P.E.


CONFLUENCE W/ RIVER
DIRT LANE
RIVER ST. CULVERT
PENN CENTRAL
100 YR PEAK IN RIVER RAISIN
100 YR PEAK IN CAMP BRENOTT DRAIN
100 YR
CULVERT OUTLET NOT RESTRICTED BY FLOW OCCURING IN THE CAMP-BRENOTT DRAIN DOWNSTREAM OF RIVER ST.
DEERFIELD VILLAGE FIS
CAMP BRENOTT DRAIN
PRELIMINARY 10/8/79
A
B
C
D
E
F
G
H
I
J
K
L
M
0
500
1000
1500
2000
2500
3000
3500
STREAM DISTANCE

McNAMEE, PORTER & SEELEY — JOB HUD-FIA H-4705 — SHEET NO

CONSULTING ENGINEERS — COMMUNITY: Deerfield Village — FILE NO

ANN ARBOR MICHIGAN — WATERCOURSE: Camp - Brenett Drain — DATE

TABLE 1 - SECNO

Section Types	Description
1	Surveyed (See Remarks if Other Than MPS and/or Abrams)
2	Field Survey Section, partly modified for modelling
3	Synthetic - Repeat of nearby surveyed section with an invert adjustment (See Remarks)
4	Synthetic - Developed from topo, surveyed sections, or other information

SECTION NO. HUD	SECTION NO. Computer	SECTION TYPE	REMARKS
A	1.0	1	Valley Section 150' u/s River Raisin confluence
B	1.9	2	
C	1.98, 2.02	2	Dirt Lane bridge faces
D	2.1	2	
E	2.5	1	
F	3.0	2	Modified using USGS
	3.5	3	Repeat 3.0
G	4.0	2	50' d/s 7'φ culvert
H			D/s face 7'φ culvert - hand calculated hydraulics thru culvert
I	1.7	3	repeat 2.8 - invert field surveyed
J	2.3, 2.7	2	Railroad bridge faces
K	2.8	2	Valley
L	3.0		"
	3.5	3	repeat 3.0
M	4.0	2	valley

XKOR

Deerfield Canyon Breach Drain

48" ϕ culvert RCP

n = .020 (dirt in pipe)

L = 30 ft

Area = 12.6 ft² (no debris)

1' debris in pipe ⇒ $A_{effective}$ = .8(12.6) = 10 ft²

P = πD = 12.6 ft (no debris)

Assume same P ⇒ R = 10/12.6 = .80 ft

use K_e = 0.4 (headwall, wingwalls, square edge)

$K_f = 29(.020)^2(30)/(.80)^{4/3} = .47$

XKOR = 0.4 + 0.47 + 1 = 1.87

Deerfield

Butterfield
Jeffries
Shannon

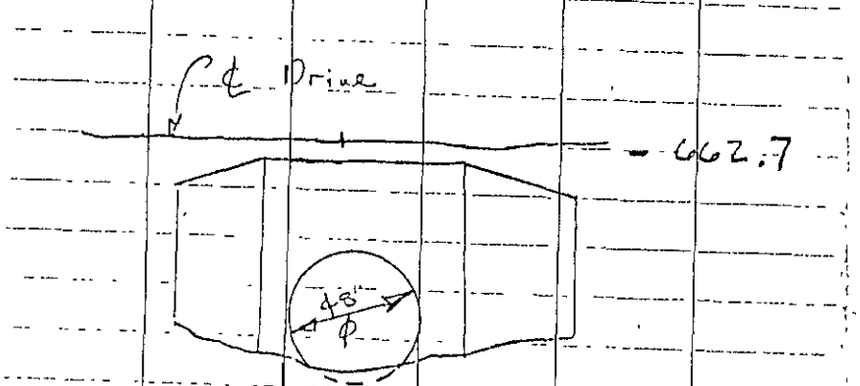
9-24-79

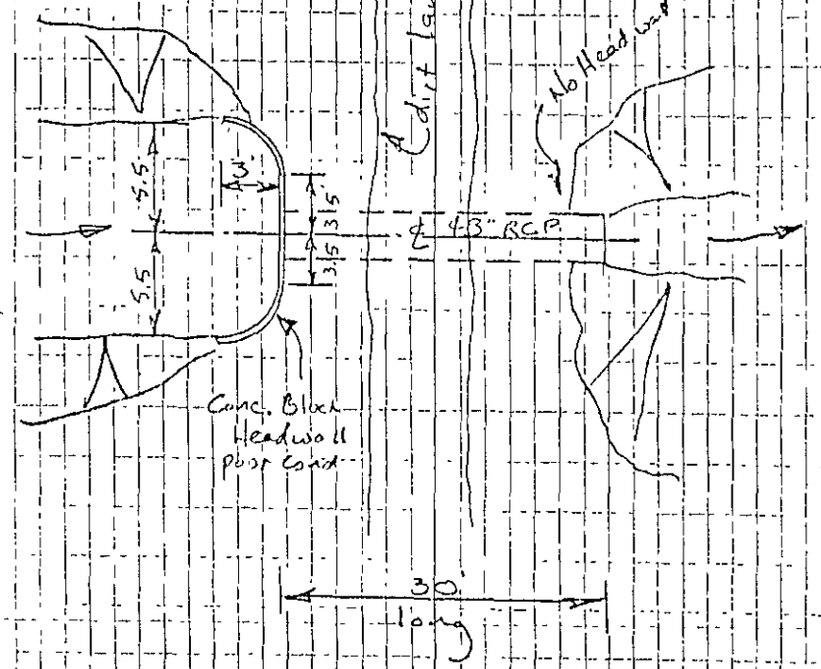
4.06.D

24

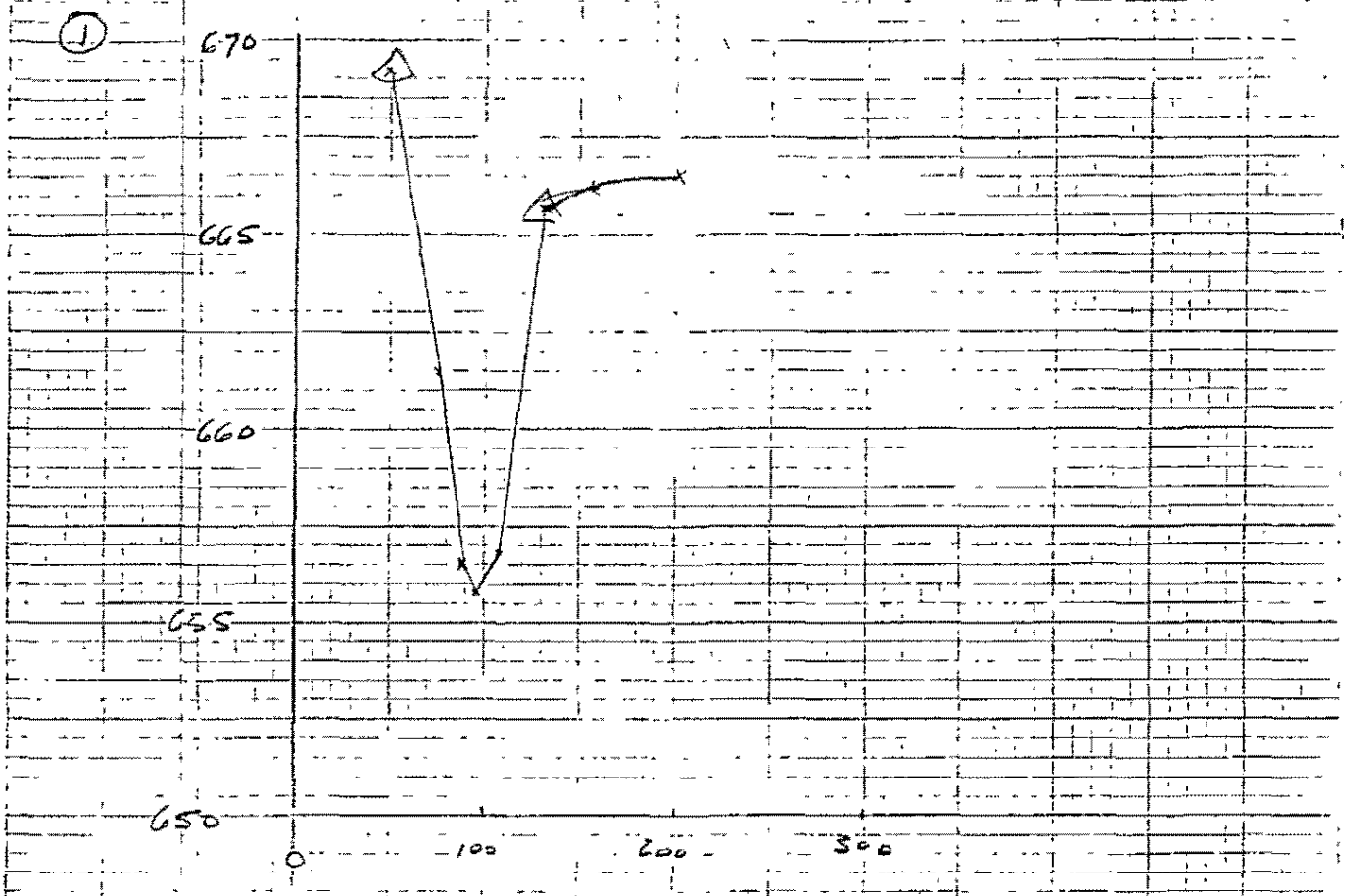
X-Section #20 Section 'C'

CAMP-BRENNOTT DRAIN





DEERFIELD

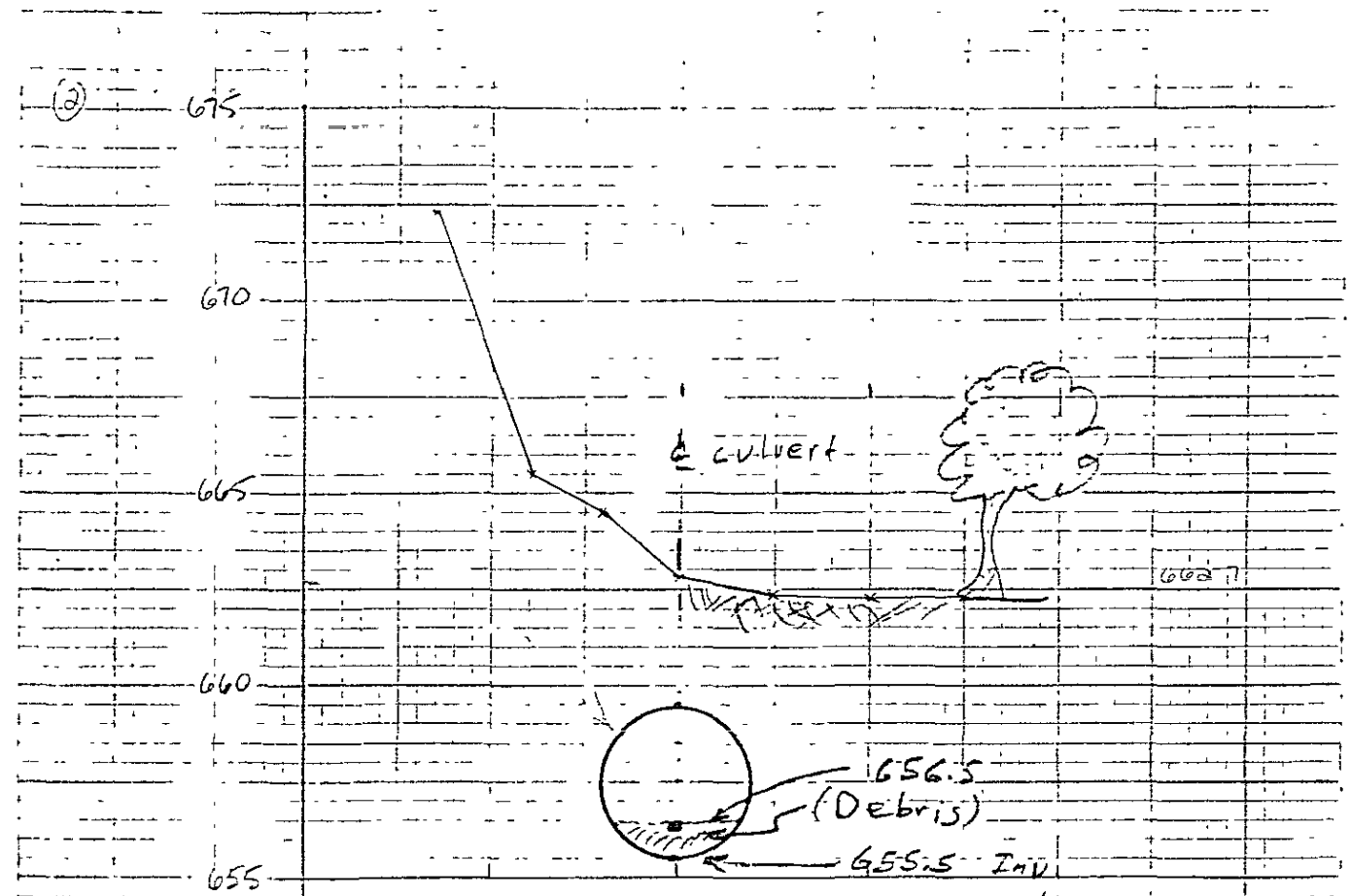


Section 1 Camp Brenott Drain

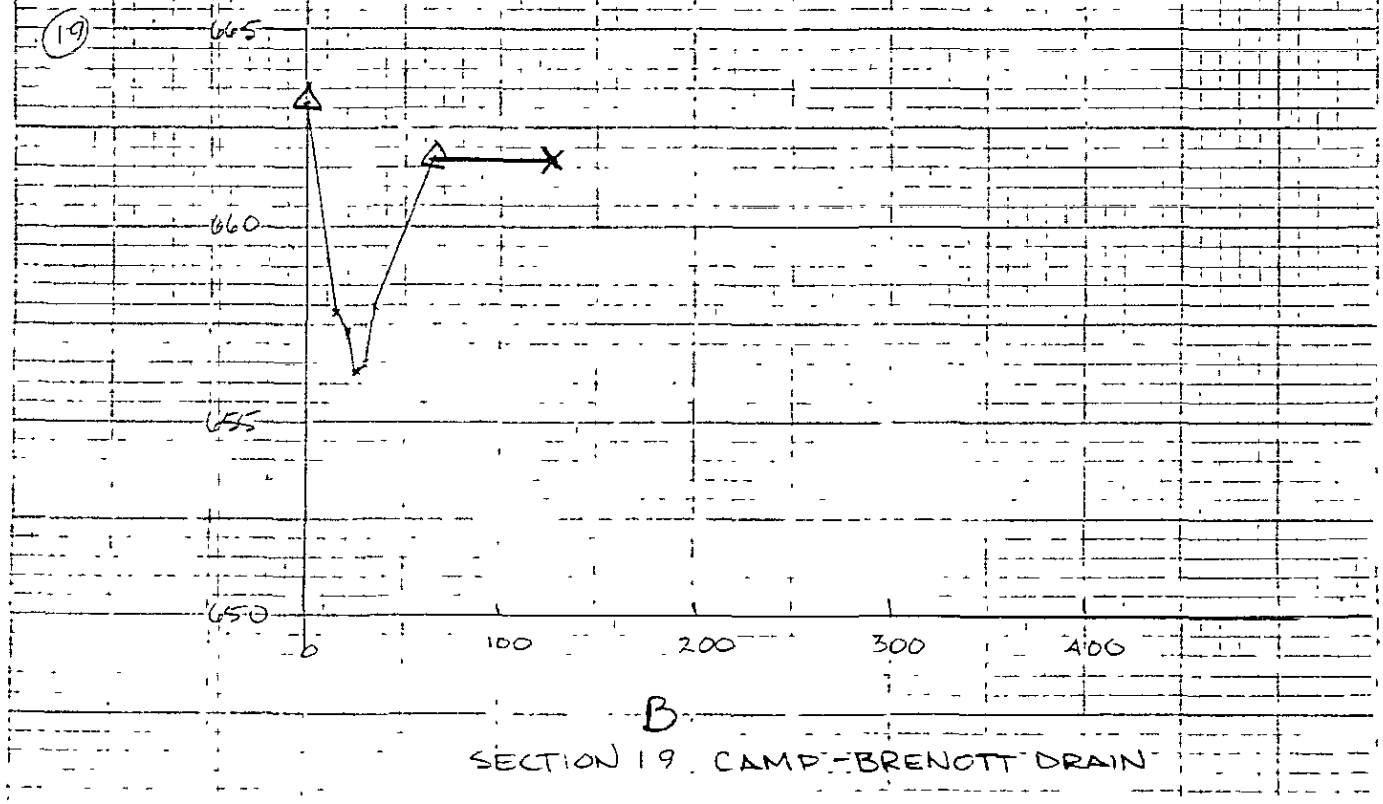
A

DEERFIELD

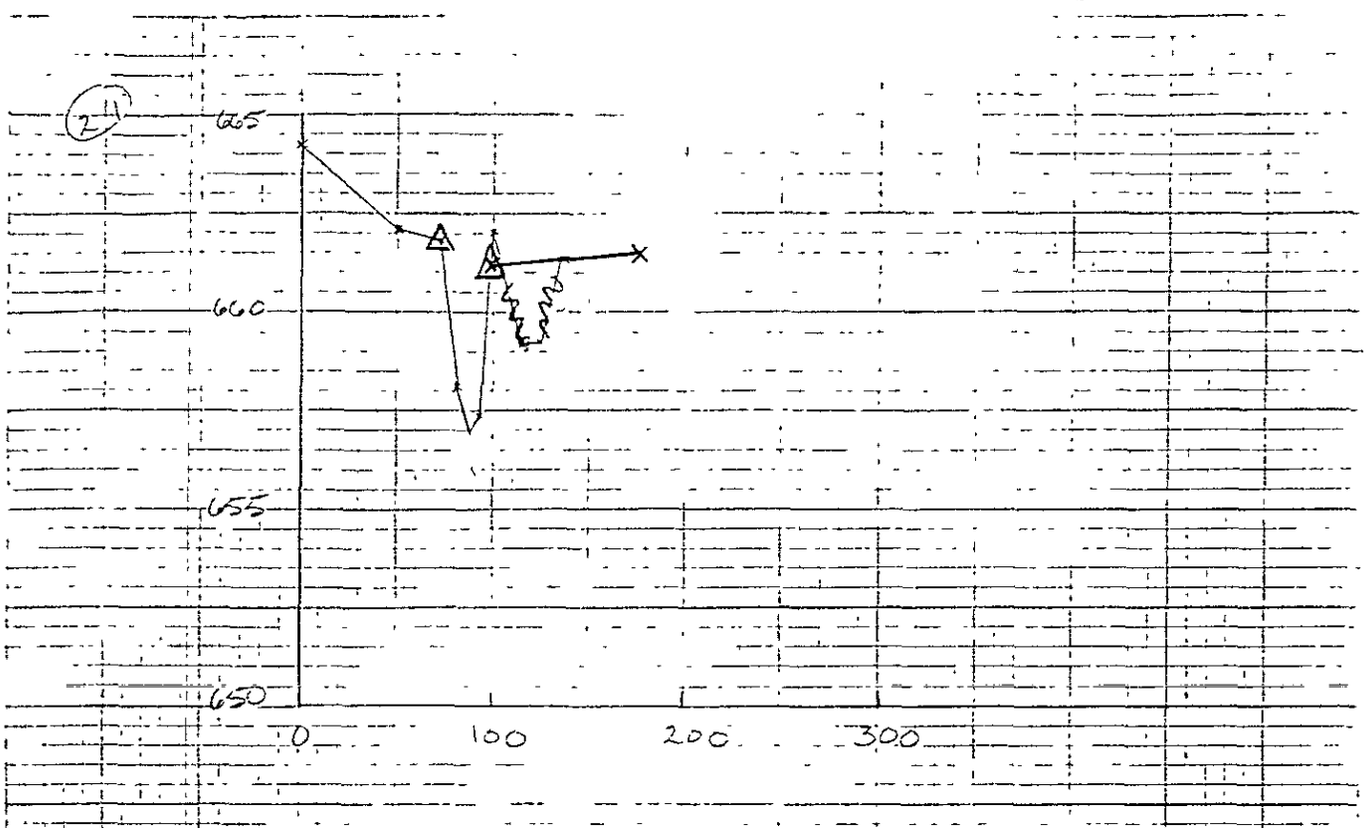
C-25



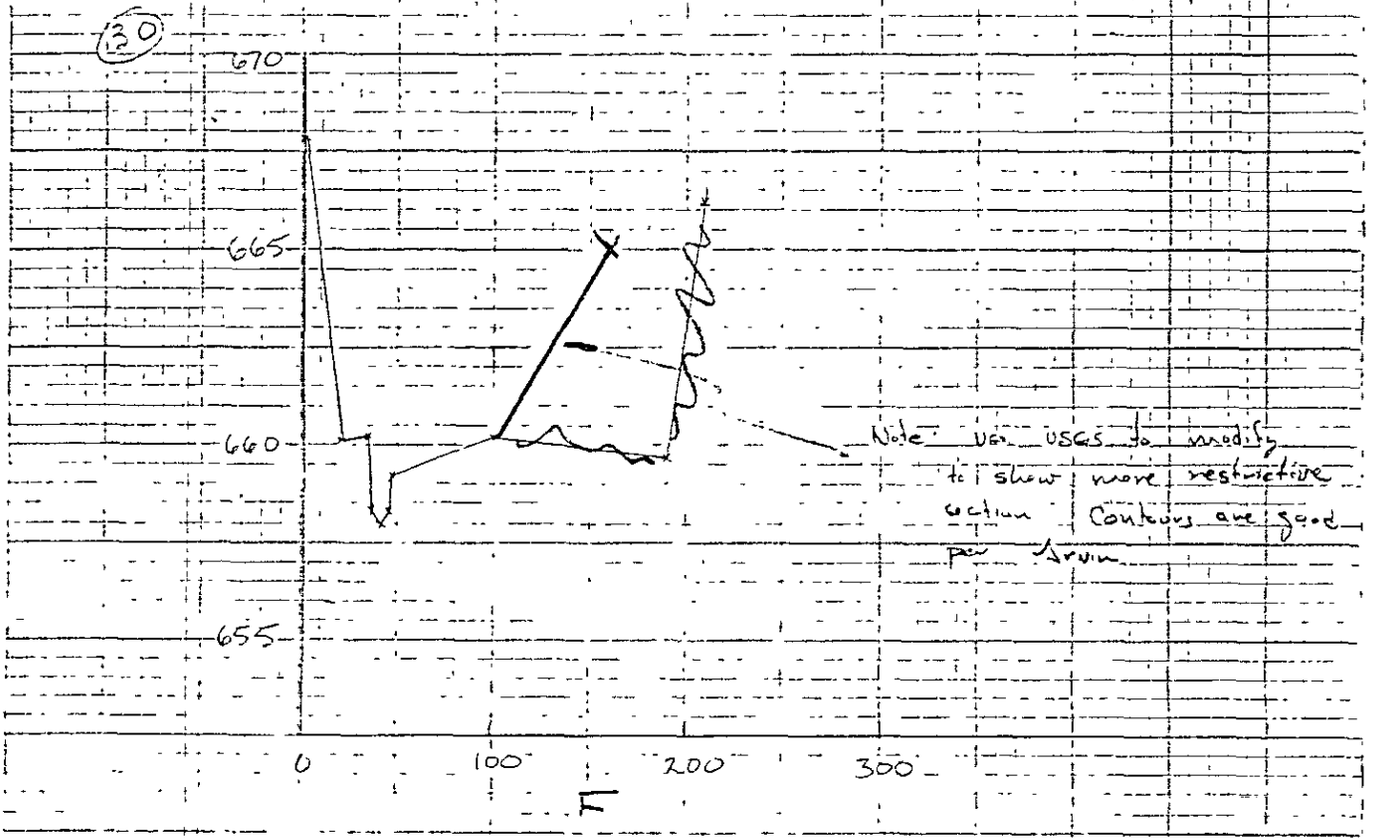
SECTION 2 CAMP-BRENOTT DRAIN



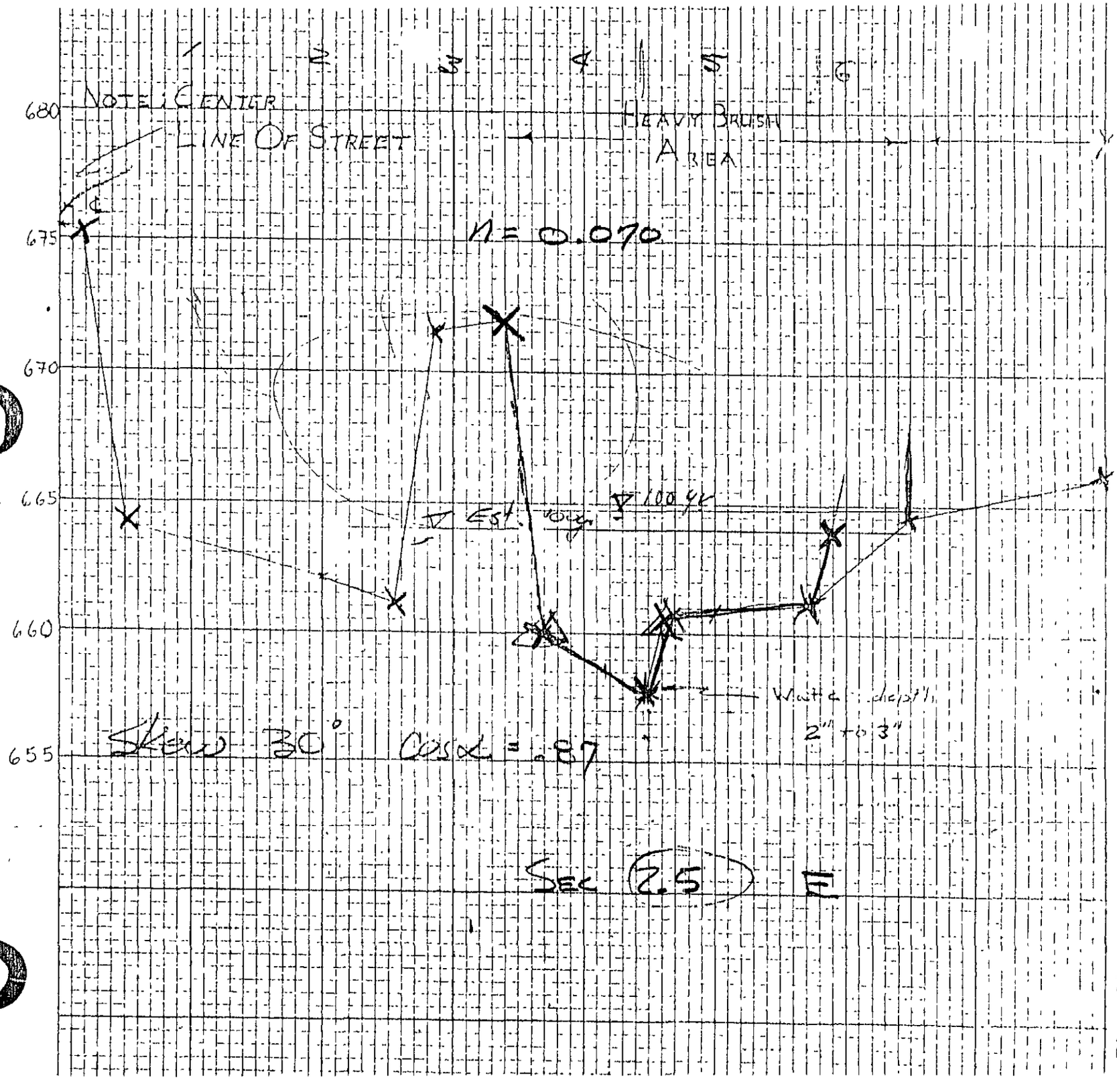
SECTION 19 CAMP-BRENOTT DRAIN



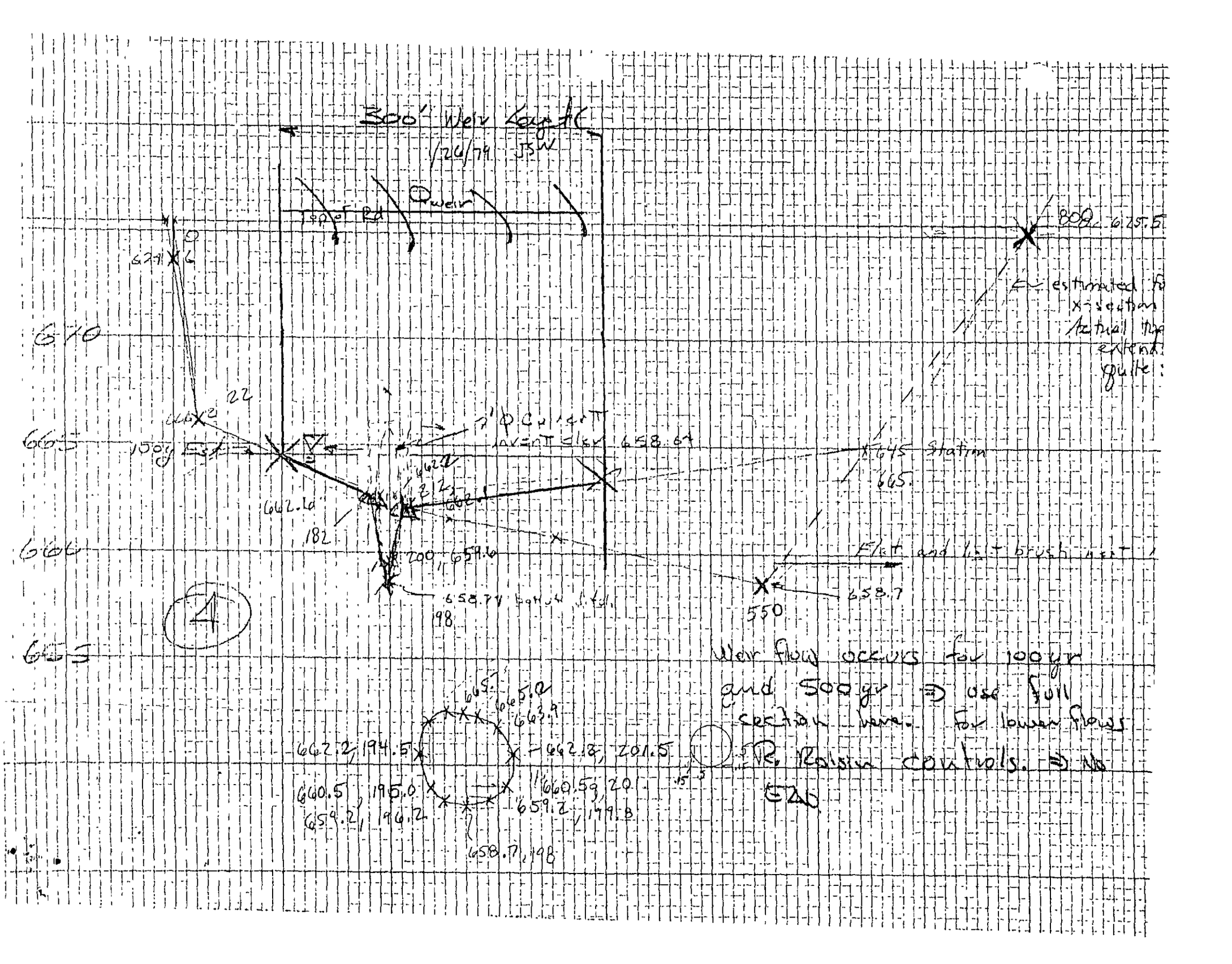
SECTION 2:1 CAMP-BRENOTT DRAIN



SECTION 3 CAMP-BRENOTT DRAIN



1
2
3
4
5
6
680
675
670
665
660
655
NOTE: CENTER LINE OF STREET
HEAVY BRUSH AREA
n = 0.070
Est. 100 yr
100 yr
Water depth 2" to 3"
Skew 30°
Cos α = .87
Sec 2.5 E


300' Weir Length
1/24/79 JTS
Qweir
Top of Rd
Q
627.4
22
660
650
Q Culvert
ΔV=ΔT=1ft
658.64
662.2
182
200
659.6
658.74
198
645 Station
665.
Flat and bit brush
658.7
550
800
645.5
estimated
x-section
Actual
extend
quite
660.5, 195.0
659.2, 196.2
658.7, 198
662.2, 194.5
663.9
662.2, 201.5
660.59, 201
659.2, 199.8
1
1.5
1.5
1.5

Approval Letter DNR

FLOOD INSURANCE STUDY HYDRAULIC REPORT

PROJECT: HUD-FIA-H-4705 DEERFIELD VILLAGE FIS, LENAWEE CO. MICH.

CONSULTING FIRM: McNamee, Porter and Seeley/Smith, Hinchman and Grylls

WATERCOURSE: ~~River Raisin~~

STUDY LIMITS: EASTERN LENAWEE COUNTY LINE (DOWNSTREAM LIMITS) TO SOUTHERN VILLAGE BOUNDARY (UPSTREAM LIMIT) ALONG THE NORTH BANK OF THE RIVER.

DATE OF AERIAL SURVEY: NOT APPLICABLE.

DATE OF LAND SURVEY: 11/9/78 - 11/27/78

McNAMEE, PORTER & SEELEY FIELD CREW.

SOURCE OF FLOWS: Discharges were computed by MP&S/SH&G and approved by MDNR on 1/24/79

TOPOGRAPHIC INFORMATION: USGS 5 FT topographic maps 1" = 400'

METHOD OF ANALYSIS: HEC2 water surface profile computer program

VARIABLES AND COEFFICIENTS:

Channel "n"	0.035 - 0.045
Overbank "n"	0.055 - 0.075
n values thru bridges	0.020
Contraction Coefficients	0.15 - 0.30
Expansion Coefficients	0.35 - 0.50

Bridge loss coefficients were chosen per References 1 and 2. See enclosed computation of XKOR.

PHOTOGRAPHS: Enclosed for your review, please return

CROSS-SECTIONS Cross-section plots enclosed, please return
See Table 1 for cross-section description.

REFERENCES:

1. "Hec-2 Water Surface Profiles", Users Manual, U.S. Army Corps of Engineers, Feb. 1972.
2. "Application of the Hec-2 Bridge Routines", U.S. Army Corps of Engineers, June 1974.
3. "Roughness Characteristics of Natural Channels", Barnes, Harry H. Jr., Geological Survey Water Supply Paper 1849.
4. "Floodway Determination using computer Program Hec-2", Bonner, Vernon R., U.S. Army Corps of Engineers Hec Training Document 5, May 1974.

HIGH WATER MARKS & CALIBRATION: See Table 2 for documentation of high water marks

The model was calibrated utilizing high water data from the April 1975 storm event. High water marks and the computed water surface profile for the calibration flow are shown on the enclosed profile.

A sensitivity analysis was also performed for the calibration flow by raising and lowering all Manning 'n' values by 30%.

Starting Conditions

Field information was obtained 2300 ft. downstream of the corporate limits of Deerfield Village in order to establish a good starting elevation at the corporate limits. The slope-area method was used to determine the starting elevation for flows other than the calibration flow, utilizing the same value of slope established for the calibration flow.

Designated Floodway

Encroachment method 4 in the HEC-2 program was used to determine encroachment stations based on an allowable surcharge of 0.1 ft. At field surveyed sections the designated floodway was established using the computer determined encroachment stations. Between field surveyed sections, the available topographic information was used to complete the floodway delineation. (See the enclosed 1" = 400' topographic map for floodway and 100 yr. natural flood plain delineation). It should be noted that the area west of Bucholtz Rd. bridge and south of the confluence with the Camp Brenott Drain @ Roughet Rd. may be encroached upon without causing a 0.1 ft. rise in the water surface elevation of the River Raisin. However, indiscriminent filling of this area could restrict the outlet of the Camp Brenott Drain and adversely affect stages upstream.

Computer Outputs

Enclosed are complete computer outputs for (i) 100 year natural and 100 yr designated floodway, (ii) 10, 50 and 500 yr flood profiles and (iii) calibration flow and sensitivity analysis for your review.

Comments

The 100-yr floodway has been delineated south of the river to aid in the hydraulic review. Since this area is not within the corporate limits, and therefore not part of submittal to HUD, the 100 yr. natural floodplain outside the corporate limits was not delineated.

```
M4(1:19)        SECNO TABLE                TABLE 1
1       C
2       C     20                        RIVER RAISIN
3       C     0.9        SYNTHETIC SECTION DEVELOPED FROM 5 FT TOPO AND SEC. 1
4       C     1.0        FIELD SURVEYED VALLEY SECTION
5       C     2.0        FIELD SURVEYED VALLEY SECTION
6       C     2.5        SYNTHETIC SECTION DEVELOPED FROM 2 AND 3
6.5     C     2.5        SPRING 1975 HIGH WATER=668.6
7       C     3.0        FIELD SURVEYED VALLEY SECTION
8       C     4.2        100 FT. D\S BUCHOLTZ RD. - FIELD SURVEYED, EXTENDED USING ROAD PROFILE
9       C     4.3        D\S FACE BUCHOLTZ RD. - SYNTHETIC
0       C     4.7        U\S FACE BUCHOLTZ RD. - REPEAT OF 4.3
0.5     C     4.7        SPRING 1975 HIGH WATER=670.6
1       C     4.8        50 FT U\S BUCHOLTZ RD. - FIELD SURVEYED, EXTENDED USING ROAD PROFILE
2       C     4.9        SYNTHETIC VALLEY SECTION, DEVELOPED FROM 5 FT. TOPO AND SEC. 5
3       C     5.0        FIELD SURVEYED VALLEY SECTION EXTENDED USING 5 FT. TOPO
4       C     5.3        FIELD SURVEYED VALLEY SECTION MODIFIED USING 5 FT. TOPO
5       C     5.8        SYNTHETIC SECTION DEVELOPED FROM 5 FT. TOPO AND SECTIONS 5.3 AND 6
6       C     6.0        FIELD SURVEYED VALLEY SECTION
7       C     7.0        SYNTHETIC VALLEY SECTION DEVELOPED FROM 5 FT. TOPO AND SECTIONS 6 AND 8
7.5     C     7.0        SPRING 1975 HIGH WATER=672.2
8       C     8.0        FIELD SURVEYED VALLEY SECTION
        C     9.0        SYNTHETIC VALLEY SECTION DEVELOPED FROM 5 FT. TOPO AND SECTION 8
FILE
```

JOB: HUD - IIA H-4705

COMMUNITY: DEERFIELD VILLAGE

WATERCOURSE: RIVER RAISIN

DATE OF STORM: APRIL 20, 1975

PEAK DISCHARGE: 7400 CFS Determined by interpolating peak discharges recorded at the USGS gages at Adrian (upstream) and Monroe (downstream).

TABLE 2: HIGHWATER MARK DOCUMENTATION

NUMBER	LOCATION	SOURCE	OBSERVED ELEVATION	COMPUTED ELEVATION	OBSERVED MINUS COMPUTED	REMARKS
1	Near Section 2.5	phone conversation with WWTP* 2/6/79	668.6	669.1	-0.5	GOOD
2	Buchholtz Rd. Bridge (Section 4.7)	phone conversation with WTP** on 2/2/79	670.6(±)	669.8	+0.8(±)	FAIR
3	Near Section 7	Phone Conversation with WTP** on 2/6/79	672.2	671.1	+1.1	GOOD

* Wastewater Treatment Plant

** Water Treatment Plant

HUD - FIA - H-4705

DEERFIELD VILLAGE, FIS

COMPUTED BY MPG DATE 6/19/79

XKOR Computation

Watercourse: River Raisin

Bridge: Bucholtz Rd.

Note: Pressure flow will not occur due the bridge being perched, i.e. the low chord elevation (673.6) is above the minimum top of road elevation (671.5).

∴ The program will not use XKOR.

A value of 1.33 has been used as input.

JOB: HUD - FIA H-4705

COMMUNITY: DEERFIELD VILLAGE

WATERCOURSE: RIVER RAISIN

DATE OF STORM: APRIL 20, 1975

PEAK DISCHARGE: 7400 CFS Determined by interpolating peak discharges recorded at the USGS gages at Adrian (upstream) and Monroe (downstream).

TABLE 2: HIGHWATER MARK DOCUMENTATION

NUMBER	LOCATION	SOURCE	OBSERVED ELEVATION	COMPUTED ELEVATION	OBSERVED MINUS COMPUTED	REMARKS
1	NEAR SECTION 2.5	phone conversation with WWTP* 2/6/79	668.6	~~668.1~~ 668.6	~~-0.5~~ 0.0	GOOD
2	Bucholtz Rd Bridge (Section 4.7)	phone conversation with WTP** on 2/2/79	670.6(±)	~~669.8~~ 670.0	~~+0.8(±)~~ +0.6(±)	FAIR
3	Near Section 17	Phone Conversation with WTP** on 2/6/79	672.2	~~671.1~~ 672.2	~~+1.1~~ 0.0	GOOD

REVISED PER DNR COMMENTS REC'D 8/30/79

* Wastewater Treatment Plant

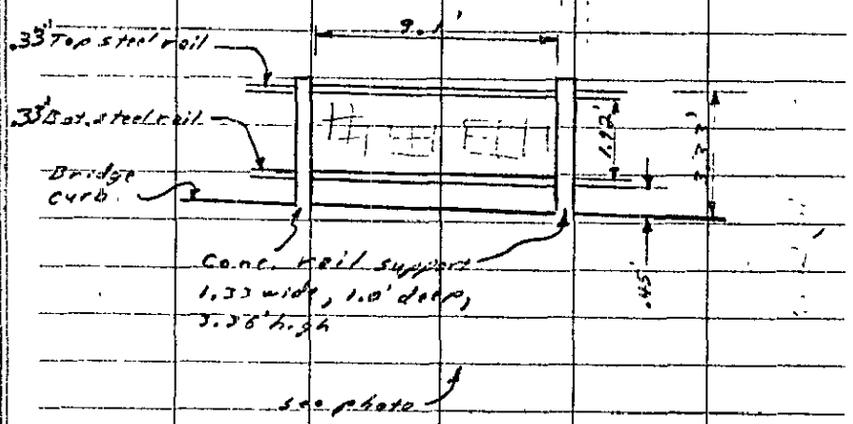
** Water Treatment Plant

RECEIVED

OCT 05 1979

WATER MANAGEMENT

Bridge rail section - 17 thers on each side



Roll #1

Photo #

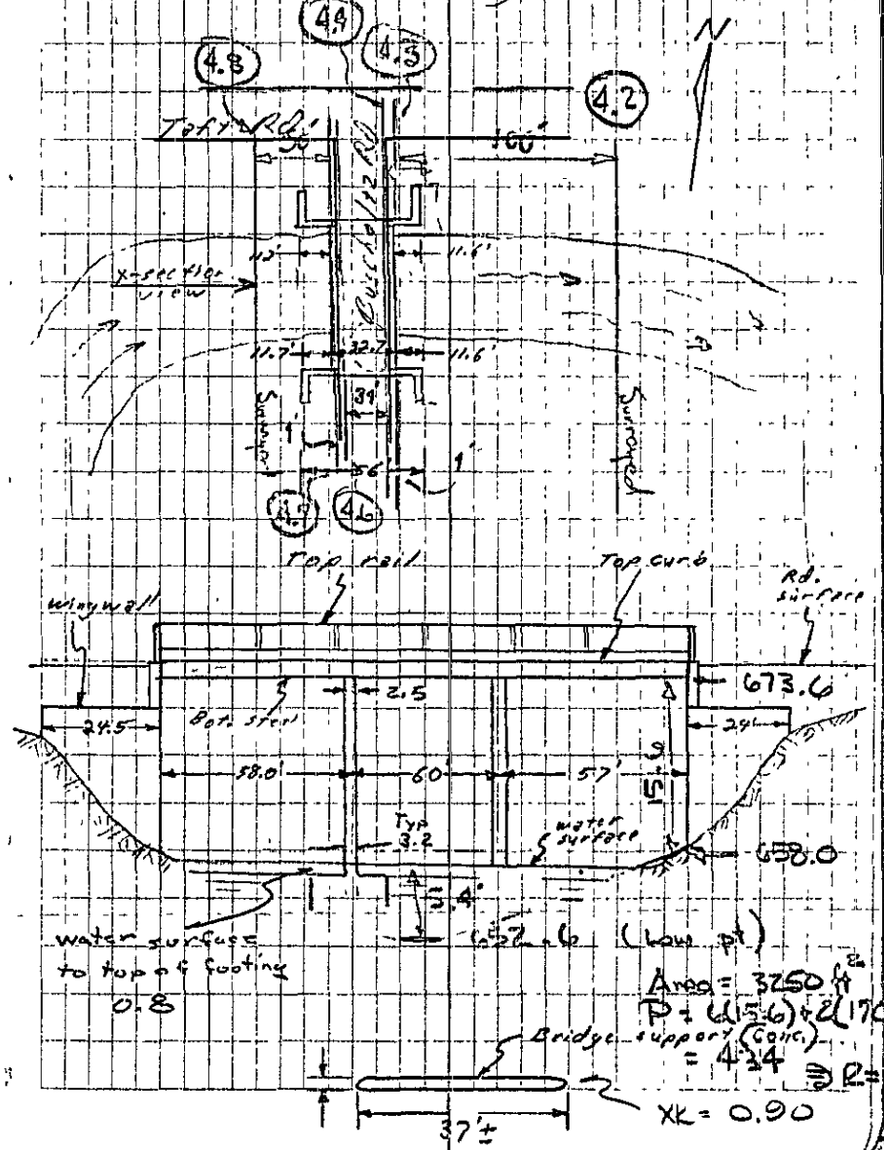
12 Looking downstream at bridge
13 " " " " "
14 Looking upstream from bridge
15 Looking downstream " "
16 Gaurd rail
17 Bridge deck

RECEIVED
OCT 09 19
WAIL...

406-D/5

D. Cain

Bridge over Raisin River @ Buscholtz Rd. Looking downstream



Area = 3250 ft²
P = 6(15.6) + 2(170)
= 434 ⇒ R = 7.5



1) COUNTY: LENAWEE

2) STUDY NAME: DEERFIELD, VILLAGE OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: SUMMARYS, D.S. & U.S. BUSCHHOLTZ Rd.



****
HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
ERROR CORR - 01
MODIFICATION - 50,51,52
****

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

RIVER RAISIN CALIBRATION DS BUSCHOLTZ Rd

SUMMARY PRINTOUT TABLE 150

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
CALIB —	2.000	0.00	0.00	0.00	651.50	7400.00	668.03	0.00	668.31	9.54	4.23	1747.36	2395.50
10 YR —	2.000	0.00	0.00	0.00	651.50	6300.00	666.85	0.00	667.10	9.55	4.00	1574.54	2038.92
50 YR —	2.000	0.00	0.00	0.00	651.50	8200.00	668.87	0.00	669.17	9.48	4.38	1871.94	2663.67
100 YR —	2.000	0.00	0.00	0.00	651.50	9000.00	669.64	0.00	669.96	9.51	4.53	1986.89	2918.94
	2.500	700.00	0.00	0.00	651.30	7400.00	668.60	0.00	668.80	5.35	3.58	2066.82	3198.91
	2.500	700.00	0.00	0.00	651.30	6300.00	667.40	0.00	667.57	5.09	3.32	1899.14	2793.55
	2.500	700.00	0.00	0.00	651.30	8200.00	669.45	0.00	669.66	5.49	3.75	2185.23	3499.79
	2.500	700.00	0.00	0.00	651.30	9000.00	670.22	0.00	670.46	5.66	3.92	2293.84	3783.99
	3.000	1200.00	0.00	0.00	651.00	7400.00	669.22	0.00	669.41	4.84	3.46	2137.67	3364.85
	3.000	1200.00	0.00	0.00	651.00	6300.00	667.99	0.00	668.15	4.60	3.21	1965.39	2937.61
	3.000	1200.00	0.00	0.00	651.00	8200.00	670.09	0.00	670.29	4.97	3.63	2258.55	3676.69
	3.000	1200.00	0.00	0.00	651.00	9000.00	670.88	0.00	671.11	5.13	3.80	2370.05	3972.82
	4.200	800.00	0.00	0.00	653.40	7400.00	669.70	0.00	669.94	7.62	3.87	1911.35	2681.20
	4.200	800.00	0.00	0.00	653.40	6300.00	668.46	0.00	668.66	7.58	3.65	1727.24	2288.48
	4.200	800.00	0.00	0.00	653.40	8200.00	670.57	0.00	670.82	7.62	4.02	2041.75	2971.48
	4.200	800.00	0.00	0.00	653.40	9000.00	671.38	0.00	671.65	7.66	4.16	2163.66	3251.51
	4.300	100.00	0.00	0.00	653.20	7400.00	669.93	0.00	670.04	3.13	2.73	2712.49	4183.43
	4.300	100.00	0.00	0.00	653.20	6300.00	668.66	0.00	668.76	2.96	2.53	2491.93	3663.02
	4.300	100.00	0.00	0.00	653.20	8200.00	670.81	0.00	670.93	3.23	2.86	2866.58	4560.07
	4.300	100.00	0.00	0.00	653.20	9000.00	671.62	0.00	671.76	3.35	2.99	3009.47	4918.53
	4.700	33.00	672.30	673.60	653.20	7400.00	669.93	0.00	670.05	3.13	2.73	2713.53	4185.95
	4.700	33.00	672.30	673.60	653.20	6300.00	668.67	0.00	668.77	2.95	2.53	2492.82	3665.07
	4.700	33.00	672.30	673.60	653.20	8200.00	670.81	0.00	670.94	3.23	2.86	2867.73	4562.92
	4.700	33.00	672.30	673.60	653.20	9000.00	671.63	0.00	671.77	3.34	2.99	3010.74	4921.74
*	4.710	1.00	0.00	0.00	653.20	7400.00	669.98	0.00	670.10	3.09	2.72	2722.28	4207.04
*	4.710	1.00	0.00	0.00	653.20	6300.00	668.72	0.00	668.82	2.92	2.52	2501.56	3685.27
*	4.710	1.00	0.00	0.00	653.20	8200.00	670.88	0.00	671.01	3.19	2.85	2879.97	4593.30
*	4.710	1.00	0.00	0.00	653.20	9000.00	671.70	0.00	671.84	3.30	2.98	3022.98	4952.86
	4.800	50.00	0.00	0.00	653.50	7400.00	670.00	0.00	670.11	3.53	2.66	2777.24	3938.55
	4.800	50.00	0.00	0.00	653.50	6300.00	668.74	0.00	668.83	3.64	2.53	2494.31	3301.35
	4.800	50.00	0.00	0.00	653.50	8200.00	670.91	0.00	671.03	3.44	2.75	2980.78	4422.72
	4.800	50.00	0.00	0.00	653.50	9000.00	671.74	0.00	671.86	3.40	2.84	3164.62	4877.90

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

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

RIVER RAISIN CALIBRATION                    U.S. Buscholtz Rd.

SUMMARY PRINTOUT TABLE  150
```

	SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
Calib —	4.800	0.00	0.00	0.00	653.50	7400.00	670.00	0.00	670.11	4.11	2.66	2777.92	3648.27
10 yr —	4.800	0.00	0.00	0.00	653.50	6300.00	668.74	0.00	668.84	4.24	2.52	2495.68	3059.57
50 yr —	4.800	0.00	0.00	0.00	653.50	8200.00	670.90	0.00	671.02	4.02	2.75	2979.52	4092.29
500 yr —	4.800	0.00	0.00	0.00	653.50	10600.00	672.80	0.00	672.87	2.67	2.44	6585.33	6482.00
100 yr —	4.800	0.00	0.00	0.00	653.50	9000.00	671.74	0.00	671.87	3.96	2.84	3167.68	4523.73
100 yr —	4.800	0.00	0.00	0.00	653.50	9000.00	671.74	0.00	671.87	3.96	2.84	3167.68	4523.73
	4.900	300.00	0.00	0.00	652.10	7400.00	670.16	0.00	670.21	2.21	1.90	4486.52	4976.83
	4.900	300.00	0.00	0.00	652.10	6300.00	668.89	0.00	668.94	2.36	1.83	3888.62	4104.47
	4.900	300.00	0.00	0.00	652.10	8200.00	671.06	0.00	671.11	2.11	1.94	4921.44	5646.69
	4.900	300.00	0.00	0.00	652.10	10600.00	672.88	0.00	672.95	2.21	2.15	5826.71	7125.77
	4.900	300.00	0.00	0.00	652.10	9000.00	671.91	0.00	671.96	2.03	1.98	5336.23	6310.84
	4.900	300.00	0.00	0.00	652.10	9000.00	671.91	0.00	671.96	2.03	1.98	5336.23	6310.84
	5.000	1100.00	0.00	0.00	652.50	7400.00	670.45	0.00	670.50	3.83	2.24	5729.29	3778.78
	5.000	1100.00	0.00	0.00	652.50	6300.00	669.22	0.00	669.30	5.23	2.51	4347.18	2756.07
	5.000	1100.00	0.00	0.00	652.50	8200.00	671.33	0.00	671.37	3.15	2.08	6712.16	4619.49
	5.000	1100.00	0.00	0.00	652.50	10600.00	673.14	0.00	673.18	2.47	2.01	8762.19	6745.76
	5.000	1100.00	0.00	0.00	652.50	9000.00	672.15	0.00	672.19	2.64	1.98	7645.60	5536.51
	5.000	1100.00	0.00	0.00	652.50	9000.00	672.15	0.00	672.19	2.64	1.98	7645.60	5536.51
	5.300	2100.00	0.00	0.00	652.00	7400.00	670.99	0.00	671.01	2.39	1.70	11513.41	4784.34
	5.300	2100.00	0.00	0.00	652.00	6300.00	670.00	0.00	670.03	3.26	1.88	8920.51	3490.57
	5.300	2100.00	0.00	0.00	652.00	8200.00	671.76	0.00	671.78	1.93	1.59	13491.78	5905.01
	5.300	2100.00	0.00	0.00	652.00	10600.00	673.47	0.00	673.48	1.45	1.50	17924.14	8802.01
	5.300	2100.00	0.00	0.00	652.00	9000.00	672.51	0.00	672.53	1.60	1.51	15438.95	7113.97
	5.300	2100.00	0.00	0.00	652.00	9000.00	672.51	0.00	672.53	1.60	1.51	15438.95	7113.97
	5.800	2500.00	0.00	0.00	651.30	7400.00	671.54	0.00	671.60	3.00	2.42	8117.13	4271.03
	5.800	2500.00	0.00	0.00	651.30	6300.00	670.70	0.00	670.77	3.32	2.46	6580.40	3458.69
	5.800	2500.00	0.00	0.00	651.30	8200.00	672.22	0.00	672.27	2.68	2.35	9360.71	5007.00
	5.800	2500.00	0.00	0.00	651.30	10600.00	673.82	0.00	673.86	2.28	2.30	12332.28	7023.98
	5.800	2500.00	0.00	0.00	651.30	9000.00	672.90	0.00	672.94	2.39	2.28	10616.06	5816.29
	5.800	2500.00	0.00	0.00	651.30	9000.00	672.90	0.00	672.94	2.39	2.28	10616.06	5816.29

SECND	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
6.000	1000.00	0.00	0.00	651.00	7400.00	671.85	0.00	671.90	4.14	2.43	7368.85	3636.10
6.000	1000.00	0.00	0.00	651.00	6300.00	671.05	0.00	671.11	4.40	2.41	6220.54	3004.39
6.000	1000.00	0.00	0.00	651.00	8200.00	672.49	0.00	672.54	3.82	2.40	8296.18	4197.22
6.000	1000.00	0.00	0.00	651.00	10600.00	674.04	0.00	674.09	3.40	2.42	10574.55	5750.30
6.000	1000.00	0.00	0.00	651.00	9000.00	673.14	0.00	673.18	3.50	2.37	9240.24	4811.81
6.000	1000.00	0.00	0.00	651.00	9000.00	673.14	0.00	673.18	3.50	2.37	9240.24	4811.81
7.000	1200.00	0.00	0.00	651.40	7400.00	672.18	0.00	672.23	2.42	2.04	7395.65	4756.14
7.000	1200.00	0.00	0.00	651.40	6300.00	671.40	0.00	671.44	2.39	1.96	6430.21	4071.50
7.000	1200.00	0.00	0.00	651.40	8200.00	672.80	0.00	672.84	2.36	2.08	8158.10	5335.34
7.000	1200.00	0.00	0.00	651.40	10600.00	674.32	0.00	674.37	2.35	2.21	10059.36	6917.84
7.000	1200.00	0.00	0.00	651.40	9000.00	673.42	0.00	673.46	2.28	2.10	8933.37	5957.45
7.000	1200.00	0.00	0.00	651.40	9000.00	673.42	0.00	673.46	2.28	2.10	8933.37	5957.45
8.000	1200.00	0.00	0.00	651.70	7400.00	672.46	0.00	672.49	2.08	1.84	7756.42	5136.16
8.000	1200.00	0.00	0.00	651.70	6300.00	671.68	0.00	671.71	2.09	1.78	6634.44	4357.09
8.000	1200.00	0.00	0.00	651.70	8200.00	673.07	0.00	673.10	2.00	1.85	8634.57	5794.02
8.000	1200.00	0.00	0.00	651.70	10600.00	674.59	0.00	674.62	1.93	1.93	10853.76	7627.99
8.000	1200.00	0.00	0.00	651.70	9000.00	673.68	0.00	673.71	1.92	1.86	9525.77	6502.04
8.000	1200.00	0.00	0.00	651.70	9000.00	673.68	0.00	673.71	1.92	1.86	9525.77	6502.04
9.000	1600.00	0.00	0.00	652.00	7400.00	672.69	0.00	672.72	1.59	1.76	8089.76	5868.25
9.000	1600.00	0.00	0.00	652.00	6300.00	671.92	0.00	671.94	1.53	1.67	7273.16	5085.88
9.000	1600.00	0.00	0.00	652.00	8200.00	673.29	0.00	673.32	1.59	1.80	8722.26	6506.13
9.000	1600.00	0.00	0.00	652.00	10600.00	674.80	0.00	674.83	1.65	1.95	10332.16	8247.02
9.000	1600.00	0.00	0.00	652.00	9000.00	673.90	0.00	673.92	1.57	1.83	9363.27	7179.67
9.000	1600.00	0.00	0.00	652.00	9000.00	673.90	0.00	673.92	1.57	1.83	9363.27	7179.67

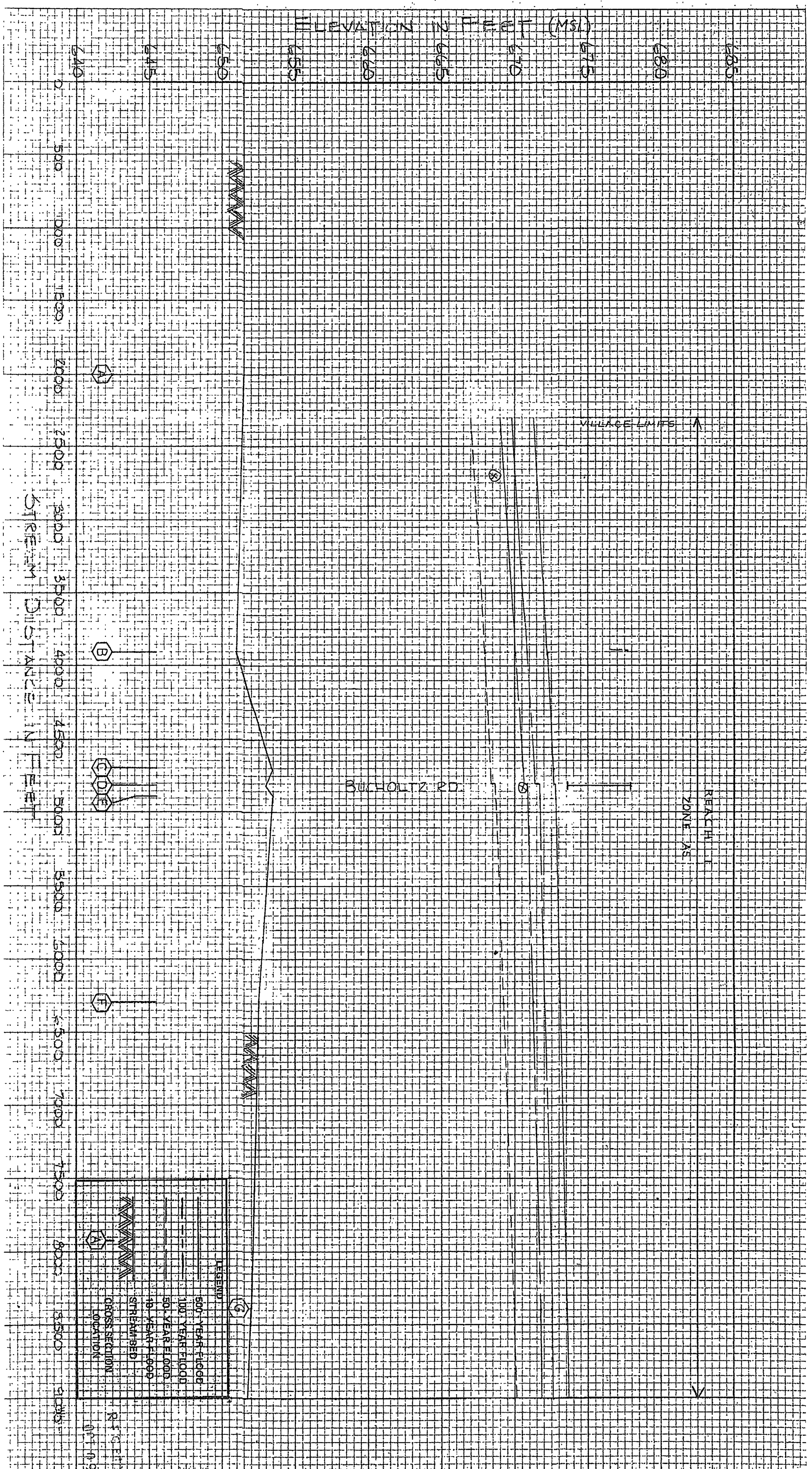


EXHIBIT 1

OIP

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

DEERFIELD VILLAGE, MI
(LENAWEE CO)

FLOOD PROFILES

RIVER RAISIN

REACH 1

ZONE A35

VILLAGE LIMITS

ELEVATION IN FEET (MSL)

695
690
675
670
665
660
655
650
645
640

9000 9500 15000 16500 1000 1500 2000 17500 3000 3500 14000 14500 6000 15500 16000 16500 1000 17500 18000

STREAM DISTANCE IN FEET

LEGEND

500-YEAR FLOOD

100-YEAR FLOOD

50-YEAR FLOOD

10-YEAR FLOOD

STREAM BED

CROSS SECTION LOCATION

FLOOD PROFILES

RIVER RAISIN

DEERFIELD VILLAGE (MI)

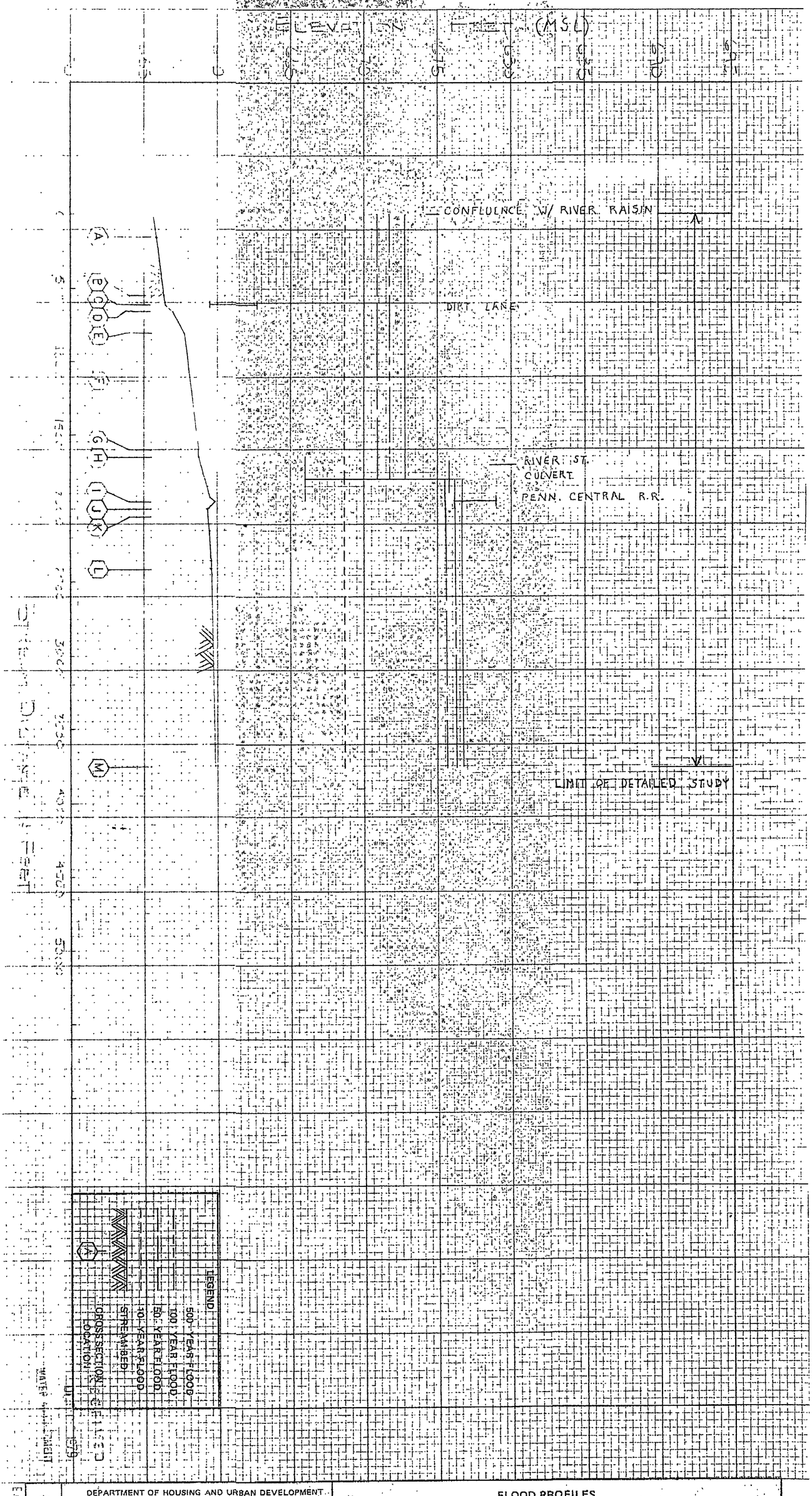
(LENAWEE Co.)

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

02P

EXHIBIT

PRINTED IN U.S.A.

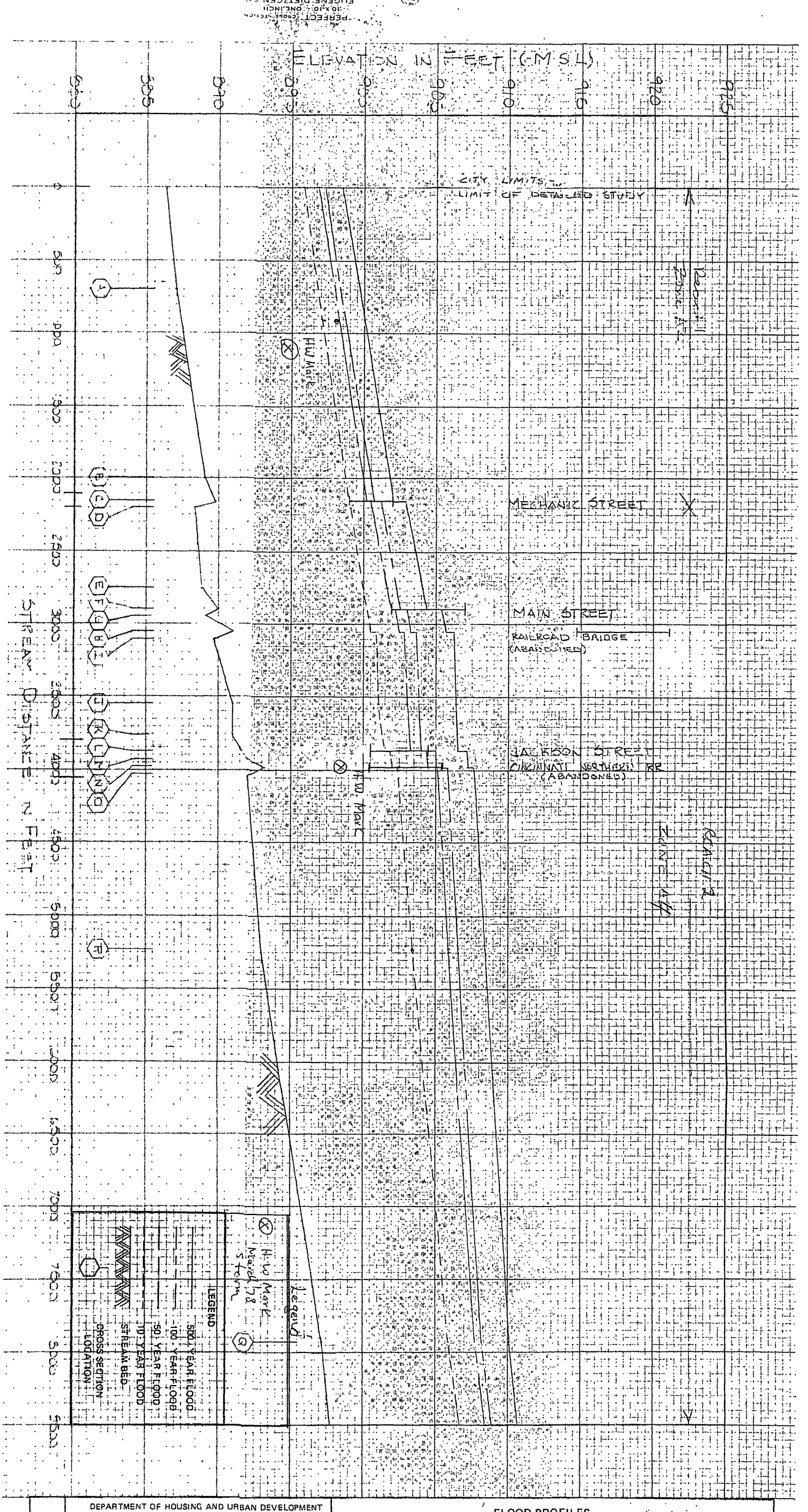


DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration
OAKFIELD VILLAGE, MI
(LENAWEE CO.)

FLOOD PROFILES

CAMP-BRENOTT DRAIN

03P



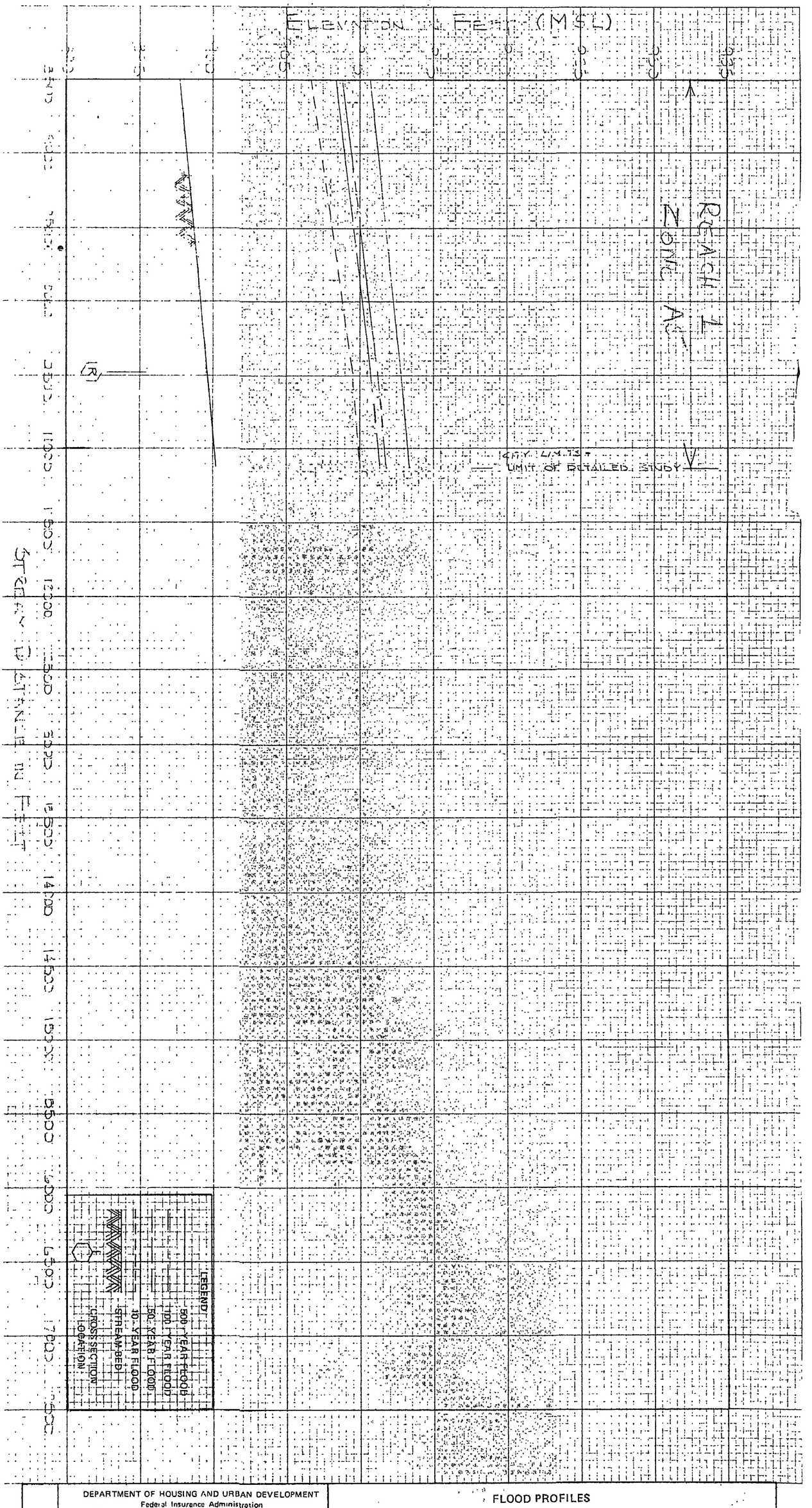
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration

CITY OF HUDSON, MI
(LENAWEE Co)

FLOOD PROFILES

BEAN CREEK

PRINTED IN U.S.A.



DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
Federal Insurance Administration
CITY OF HUDSON, MI
(LENAWEE Co)

FLOOD PROFILES

BEAN CREEK

W CADMUS RD

CEM

US 127

This floodway area is being revised

AVE

GROVE

MAPLE

TAFFIN ST

JACKSON ST

WILCOX ST

McCELLAN ST

RAILROAD ST

WEST ST

MAIN ST

STATE ST

HWY

MUNSON

DIVISION ST

CINCINNATI NORTHERN (ABANDONED)

MICHIGAN ST

BEAR CR

CHURCH ST

FOSTER HWY

NELSON RD

293-1 931.34

293-2 909.99

293-3 905.76

293-5 905.31

293-6 905.31

293-7 924.32

293-8 923.35

293-9 929.43

295-6 891.73

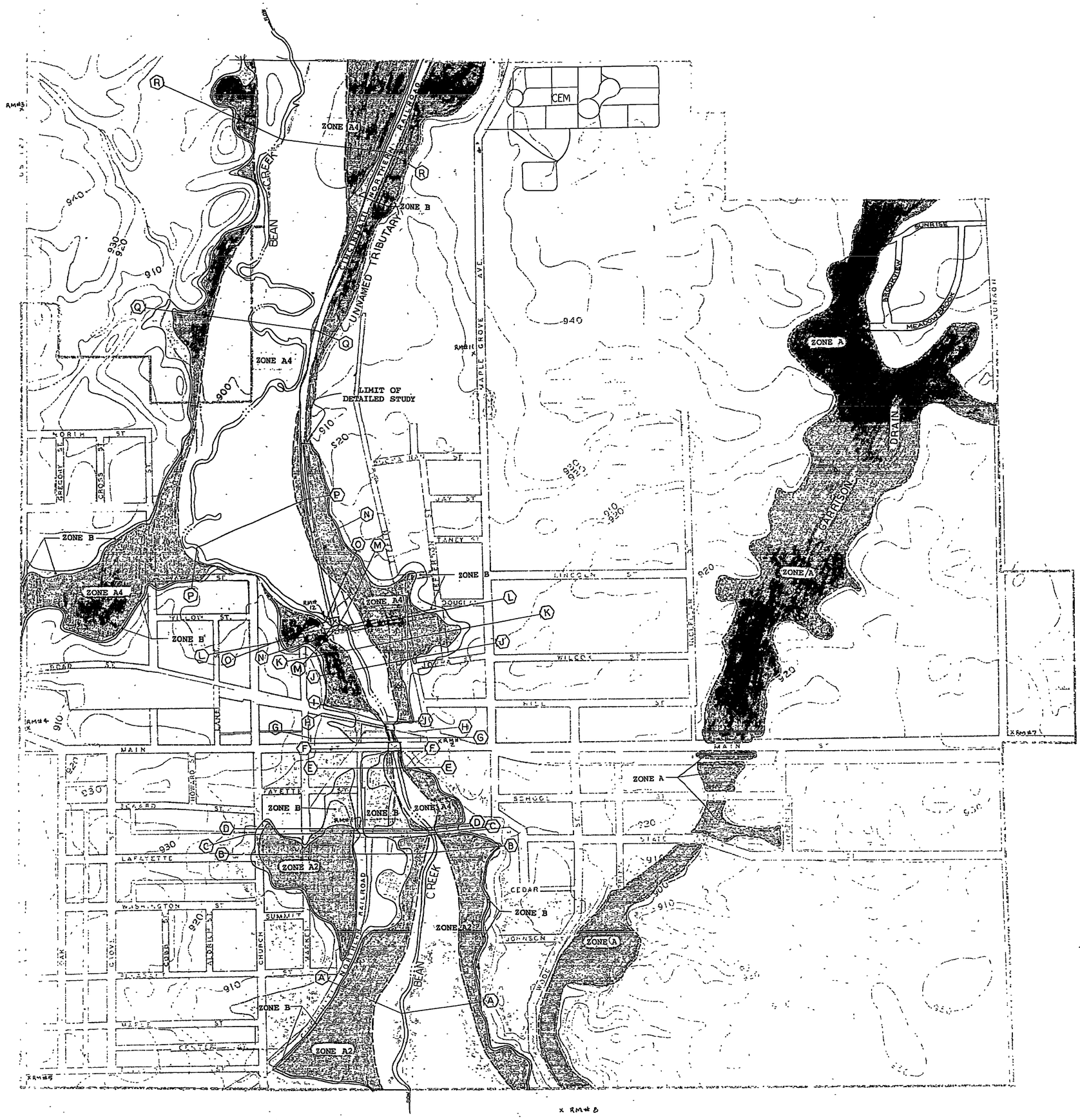
295-7 912.08

CITY OF HUDSON, MI.
SCALE 1-400' 4'CI
8/13/79

KEY

Floodway

13 Field Surveyed Section



KEY TO MAP

500-year Flood Boundary	ZONE B
100-year Flood Boundary	
FLOODWAY FRINGE	FLOODWAY
100-year Flood Boundary	
500-year Flood Boundary	ZONE B
Elevation Reference Mark	× RM7
Cross Section Line	A — A
Approximate 100-year Flood Boundary	
Zone Designation	Zone A

NOTES TO USER

Boundaries of the floodways were computed at cross-sections and interpolated between cross sections. The floodways were based on hydraulic considerations without regard to economic, legal, or political factors.

This map was prepared to support minimum flood plain management regulations; it may not show all areas subject to flooding in the community or all planimetric features outside special flood hazard areas.

EXPLANATION OF ZONE DESIGNATIONS

A flood insurance map displays the zone designations for a community according to areas of designated flood hazards. The zone designations used by FIA are:

Zone	Explanation
A	Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods, no base flood elevations shown or FHF's determined.
A1-A30	Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations established, and zones assigned according to FHF's.
B	Area between Zones A1-A30 and the limits of the 500-year flood.

0 200 400 800 1200
SCALE 1"=400

EXHIBIT 2

FLOOD BOUNDARY AND FLOODWAY MAP
FLOOD INSURANCE RATE MAP

CITY OF HUDSON
MICHIGAN
LENAWEE COUNTY

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
FEDERAL INSURANCE ADMINISTRATION

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: HUDSON, CITY OF

3) WATERCOURSE: BEAN CREEK

4) DOCUMENT TYPE: ~~100-YEAR~~ CONVERGENCE RUNS

00BREAK00

Beancon V.

```
*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
*****************************************************

C
T1      HUD-FIA H-4705
T2      CITY OF HUDSON FIS
T3      BEAN CREEK 100 YR

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

      -1.       4.       0.       0.  0.000000    0.00      0.0      0.   890.000   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 I

QT      5.000  2270.000  3180.000  3530.000  4900.000  3530.000     0.000     0.000     0.000     0.000
NC       .085      .085      .050      .100      .300     0.000     0.000     0.000     0.000     0.000

X1       .900     8.000   720.000   780.000     0.000     0.000     0.000     0.000     0.000     0.000
GR    890.000   720.000   881.000   730.000   879.500   731.000   879.100   745.000   879.500   755.000
GR    881.000   760.000   885.000   780.000   887.500   980.000     0.000     0.000     0.000     0.000

        *** D/S FACE NELSON RD.

X1       .990     9.000   590.000   642.000   142.000   142.000   142.000     0.000     0.000     0.000
GR    888.500   430.000   887.500   506.000   891.500   590.000   886.000   591.000   881.400   614.000
GR    879.400   626.000   881.100   640.000   888.100   641.000   891.500   642.000     0.000     0.000

X1      1.010     0.000     0.000     0.000    16.000    16.000    16.000     0.000     0.000     0.000

X1      1.900     7.000   490.000   600.000    42.000    42.000    42.000     0.000     0.000     0.000
GR    889.500   350.000   885.750   490.000   881.100   540.000   880.600   555.000   881.100   570.000
GR    887.800   580.000   890.500   600.000     0.000     0.000     0.000     0.000     0.000     0.000
NC      0.000     0.000     0.000      .150      .350     0.000     0.000     0.000     0.000     0.000

        *** REPEAT OF 1.99

X1      1.930     7.000   310.000   350.000   700.000   700.000   700.000     0.000    -1.600     0.000
GR    890.000   230.000   888.000   310.000   883.500   320.000   883.000   330.000   883.500   345.000
GR    888.000   350.000   890.000   480.000     0.000     0.000     0.000     0.000     0.000     0.000

        *** REPEAT OF 1.99

X1      1.970     0.000     0.000     0.000   750.000   750.000   750.000   0.000      .900     0.000
QT      5.000  2170.000  3050.000  3420.000  4750.000  3420.000     0.000     0.000     0.000     0.000
```

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*** SYNTHETIC VALLEY SECTION

X1	1.990	7.000	310.000	350.000	650.000	650.000	650.000	0.000	0.000	0.000
GR	890.000	230.000	888.000	310.000	883.500	320.000	883.000	330.000	883.500	345.000
GR	888.000	350.000	890.000	480.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	2.000	11.000	340.000	385.000	1450.000	1450.000	1450.000	0.000	0.000	0.000
GR	895.100	50.000	892.000	145.000	889.600	340.000	886.250	350.000	885.000	355.000
GR	884.800	360.000	885.000	375.000	886.250	380.000	889.500	385.000	890.600	440.000
GR	897.500	455.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

*** COMMUNITY BDY.

X1	2.500	11.000	570.000	660.000	1750.000	1750.000	1750.000	0.000	-.800	0.000
GR	900.000	479.000	900.000	480.000	895.000	570.000	892.500	600.000	888.000	615.000
GR	887.200	620.000	887.000	630.000	887.200	642.000	888.000	645.000	894.000	660.000
GR	900.000	775.000	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

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*PROF 1

CCHV= .100 CEHV= .300

*SECNO .900

3280 CROSS SECTION .90 EXTENDED 2.50 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
.90	10.90	890.00	0.00	890.00	890.23	.23	0.00	0.00	890.00
3530.	0.	2291.	1239.	0.	500.	750.	0.	0.	885.00
0.00	0.00	4.58	1.65	.085	.050	.085	0.000	879.10	720.00
.001558	0.	0.	0.	0	0	0	0.00	260.00	980.00

*SECNO .990

3265 DIVIDED FLOW

3280 CROSS SECTION .99 EXTENDED 1.46 FEET

3301 HV CHANGED MORE THAN HVINS

*** D/S FACE NELSON RD.

.99	10.55	889.95	0.00	0.00	890.79	.84	.38	.18	891.50
3530.	401.	3129.	0.	212.	402.	0.	3.	1.	891.50
.01	1.89	7.79	0.00	.085	.050	.085	.050	879.40	430.00
.005776	142.	142.	142.	2	0	0	0.00	178.84	641.55

*SECNO 1.010

3265 DIVIDED FLOW

3280 CROSS SECTION 1.01 EXTENDED 1.61 FEET

1.01	10.71	890.11	0.00	0.00	890.89	.78	.09	.01	891.50
3530.	440.	3090.	0.	232.	410.	0.	3.	1.	891.50
.01	1.90	7.54	0.00	.085	.050	.085	.049	879.40	430.00
.005319	16.	16.	16.	2	0	0	0.00	182.12	641.59

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 1.36 FEET

3301 HV CHANGED MORE THAN HVINS

1.90	10.25	890.85	0.00	0.00	891.04	.19	.10	.06	885.75

THE UNIVERSITY OF MICHIGAN CONRAD NO CENTER

3530.	609.	2921.	0.	453.	770.	0.	4.	1.	890.50
.01	1.35	3.79	0.00	.085	.050	.085	.049	880.60	350.00
.001257	42.	42.	42.	2	0	0	0.00	250.00	600.00

CCHV= .150 CEHV= .350

*SECNO 1.930

3280 CROSS SECTION 1.93 EXTENDED 3.41 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

*** REPEAT OF 1.99

1.93	10.41	891.81	0.00	0.00	892.04	.22	.98	.01	886.40
3530.	642.	1835.	1054.	353.	369.	574.	24.	5.	886.40
.07	1.82	4.97	1.84	.085	.050	.085	.050	881.40	230.00
.001578	700.	700.	700.	3	0	0	0.00	250.00	480.00

*SECNO 1.970

3280 CROSS SECTION 1.97 EXTENDED 3.65 FEET

*** REPEAT OF 1.99

1.97	10.65	892.95	0.00	0.00	893.15	.20	1.11	.00	887.30
3530.	656.	1797.	1078.	372.	378.	604.	47.	9.	887.30
.13	1.76	4.75	1.78	.085	.050	.085	.050	882.30	230.00
.001391	750.	750.	750.	2	0	0	0.00	250.00	480.00

*SECNO 1.990

3280 CROSS SECTION 1.99 EXTENDED 3.82 FEET

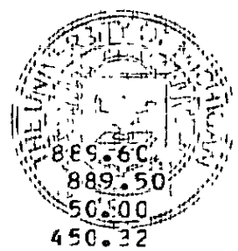
*** SYNTHETIC VALLEY SECTION

1.99	10.82	893.82	0.00	0.00	893.99	.18	.84	.00	888.00
3420.	644.	1716.	1060.	385.	385.	626.	68.	13.	888.00
.19	1.67	4.45	1.69	.085	.050	.085	.050	883.00	230.00
.001197	650.	650.	650.	2	0	0	0.00	250.00	480.00

*SECNO 2.000

3280 CROSS SECTION 2.00 EXTENDED .25 FEET

2.00	10.55	895.35	0.00	0.00	895.46	.12	1.46	.01	889.60
3420.	1378.	1567.	475.	1057.	418.	316.	121.	24.	889.50
.35	1.30	3.75	1.50	.085	.050	.085	.050	884.80	50.00
.000861	1450.	1450.	1450.	2	0	0	0.00	400.32	450.32

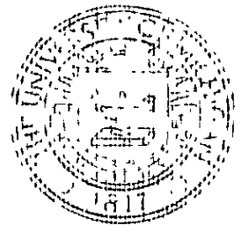


THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*SECNO 2.500

*** COMMUNITY BDY.

2.50	11.08	897.28	0.00	0.00	897.59	.31	2.06	.07	894.20
3420.	82.	3153.	185.	85.	679.	160.	175.	36.	893.20
.46	.96	4.64	1.16	.085	.050	.085	.050	886.20	514.55
.001701	1750.	1750.	1750.	2	0	0	0.00	223.65	738.21



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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1      HUD-FIA H-4705
T2      CITY OF HUDSON FIS
T3      BEAN CREEK 100 YR

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -1.       4.        0.        0.  0.000000      0.00      0.0        0.   889.000     0.000

J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE
     2.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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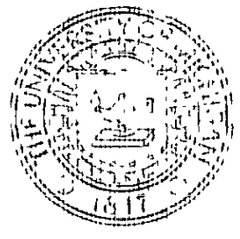

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*PROF 2

CCHV= .100 CEHV= .300

*SECNO .900

3280 CROSS SECTION .90 EXTENDED 1.50 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	ICCNT	CORAR	TOPWID	ENDST
.90	9.90	889.00	0.00	889.00	889.38	.38	0.00	0.00	890.00
3530.	0.	2533.	997.	0.	441.	550.	0.	0.	885.00
0.00	0.00	5.75	1.81	.085	.050	.085	0.000	879.10	721.11
.002815	0.	0.	0.	0	0	0	0.00	258.89	980.00

*SECNO .990

3265 DIVIDED FLOW

3280 CROSS SECTION .99 EXTENDED .52 FEET

3301 HV CHANGED MORE THAN HVINS

*** D/S FACE NELSON RD.

.99	9.61	889.01	0.00	0.00	890.35	1.34	.68	.29	891.50
3530.	169.	3361.	0.	102.	354.	0.	2.	1.	891.50
.00	1.67	9.50	0.00	.085	.050	.085	.050	879.40	430.00
.009755	142.	142.	142.	2	0	0	0.00	158.71	641.27

*SECNO 1.010

3265 DIVIDED FLOW

3280 CROSS SECTION 1.01 EXTENDED .90 FEET

1.01	10.00	889.40	0.00	0.00	890.51	1.11	.14	.02	891.50
3530.	262.	3268.	0.	144.	373.	0.	3.	1.	891.50
.00	1.81	8.75	0.00	.085	.050	.085	.049	879.40	430.00
.007851	16.	16.	16.	3	0	0	0.00	166.93	641.38

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 1.01 FEET

3301 HV CHANGED MORE THAN HVINS

1.90 9.90 890.50 0.00 0.00 890.72 .22 .12 .09 T 885.75/EFS

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3530.	558.	2972.	0.	404.	732.	0.	3.	1.	890.50
.01	1.38	4.06	0.00	.085	.050	.085	.049	880.60	350.00
.001538	42.	42.	42.	2	0	0	0.00	250.00	600.00

CCHV= .150 CEHV= .350
*SECNO 1.930
3280 CROSS SECTION 1.93 EXTENDED 3.23 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	XICH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

*** REPEAT OF 1.99

1.93	10.23	891.63	0.00	0.00	891.87	.24	1.15	.01	886.40
3530.	630.	1866.	1034.	339.	362.	550.	23.	5.	886.40
.06	1.86	5.16	1.88	.085	.050	.085	.050	881.40	230.00
.001745	700.	700.	700.	3	0	0	0.00	250.00	480.00

*SECNO 1.970
3280 CROSS SECTION 1.97 EXTENDED 3.56 FEET

*** REPEAT OF 1.99

1.97	10.56	892.86	0.00	0.00	893.07	.21	1.19	.01	887.30
3530.	651.	1811.	1069.	365.	375.	593.	45.	9.	887.30
.12	1.78	4.83	1.80	.085	.050	.085	.050	882.30	230.00
.001459	750.	750.	750.	0	0	0	0.00	250.00	480.00

*SECNO 1.990
3280 CROSS SECTION 1.99 EXTENDED 3.77 FEET

*** SYNTHETIC VALLEY SECTION

1.99	10.77	893.77	0.00	0.00	893.95	.18	.87	.00	888.00
3420.	642.	1723.	1055.	381.	383.	620.	65.	13.	888.00
.18	1.68	4.50	1.70	.085	.050	.085	.050	883.00	230.00
.001229	650.	650.	650.	2	0	0	0.00	250.00	480.00

*SECNO 2.000
3280 CROSS SECTION 2.00 EXTENDED .23 FEET

2.00	10.53	895.33	0.00	0.00	895.45	.12	1.49	.01	889.60
3420.	1374.	1571.	475.	1051.	417.	314.	118.	24.	889.50
.35	1.31	3.77	1.51	.085	.050	.085	.050	884.80	50.00
.000872	1450.	1450.	1450.	2	0	0	0.00	400.27	450.27

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*SECNO 2.500

*** COMMUNITY BDY.

2.50	11.08	897.28	0.00	0.00	897.59	.31	2.07	.07	894.20
3420.	82.	3153.	185.	85.	679.	159.	172.	36.	893.20
.46	.96	4.65	1.16	.085	.050	.085	.050	886.20	514.61
.001704	1750.	1750.	1750.	2	0	0	0.00	223.53	738.14

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR =  01
  MODIFICATION -  50,51,52
**************************************************

T1      HUD-FIA F-4705
T2      CITY OF HUDSON FIS
T3      BEAN CREEK 100 YR

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -1.       4.        0.        0.  0.000000      0.00      0.0       0.   890.000     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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THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*PROF 3

CCHV= .100 CEHV= .300

*SECNO .900

3280 CROSS SECTION .90 EXTENDED 2.50 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
.90	10.90	890.00	0.00	890.00	890.23	.23	0.00	0.00	890.00
3530.	0.	2291.	1239.	0.	500.	750.	0.	0.	885.00
0.00	0.00	4.58	1.65	.085	.050	.085	0.000	879.10	720.00
.001558	0.	0.	0.	0	0	0	0.00	260.00	980.00

*SECNO .990

3265 DIVIDED FLOW

3280 CROSS SECTION .99 EXTENDED 1.46 FEET

3301 HV CHANGED MORE THAN HVINS

*** D/S FACE NELSON RD.

.99	10.55	889.95	0.00	0.00	890.79	.84	.38	.18	891.50
3530.	401.	3129.	0.	212.	402.	0.	3.	1.	891.50
.01	1.89	7.79	0.00	.085	.050	.085	.050	879.40	430.00
.005776	142.	142.	142.	2	0	0	0.00	178.84	641.55

*SECNO 1.010

3265 DIVIDED FLOW

3280 CROSS SECTION 1.01 EXTENDED 1.61 FEET

1.01	10.71	890.11	0.00	0.00	890.89	.78	.09	.01	891.50
3530.	440.	3090.	0.	232.	410.	0.	3.	1.	891.50
.01	1.90	7.54	0.00	.085	.050	.085	.049	879.40	430.00
.005318	16.	16.	16.	2	0	0	0.00	182.12	641.59

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 1.36 FEET

3301 HV CHANGED MORE THAN HVINS

1.90	10.25	890.85	0.00	0.00	891.04	.19	.10	.06	885.75

UNIVERSITY OF MICHIGAN COMPUTING CENTER

3530.	609.	2921.	0.	453.	770.	0.	4.	1.	890.50
.01	1.35	3.79	0.00	.085	.050	.085	.049	880.60	350.00
.001257	42.	42.	42.	2	0	0	0.00	250.00	600.00

CCHV= .150 CEHV= .350
*SECNO 1.930
3280 CROSS SECTION 1.93 EXTENDED 3.41 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

*** REPEAT OF 1.99

1.93	10.41	891.81	0.00	0.00	892.04	.22	.98	.01	886.40
3530.	642.	1835.	1054.	353.	369.	574.	24.	5.	886.40
.07	1.82	4.97	1.84	.085	.050	.085	.050	881.40	230.00
.001578	700.	700.	700.	3	0	0	0.00	250.00	480.00

*SECNO 1.970
3280 CROSS SECTION 1.97 EXTENDED 3.65 FEET

*** REPEAT OF 1.99

1.97	10.65	892.95	0.00	0.00	893.15	.20	1.11	.00	887.30
3530.	656.	1797.	1078.	372.	378.	604.	47.	9.	887.30
.13	1.76	4.75	1.78	.085	.050	.085	.050	882.30	230.00
.001391	750.	750.	750.	2	0	0	0.00	250.00	480.00

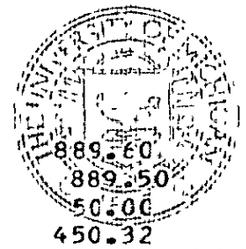
*SECNO 1.990
3280 CROSS SECTION 1.99 EXTENDED 3.82 FEET

*** SYNTHETIC VALLEY SECTION

1.99	10.82	893.82	0.00	0.00	893.99	.18	.84	.00	888.00
3420.	644.	1716.	1060.	385.	385.	626.	68.	13.	888.00
.19	1.67	4.45	1.69	.085	.050	.085	.050	883.00	230.00
.001197	650.	650.	650.	2	0	0	0.00	250.00	480.00

*SECNO 2.000
3280 CROSS SECTION 2.00 EXTENDED .25 FEET

2.00	10.55	895.35	0.00	0.00	895.46	.12	1.46	.01	889.60
3420.	1378.	1567.	475.	1057.	418.	316.	121.	24.	889.50
.35	1.30	3.75	1.50	.085	.050	.085	.050	884.80	50.00
.000861	1450.	1450.	1450.	2	0	0	0.00	400.32	450.32

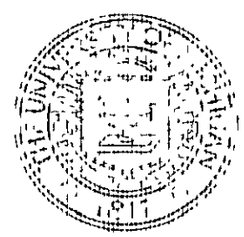


THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*SECNO 2.500

*** COMMUNITY BDY.

2.50	11.08	897.28	0.00	0.00	897.59	.31	2.06	.07	894.20
3420.	82.	3153.	185.	85.	679.	160.	175.	36.	893.20
.46	.96	4.64	1.16	.085	.050	.085	.050	886.20	514.55
.001701	1750.	1750.	1750.	2	0	0	0.00	223.65	738.21



THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1      HUD-FIA H-4705
T2      CITY OF HUDSON FIS
T3      BEAN CREEK 100 YR

J1  ICHECK      INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -1.        4.        0.        0.  0.000000      0.00      0.0       0.    891.000   0.000

J2  NPROF       IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
     4.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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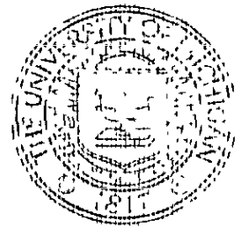

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*PROF 4

CCHV= .100 CEHV= .300

*SECNO .900

3280 CROSS SECTION .90 EXTENDED 3.50 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
.90	11.90	891.00	0.00	891.00	891.15	.15	0.00	0.00	890.00
3530.	0.	2116.	1414.	0.	560.	950.	0.	0.	885.00
0.00	0.00	3.78	1.49	.085	.050	.085	0.000	879.10	720.00
.000930	0.	0.	0.	0	0	0	0.00	260.00	980.00

*SECNO .990

3265 DIVIDED FLOW

3280 CROSS SECTION .99 EXTENDED 2.47 FEET

*** D/S FACE NELSON RD.

.99	11.57	890.97	0.00	0.00	891.49	.52	.23	.11	891.50
3530.	651.	2879.	0.	352.	454.	0.	4.	1.	891.50
.01	1.85	6.35	0.00	.085	.050	.085	.050	879.40	430.00
.003404	142.	142.	142.	2	0	0	0.00	200.56	641.84

*SECNO 1.010

3265 DIVIDED FLOW

3280 CROSS SECTION 1.01 EXTENDED 2.54 FEET

1.01	11.64	891.04	0.00	0.00	891.54	.50	.05	.00	891.50
3530.	667.	2863.	0.	362.	458.	0.	4.	1.	891.50
.01	1.84	6.26	0.00	.085	.050	.085	.049	879.40	430.00
.003284	16.	16.	16.	2	0	0	0.00	202.09	641.86

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 2.00 FEET

1.90	10.89	891.49	0.00	0.00	891.64	.15	.06	.04	885.75
3530.	692.	2838.	0.	542.	840.	0.	5.	1.	890.50
.01	1.28	3.38	0.00	.085	.050	.085	.049	880.60	350.00
.000895	42.	42.	42.	2	0	0	0.00	250.00	600.00

CCHV= .150 CEHV= .350

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*SECNO 1.930
3280 CROSS SECTION 1.93 EXTENDED 3.81 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLCB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
	*** REPEAT OF 1.99								
1.93	10.81	892.21	0.00	0.00	892.40	.19	.74	.01	886.40
3530.	665.	1773.	1093.	385.	385.	625.	27.	5.	886.40
.07	1.73	4.61	1.75	.085	.050	.085	.050	881.40	230.00
.001282	700.	700.	700.	2	0	0	0.00	250.00	480.00

*SECNO 1.970
3280 CROSS SECTION 1.97 EXTENDED 3.86 FEET

	*** REPEAT OF 1.99								
1.97	10.86	893.16	0.00	0.00	893.35	.18	.95	.00	887.30
3530.	668.	1765.	1098.	389.	387.	632.	52.	9.	887.30
.14	1.72	4.56	1.74	.085	.050	.085	.050	882.30	230.00
.001246	750.	750.	750.	2	0	0	0.00	250.00	480.00

*SECNO 1.990
3280 CROSS SECTION 1.99 EXTENDED 3.95 FEET

	*** SYNTHETIC VALLEY SECTION								
1.99	10.95	893.95	0.00	0.00	894.12	.17	.77	.00	888.00
3420.	651.	1697.	1071.	396.	391.	644.	73.	13.	888.00
.20	1.64	4.35	1.66	.085	.050	.085	.050	883.00	230.00
.001118	650.	650.	650.	2	0	0	0.00	250.00	480.00

*SECNO 2.000
3280 CROSS SECTION 2.00 EXTENDED .30 FEET

2.00	10.61	895.41	0.00	0.00	895.52	.11	1.39	.01	889.60
3420.	1387.	1557.	476.	1074.	420.	320.	127.	24.	889.50
.37	1.29	3.70	1.49	.085	.050	.085	.050	884.80	50.00
.000832	1450.	1450.	1450.	2	0	0	0.00	400.44	450.44

*SECNO 2.500
*** COMMUNITY BDY.

2.50	11.09	897.29	0.00	0.00	897.60	.31	2.01	.07	894.20
3420.	83.	3152.	186.	86.	680.	160.	182.	36.	893.20

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

.48	.96	4.64	1.16	.085	.050	.085	.050	886.20	514.37
.001692	1750.	1750.	1750.	2	0	0	0.00	224.03	738.40

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**************************************************

T1      HUD-FIA H-4705
T2      CITY OF HUDSON FIS
T3      BEAN CREEK 100 YR

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
       -1.       4.        0.        0.  0.000000      0.00      0.0        0.   892.000     0.000
J2  NPROF      IPLOT     PRFVS     XSECV     XSECH     FN        ALLOC     IBW       CHNIM     ITRACE
    15.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
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THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

*PROF 5

CCHV= .100 CEHV= .300

*SECNO .900

3280 CROSS SECTION .90 EXTENDED 4.50 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	IOC	ICONT	CORAR	TOPWIC	ENDST
.90	12.90	892.00	0.00	892.00	892.10	.10	0.00	0.00	890.00
3530.	0.	1982.	1548.	0.	620.	1150.	0.	0.	885.00
0.00	0.00	3.19	1.35	.085	.050	.085	0.000	879.10	720.00
.000593	0.	0.	0.	0	0	0	0.00	260.00	980.00

*SECNO .990

3280 CROSS SECTION .99 EXTENDED 3.48 FEET

*** D/S FACE NELSON RD.

.99	12.58	891.98	0.00	0.00	892.31	.33	.14	.07	891.50
3530.	887.	2643.	0.	511.	507.	0.	5.	1.	891.50
.01	1.74	5.22	0.00	.085	.050	.085	.050	879.40	430.00
.002051	142.	142.	142.	2	0	0	0.00	212.00	642.00

*SECNO 1.010

3280 CROSS SECTION 1.01 EXTENDED 3.51 FEET

1.01	12.62	892.02	0.00	0.00	892.34	.32	.03	.00	891.50
3530.	894.	2636.	0.	516.	508.	0.	5.	1.	891.50
.01	1.73	5.19	0.00	.085	.050	.085	.049	879.40	430.00
.002023	16.	16.	16.	1	0	0	0.00	212.00	642.00

*SECNO 1.900

3280 CROSS SECTION 1.90 EXTENDED 2.80 FEET

1.90	11.70	892.30	0.00	0.00	892.41	.11	.04	.02	885.75
3530.	778.	2752.	0.	654.	928.	0.	6.	1.	890.50
.01	1.19	2.96	0.00	.085	.050	.085	.049	880.60	350.00
.000609	42.	42.	42.	2	0	0	0.00	250.00	600.00

CCHV= .150 CEHV= .350

*SECNO 1.930

3280 CROSS SECTION 1.93 EXTENDED 4.40 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

TIME	VLCB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
	*** REPEAT OF 1.99								
1.93	11.40	892.80	0.00	0.00	892.95	.15	.53	.01	886.40
3530.	694.	1693.	1143.	432.	409.	702.	31.	5.	886.40
.08	1.61	4.14	1.63	.085	.050	.085	.050	881.40	230.00
.000957	700.	700.	700.	2	0	0	0.00	250.00	480.00
*SECNO 1.970									
3280 CROSS SECTION	1.97 EXTENDED	4.24 FEET							
	*** REPEAT OF 1.99								
1.97	11.24	893.54	0.00	0.00	893.70	.16	.75	.00	887.30
3530.	687.	1713.	1130.	419.	402.	681.	58.	9.	887.30
.15	1.64	4.26	1.66	.085	.050	.085	.050	882.30	230.00
.001033	750.	750.	750.	2	0	0	0.00	250.00	480.00
*SECNO 1.990									
3280 CROSS SECTION	1.99 EXTENDED	4.20 FEET							
	*** SYNTHETIC VALLEY SECTION								
1.99	11.21	894.21	0.00	0.00	894.36	.15	.66	.00	888.00
3420.	663.	1665.	1092.	416.	400.	676.	80.	13.	888.00
.22	1.60	4.16	1.62	.085	.050	.085	.050	883.00	230.00
.000990	650.	650.	650.	1	0	0	0.00	250.00	480.00
*SECNO 2.000									
3280 CROSS SECTION	2.00 EXTENDED	.42 FEET							
2.00	10.73	895.53	0.00	0.00	895.63	.11	1.27	.01	889.60
3420.	1407.	1536.	477.	1109.	426.	327.	136.	24.	889.50
.39	1.27	3.61	1.46	.085	.050	.085	.050	884.80	50.00
.000776	1450.	1450.	1450.	2	0	0	0.00	400.71	450.71
*SECNO 2.500									
	*** COMMUNITY BDY.								
2.50	11.12	897.32	0.00	0.00	897.62	.31	1.92	.07	894.20
3420.	84.	3149.	187.	87.	682.	162.	192.	37.	893.20
.50	.96	4.62	1.15	.085	.050	.085	.050	886.20	513.92
.001670	1750.	1750.	1750.	2	0	0	0.00	224.96	738.88

THE UNIVERSITY OF MICHIGAN COMPUTING CENTER

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: HUDSON, CITY OF

3) WATERCOURSE: BEAN CREEK

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

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*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
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Profile has been revised, use attached summary output

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C
T1      HUD-FIA H-4705
T2      CITY OF HUDSON F1S
T3      BEAN CREEK  100 YR FLOW

J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ

     -1.       4.       0.       0.  0.000000     0.00      0.0      0.   897.300   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

QT      5.000  2170.000  3050.000  3420.000  4750.000  3420.000     0.000     0.000     0.000     0.000
NC       .085      .085      .050      .100      .300     0.000     0.000     0.000     0.000     0.000

X1      2.500    11.000   570.000   660.000     0.000     0.000     0.000     0.000    -.800     0.000
GR    900.000   479.000   900.000   480.000   895.000   570.000   892.500   600.000   888.000   615.000
GR    887.200   620.000   887.000   630.000   887.200   642.000   888.000   645.000   894.000   660.000
GR    900.000   775.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000

X1      3.000     0.000     0.000     0.000   700.000   700.000   700.000     0.000     .800     0.000

X1      3.900     9.000   500.000   552.000  1300.000  1300.000  1300.000     0.000     0.000     0.000
GR    901.500   450.000   895.000   500.000   890.500   510.000   889.700   515.000   889.000   525.000
GR    889.700   535.000   890.500   540.000   894.700   552.000   901.500   600.000     0.000     0.000
NC       .075      .075      .045      .300      .500     0.000     0.000     0.000     0.000     0.000

        *** D/S FACE MECHANIC ST. BRIDGE

X1      3.980     7.000    35.000    89.000   132.000   132.000   132.000     0.000     0.000     0.000
X3     10.000     0.000     0.000     0.000     0.000     0.000     0.000   900.700   900.700     0.000
GR    902.000    15.000   899.000    35.000   890.500    35.100   889.800    65.000   890.500    88.900
GR    899.000    89.000   902.000   115.000     0.000     0.000     0.000     0.000     0.000     0.000
SB      0.000     1.350     2.600   100.000    54.000     0.000   500.000     0.000   889.800   889.800

X1      4.020     0.000     0.000     0.000    37.000    37.000    37.000     0.000     0.000     0.000
X2      0.000     0.000     1.000   899.000   902.000     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   902.500   902.500     0.000

X1      4.100    10.000   289.000   345.000    32.000    32.000    32.000     .810     0.000     0.000
GR    900.000   249.000   900.000   250.000   896.500   289.000   890.400   298.000   889.000   300.000
GR    888.400   320.000   889.000   330.000   890.400   335.000   896.300   345.000   900.000   370.000
NC      0.000     0.000     0.000     .100      .300     0.000     0.000     0.000     0.000     0.000
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X1	5.900	10.000	20.000	85.000	550.000	550.000	550.000	0.000	0.000	0.000
GR	910.000	0.000	902.500	20.000	895.000	25.000	891.400	35.000	889.000	40.000
GR	889.800	50.000	889.000	65.000	891.400	70.000	901.200	85.000	902.500	150.000
NC	0.000	0.000	0.000	.300	.500	0.000	0.000	0.000	0.000	0.000

*** D/S FACE MAIN ST.

X1	5.980	9.000	125.000	185.000	150.000	150.000	150.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	905.000	905.000	0.000
GR	907.000	100.000	902.000	125.000	894.000	126.000	890.500	140.000	890.000	160.000
GR	890.500	176.000	894.000	184.000	902.000	185.000	906.000	200.000	0.000	0.000
SB	0.000	1.420	2.600	100.000	60.000	0.000	600.000	0.000	890.000	890.000

X1	6.020	0.000	0.000	0.000	47.000	47.000	47.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	901.900	905.500	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	905.500	905.500	0.000

X1	6.500	8.000	190.000	260.000	75.000	75.000	75.000	0.000	0.000	0.000
GR	907.000	190.000	891.600	215.000	890.000	220.000	889.000	230.000	890.000	245.000
GR	891.600	250.000	904.300	260.000	905.000	290.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.250	.450	0.000	0.000	0.000	0.000	0.000

*** D/S FACE RAILROAD BRIDGE

X1	6.980	7.000	60.000	120.000	60.000	60.000	60.000	.910	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	921.500	921.500	0.000
GR	904.000	20.000	904.000	60.000	892.500	70.000	891.000	90.000	892.500	110.000
GR	901.000	120.000	903.500	170.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	.040	.400	.800	0.000	0.000	0.000	0.000	0.000

X1	6.990	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	921.500	921.500	0.000
BT	7.000	20.000	921.500	0.000	60.000	921.500	904.000	70.000	921.500	910.000
BT	90.000	921.500	914.600	110.000	921.500	910.000	120.000	921.500	901.000	170.000
BT	903.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

X1	7.010	0.000	0.000	0.000	28.000	28.000	28.000	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	10.000	0.000	0.000	0.000	0.000	0.000	0.000	921.500	921.500	0.000
NC	0.000	0.000	.045	.250	.450	0.000	0.000	0.000	0.000	0.000

X1	7.020	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	921.500	921.500	0.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000

X1	7.100	9.000	220.000	290.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	903.700	120.000	900.000	175.000	896.500	220.000	891.600	230.000	890.300	235.000
GR	889.700	250.000	890.300	260.000	891.600	265.000	902.800	290.000	0.000	0.000

X1	8.000	9.000	998.000	1052.000	500.000	500.000	500.000	0.000	0.000	0.000

GR	905.000	920.000	898.500	998.000	892.000	1005.000	891.500	1010.000	891.000	1030.000
GR	891.200	1045.000	892.000	1050.000	897.000	1052.000	905.000	1120.000	0.000	0.000
X1	8.900	9.000	1430.000	1490.000	160.000	160.000	160.000	0.000	0.000	0.000
GR	905.000	1360.000	898.500	1430.000	892.000	1440.000	891.500	1450.000	891.000	1465.000
GR	891.500	1480.000	892.000	1487.000	898.500	1490.000	905.000	1550.000	0.000	0.000
NC	0.000	0.000	0.000	.300	.500	0.000	0.000	0.000	0.000	0.000

*** D/S FACE JACKSON ST. BRIDGE

X1	8.980	9.000	106.000	160.000	150.000	150.000	150.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	904.000	904.000	0.000
GR	903.600	35.000	900.500	106.000	895.700	107.000	892.000	120.000	891.600	130.000
GR	892.000	150.000	894.900	159.000	900.500	160.000	903.700	234.000	0.000	0.000
SB	0.000	1.320	2.600	182.000	49.000	0.000	410.000	0.000	891.600	891.600
X1	9.020	0.000	0.000	0.000	33.000	33.000	33.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	900.500	904.500	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	904.500	904.500	0.000
NC	0.000	0.000	0.000	.400	.800	0.000	0.000	0.000	0.000	0.000
X1	9.500	10.000	585.000	660.000	70.000	70.000	70.000	0.000	0.000	0.000
GR	905.000	550.000	898.000	585.000	896.000	600.000	892.500	605.000	892.200	610.000
GR	892.000	625.000	892.200	645.000	892.500	650.000	903.900	660.000	907.500	675.000

*** D/S FACE RAILROAD BRIDGE

X1	9.980	7.000	110.000	176.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	902.700	902.700	0.000
GR	904.500	75.000	900.400	110.000	893.400	110.100	893.200	145.000	893.500	175.000
GR	900.400	176.000	904.500	225.000	0.000	0.000	0.000	0.000	0.000	0.000
SB	1.250	1.470	2.800	150.000	66.000	6.000	430.000	0.000	893.200	893.200
X1	10.020	0.000	0.000	0.000	21.000	21.000	21.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	900.400	904.500	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	904.500	904.500	0.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
X1	10.100	9.000	530.000	620.000	50.000	50.000	50.000	0.000	0.000	0.000
GR	904.500	529.000	904.500	530.000	895.500	560.000	892.500	563.000	892.000	565.000
GR	892.000	585.000	892.000	600.000	892.500	605.000	900.800	620.000	0.000	0.000
X1	11.000	9.000	1090.000	1150.000	1250.000	1250.000	1250.000	0.000	0.000	0.000
GR	905.000	970.000	899.000	1090.000	894.000	1100.000	893.300	1105.000	893.000	1120.000
GR	893.300	1135.000	894.000	1140.000	897.800	1150.000	905.000	1200.000	0.000	0.000
NC	.095	.095	.055	0.000	0.000	0.000	0.000	0.000	0.000	0.000
X1	12.000	8.000	600.000	650.000	2650.000	2650.000	2650.000	0.000	0.000	0.000
GR	907.500	450.000	905.000	500.000	900.600	600.000	897.400	620.000	897.200	635.000
GR	897.400	647.000	904.000	650.000	905.000	700.000	0.000	0.000	0.000	0.000
NC	.085	.085	.050	0.000	0.000	0.000	0.000	0.000	0.000	0.000

XI	13.000	9.000	950.000	1010.000	2750.000	2750.000	2750.000	C.CCC	0.000	0.000
GR	910.000	850.000	906.000	950.000	900.800	959.000	899.800	960.000	899.600	980.000
GR	899.800	995.000	900.800	1000.000	905.000	1010.000	910.000	1100.000	0.000	0.000
XI	14.000	0.000	0.000	0.000	650.000	650.000	650.000	0.000	.700	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

CCHV= .100 CEHV= .300
*SECNO 2.500

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
2.50	11.10	897.30	0.00	897.30	897.61	.31	0.00	0.00	854.20
3420.	83.	3151.	186.	86.	681.	161.	0.	0.	893.20
0.00	.96	4.63	1.16	.085	.050	.085	0.000	886.20	514.20
.001684	0.	0.	0.	0	0	0	0.00	224.38	738.58

*SECNO 3.000

3.00	11.42	898.42	0.00	0.00	898.70	.27	1.08	.00	895.00
3420.	100.	3111.	210.	105.	710.	187.	16.	4.	894.00
.05	.94	4.38	1.12	.085	.050	.085	.050	887.00	508.40
.001428	700.	700.	700.	2	0	0	0.00	236.36	744.76

*SECNO 3.900

3.90	11.51	900.51	0.00	0.00	901.02	.52	2.25	.07	895.00
3420.	185.	3040.	195.	117.	500.	119.	41.	9.	894.70
.11	1.58	6.08	1.64	.085	.050	.085	.050	889.00	457.64
.002150	1300.	1300.	1300.	2	0	0	0.00	135.35	592.99

CCHV= .300 CEHV= .500
*SECNO 3.980

*** D/S FACE MECHANIC ST. BRIDGE

3.98	10.97	900.77	0.00	0.00	901.31	.55	.27	.01	895.00
3420.	8.	3401.	11.	10.	572.	14.	43.	10.	899.00
.12	.81	5.94	.81	.075	.045	.075	.050	889.80	23.23
.001996	132.	132.	132.	2	0	0	0.00	81.07	104.30

SPECIAL BRIDGE

SB	XK	XKOR	CDFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.35	2.60	100.00	54.00	0.00	500.00	0.00	889.80	889.80

*SECNO 4.020

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	TRAPEZOID AREA	ELLC	ELTRD

CA[illegible]ON

SEE

ATTACHED COMMENTS

Profiles have been revised, use attached summary output

should have no flow in OBie but only 0.5% no effect.

H = 1095

EG = 901.87

901.75	901.32	0.00	0.	3420.	500.	497.	899.00	902.00	

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 902.50 ELREA= 902.50

eay ok -0.12

4.02	11.44	901.24	0.00	0.00	901.75	.51	.44	0.00	899.00
3420.	0.	3420.	0.	0.	598.	0.	44.	10.	899.00
.12	0.00	5.72	0.00	.075	.045	.075	.050	889.80	35.00
.001819	37.	37.	37.	2	0	0	0.00	54.00	89.00

*SECNO 4.100
3280 CROSS SECTION 4.10 EXTENDED 1.26 FEET

4.10	12.86	901.26	0.00	0.00	901.84	.59	.06	.04	896.50
3420.	166.	3147.	107.	96.	492.	63.	44.	10.	896.30
.12	1.73	6.40	1.70	.075	.045	.075	.049	888.40	249.00
.001799	32.	32.	32.	2	0	0	0.00	98.01	347.01

CCHV= .100 CEHV= .300
*SECNO 5.900

5.90	13.49	902.29	0.00	0.00	902.71	.42	.85	.02	902.50
3420.	0.	3405.	15.	0.	654.	30.	53.	11.	901.20
.15	0.00	5.20	.49	.075	.045	.075	.049	888.80	20.14
.001344	550.	550.	550.	2	0	0	0.00	119.52	139.66

CCHV= .300 CEHV= .500
*SECNO 5.980

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 905.00 ELREA= 905.00

*** D/S FACE MAIN ST.

5.98	12.52	902.52	0.00	0.00	902.91	.40	.20	.01	902.00
3420.	0.	3420.	0.	0.	677.	0.	55.	11.	902.00
.16	0.00	5.05	0.00	.075	.045	.075	.048	890.00	125.00
.001264	150.	150.	150.	1	0	0	0.00	60.00	185.00

SPECIAL BRIDGE

SB	XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	~~1.42~~ 1.52	2.60	100.00	60.00	0.00	600.00	0.00	890.00	890.00

*SECNO 6.020
PRESSURE FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
903.23	902.91	0.00	0.	3420.	600.	714.	901.90	905.50

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 905.50 ELREA= 905.50

6.02	12.86	902.86	0.00	0.00	903.23	.37	.32	0.00	902.00
3420.	0.	3420.	0.	0.	697.	0.	56.	11.	902.00
.16	0.00	4.91	0.00	.075	.045	.075	.048	890.00	125.00
.001152	47.	47.	47.	2	0	0	0.00	60.00	185.00

H=8.06 OK

*SECNO 6.500

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	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
6.50	13.91	902.91	0.00	0.00	903.39	.49	.10	.06	907.00
3420.	0.	3420.	0.	0.	610.	0.	57.	12.	904.30
.17	0.00	5.60	0.00	.075	.045	.075	.048	889.00	196.65
.001651	75.	75.	75.	2	0	0	0.00	62.26	258.90

CCHV= .250 CEHV= .450
*SECNO 6.980

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 921.50 ELREA= 921.50

*** D/S FACE RAILROAD BRIDGE

6.98	11.90	902.90	0.00	0.00	903.62	.71	.12	.10	904.00
3420.	0.	3420.	0.	0.	505.	0.	58.	12.	901.00
.17	0.00	6.77	0.00	.075	.045	.075	.048	891.00	57.27
.002581	60.	60.	60.	2	0	0	0.00	53.73	111.00

CCHV= .400 CEHV= .800
*SECNO 6.990

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 903.50 MAX ELLC= 914.60

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 921.50 ELREA= 921.50

6.99	11.91	902.91	0.00	0.00	903.62	.71	.00	.00	904.00
3420.	0.	3420.	0.	0.	505.	0.	58.	12.	901.00
.17	0.00	6.77	0.00	.075	.040	.075	.048	891.00	57.26
.002038	1.	1.	1.	0	0	0	0.00	53.74	111.00

*SECNO 7.010

3370 NORMAL BRIDGE,NRD= 7 MIN ELTRD= 903.50 MAX ELLC= 914.60

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 921.50 ELREA= 921.50

7.01	11.98	902.98	0.00	0.00	903.68	.70	.06	.00	904.00
3420.	0.	3420.	0.	0.	509.	0.	58.	12.	901.00
.17	0.00	6.73	0.00	.075	.040	.075	.048	891.00	57.21
.001995	28.	28.	28.	0	0	0	0.00	53.79	111.00

CCHV= .250 CEHV= .450
*SECNO 7.020

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 921.50 ELREA= 921.50

7.02	11.98	902.98	0.00	0.00	903.68	.70	.00	.00	904.00
3420.	0.	3420.	0.	0.	509.	0.	58.	12.	901.00
.17	0.00	6.72	0.00	.075	.045	.075	.048	891.00	57.21
.002519	1.	1.	1.	0	0	0	0.00	53.79	111.00

CCHV= .100 CEHV= .300
*SECNO 7.100
3280 CROSS SECTION 7.10 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
7.10	13.88	903.58	0.00	0.00	903.81	.23	.08	.05	896.50
3420.	471.	2949.	0.	335.	720.	0.	59.	12.	902.80
.17	1.41	4.09	0.00	.075	.045	.075	.048	889.70	121.81
.000748	60.	60.	60.	2	0	0	0.00	168.19	290.00

*SECNO 8.000

8.00	12.92	903.92	0.00	0.00	904.21	.29	.39	.02	898.50
3420.	193.	2966.	261.	177.	648.	204.	71.	14.	897.00
.21	1.09	4.58	1.28	.075	.045	.075	.047	891.00	932.90
.000805	500.	500.	500.	2	0	0	0.00	177.97	1110.87

*SECNO 8.900

8.90	13.07	904.07	0.00	0.00	904.34	.27	.12	.00	898.50
3420.	177.	3092.	151.	166.	708.	143.	75.	14.	898.50
.22	1.06	4.37	1.06	.075	.045	.075	.047	891.00	1370.15
.000741	160.	160.	160.	1	0	0	0.00	171.15	1541.30

CCHV= .300 CEHV= .500
*SECNO 8.980
3280 CROSS SECTION 8.98 EXTENDED .56 FEET

*** D/S FACE JACKSON ST. BRIDGE

8.98	12.56	904.16	0.00	0.00	904.52	.36	.14	.04	900.50
3420.	163.	3093.	164.	150.	614.	152.	78.	15.	900.50
.23	1.09	5.04	1.07	.075	.045	.075	.047	891.60	35.00
.001134	150.	150.	150.	2	0	0	0.00	199.00	234.00

SPECIAL BRIDGE

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.32	2.60	182.00	49.00	0.00	410.00	0.00	891.60	891.60

*SECNO 9.020
3280 CROSS SECTION 9.02 EXTENDED 1.45 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	CPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
905.58	904.64	0.00	349.	3084.	410.	436.	900.50	904.50

9.02	13.45	905.05	0.00	0.00	905.32	.26	.80	0.00	900.50
3420.	244.	2929.	247.	213.	662.	219.	79.	15.	900.50
.23	1.14	4.42	1.13	.075	.045	.075	.047	891.60	35.00
.000789	33.	33.	33.	2	0	2	0.00	199.00	234.00

CCHV= .400 CEHV= .800
*SECNO 9.500
3280 CROSS SECTION 9.50 EXTENDED .15 FEET

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALCB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	ICC	ICCNT	CORAR	TOPWID	ENDST
9.50	13.15	905.15	0.00	0.00	905.38	.23	.05	.01	898.00
3420.	149.	3269.	1.	128.	831.	3.	81.	15.	903.90
.23	1.17	3.93	.36	.075	.045	.075	.047	892.00	550.00
.000641	70.	70.	70.	2	0	0	0.00	115.20	665.20

*SECNO 9.980
3280 CROSS SECTION 9.98 EXTENDED .68 FEET

*** D/S FACE RAILROAD BRIDGE

9.98	11.98	905.18	0.00	0.00	905.42	.24	.03	.01	900.40
3420.	98.	3184.	138.	96.	779.	134.	82.	16.	900.40
.24	1.02	4.09	1.03	.075	.045	.075	.047	893.20	75.00
.000723	50.	50.	50.	0	0	0	0.00	150.00	225.00

SPECIAL BRIDGE

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.25	1.47	2.80	150.00	66.00	6.00	430.00	0.00	893.20	893.20

*SECNO 10.020
3280 CROSS SECTION 10.02 EXTENDED 1.35 FEET

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
906.62	905.47	.05	792.	2655.	430.	432.	900.40	904.50
10.02	12.64	905.84	0.00	0.00	906.05	.21	.63	0.00	900.40
3420.	124.	3120.	176.	119.	822.	166.	82.	16.	900.40
.24	1.05	3.79	1.06	.075	.045	.075	.047	893.20	75.00
.000579	21.	21.	21.	2	0	2	0.00	150.00	225.00

CCHV= .100 CEHV= .300
*SECNO 10.100
3280 CROSS SECTION 10.10 EXTENDED 5.08 FEET

10.10	13.87	905.87	0.00	0.00	906.08	.21	.03	.00	904.50
3420.	0.	3420.	0.	1.	931.	0.	84.	16.	900.80
.24	.33	3.67	.33	.075	.045	.075	.047	892.00	525.00
.000587	50.	50.	50.	0	0	0	0.00	91.00	620.00

*SECNO 11.000
3280 CROSS SECTION 11.00 EXTENDED 1.55 FEET

11.00	13.55	906.55	0.00	0.00	906.69	.14	.60	.01	899.00
3420.	587.	2537.	296.	545.	738.	257.	119.	20.	897.80
.37	1.08	3.44	1.15	.075	.045	.075	.047	893.00	970.00
.000399	1250.	1250.	1250.	2	0	0	0.00	230.00	1200.00

*SECNO 12.000
3280 CROSS SECTION 12.00 EXTENDED 3.25 FEET

SECNO	DEPTH	CWSEL	CRITWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLCB	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
12.00	11.05	908.25	0.00	0.00	908.44	.19	1.74	.01	900.60
3420.	1033.	2143.	243.	646.	503.	188.	207.	35.	904.00
.59	1.60	4.26	1.30	.095	.055	.095	.049	897.20	450.00
.001281	2650.	2650.	2650.	2	0	0	0.00	250.00	700.00

*SECNO 13.000
3280 CROSS SECTION 13.00 EXTENDED 1.23 FEET

13.00	11.63	911.23	0.00	0.00	911.45	.22	3.00	.01	906.00
3420.	374.	2618.	428.	323.	623.	336.	289.	51.	905.00
.81	1.16	4.20	1.27	.085	.050	.085	.050	899.60	850.00
.000938	2750.	2750.	2750.	2	0	0	0.00	250.00	1100.00

Not True

*SECNO 14.000
3280 CROSS SECTION 14.00 EXTENDED 1.15 FEET

14.00	11.55	911.85	0.00	0.00	912.07	.22	.62	.00	906.70
3420.	366.	2634.	421.	315.	618.	328.	308.	55.	905.70
.86	1.16	4.26	1.28	.085	.050	.085	.050	900.30	850.00
.000974	650.	650.	650.	2	0	0	0.00	250.00	1100.00



1) COUNTY: LENAWEE

2) STUDY NAME: HUDSON, CITY OF

3) WATERCOURSE: BEAN CREEK

4) DOCUMENT TYPE: 1985 DNR ~~FLOOD~~ HYDRAULICS



HUDSON

DNR ✓

Use these results

BEM 1/22/85

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.1    $NCAT LAY=NS  PW=4M(ID=ASNL,PW=IVE,ROUTE=HUBS)
.2    4CHANGE,P12259S5,RG3,C312'CC,3C495.
.3    PW=VAN
.4    ATTACH,HEC2,IPSHEC2.
.5    SLT.LOAD.
.6    HEC2.
.7    *EOR
1.5   C
2     C       5
3     C  5.58 *** D/S FACE MECHANIC ST. BRIDGE
4     C  5.93 *** D/S FACE MAIN ST. ELEC LOWERED TO 9J1.
5     C  6.53 *** D/S FACE RAILROAD BRIDGE
6     C  8.98 *** D/S FACE JACKSON ST. BRIDGE
7     C  9.98 *** D/S FACE RAILROAD BRIDGE
8     T1        HUD-FIA H-4765
9     T2        CITY OF HUDSON FIS
10    J3        DEAN CREEK  10 YR FLOW
11    J1    -1        2                                        -1          888.0
12    J2     1                 -1
12.02 J3    200         6      150
12.03 NC   .035      .045     .050       .1       .3
12.04 E1                                                  1.4
12.09 QA                3     2270      3180     3530     4900     3530
12.1  X1   1.9         11      490       600        J        0        0
12.11 GR   960.         0    890.5        20     888.      400     886.      490     881.      540
12.111 GR  880.6       555     881.       570     888.      560     890.      600     890.     1110
12.112 GR  900.        1200
12.115 QT     5        2175    3050      3420     4750     3420
12.12 X1   1.95        7       410       550     2100     2100     2100
12.13 GR   890.        0      890.       330     888.      410     883.      420.    884.      450
12.14 GR   888.       550     892.       900
12.15 X1     2.0       11      540       585     1450     1450     1450
12.16 GR   895.1       0     891.5       250    889.5      540   886.25      550     885.      555
12.17 GR   884.8      560     885.       575   886.25      580    889.5      585    890.6      640
12.18 GR   887.5      655
15    X1     2.5       11      570       660     1750     1750     1750              -0.8
16    GR   905.        J      895.        25     895.      570    892.5      600     888.      615
17    GR   887.2      620     887.       630    887.2      642     888.      645     894.      660
18    GR   895.       690
19    X1     3.0        0                         700      760      700               0.8
20    X1     3.5        9      510        552     1300     1300     1300
21    GR   895.5      450     895.       500    890.5      510    889.7      515     889.      525
22    GR   889.7      535     890.5      540    894.7      552     895.      600
23    NC    .075      .075     .045        .3       .5
24    X1   3.58        7       35         89      132      132      132
25    X3     10                                                  903.7    903.7
26    GR   902.        15     899.        35    890.5      35.1    889.8       65    890.5      88.5
27    GR   895.        85     902.       115
28    SB       0     1.50     2.6        100       54        0      500        0     889.8     899.8
29    X1   4.02        0                          37       37       37
30    X2                          1     899.      902.
31    X3       10                                                  902.5    902.5
32    X1    4.7        10      285        345       32       32       32
33    GR   960.        245     960.       250    896.5      289    890.4      298     889.      300
34    GR   833.4       320     885.       330    890.4      335    896.3      345     900.      370
34.05 X1    4.5        10      289        345       50       50       50
34.1  GR   895.5      175     895.5      176    895.5      289    890.4      298     889.      300
34.2  GR   833.4      320     885.       330    890.4      335    896.3      345     900.      370
34.5  NC                                 0.1      0.3
35    X1    5.5        15      20         85      500      500      500
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36	GR	910.	0	902.5	20	895.	25	891.4	35	889.	40
37	GR	886.8	50	889.	65	891.4	70	901.2	85	901.5	150
38	NC				.3	.5					
39	X1	5.98	9	125	185	150	150	150			
40	X3	10							903.6	903.0	
41	GR	903.5	100	902.	125	894.	126	890.5	140	890.	160
42	GR	893.5	176	894	184	902.	185	903.5	200		
43	SB	0	1.52	2.6	100	60	0	600	0	890.0	890.0
44	X1	6.02	0			47	47	47			
45	X2			1	901.0	903.5					
46	X3	10							903.5	903.5	
47	X1	6.5	8	150	260	75	75	75			
48	GR	907	190	891.6	215	890	220	889	230	890	245
49	GR	891.6	250	904.3	260	905.	290				
50	NC				.25	.45					
51	X1	6.98	7	60	170	60	60	60	.91		
52	X3	10							921.5	903.5	
53	GR	904.	20	904.	60	892.5	70	891.	90	892.5	110
54	GR	901.	120	903.5	170	902.7	260				
54.5	NC			0.04	0.4	0.8					
55	X1	6.99	0			1	1	1			
56	X3	10							921.5	903.5	
57	BT	7	20	921.5	0	50	921.5	904.	70	921.5	910.
58	BT	30	921.5	914.6	110	921.5	910.	120	921.5	901.	170.
59	BT	903.5	0								
60	X1	7.01	0			28	28	28			
61	X2							1			
62	X3	10							921.5	903.5	
62.5	NC			0.045	0.25	0.45					
63	X1	7.02	0			1	1	1			
63.2	X3	10							921.5	903.5	
63.5	NC				0.1	0.3					
64	X1	7.1	10	220	290	60	60	60			
65	GR	898.5	150	897.5	175	896.5	220	891.6	230	890.3	235
66	GR	889.7	250	890.3	260	891.6	265	902.8	290	903.5	360
67	X1	8.0	9	998	1052	500	500	500			
68	GR	900.7	830	898.5	998	892.	1005	891.5	1010	891.	1030
69	GR	891.2	1045	892.	1050	897.	1052	903.	1200		
70	X1	8.9	9	1430	1490	160	160	160			
71	GR	901.	1270	898.5	1430	892.3	1440	891.5	1450	891.	1465
72	GR	891.5	1480	892.	1487	898.5	1490	904.	1600		
73	NC				0.3	0.5					
74	X1	8.96	9	206	260	150	150	150			
75	X3	10							904.0	904.0	
76	GR	904.0	50	900.5	206	895.7	207	892.	220	891.6	230
77	GR	892.	250	894.9	259	900.5	260	904.	350		
78	SB	0	1.52	2.6	300	49	0	410	0	891.6	891.6
79	X1	9.02	0			33	33	33			
80	X2			1	900.5	904.0					
81	X3	10							904.0	904.0	
82	NC				0.4	0.8					
83	X1	9.5	10	585	660	70	70	70			
84	GR	898.5	400	898.	585	896.	600	892.5	605	892.2	610
85	GR	892.	625	892.2	645	892.5	650	903.9	660	904	770
86	X1	9.98	7	210	276	50	50	50			
87	X3	10							902.7	902.7	
88	GR	904.0	50	900.4	210	893.4	210.1	893.2	245	893.5	275
89	GR	900.4	276	904.0	450						
90	SB	1.25	1.62	2.8	400	63	6	430	0	893.2	893.2
91	X1	10.02	0			21	21	21			

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  92      X2                              1    900.4    904.0
  93      CO    10                                                                  904.0    904.0
  94      NC                                     0.1      0.3
  95      X1   10.1        5      530      620       50       50                                    1
 95.1     XS      10
 95.2     X4       2   898.5      470      904.     490
  96      GR  898.5      300    904.0      530    895.5      560    892.5      560    892.0      565
  97      GR   892.      585     892.      600    852.5      605    900.8      620
 97.2     X1   10.5        7     1080     1150      400      400      400
 97.4     GR  905.5      750     900.      760     900.     1080    892.4     1110    892.4     1140
 97.6     GR   898.     1150     905.     1200
  98      X1     11       10     1050     1150      850      850                                    1
 98.5     X4       2   902.5      210    902.5      500
  99      GR  905.0      200     899     1090      894     1100    893.3     1105     893     1120
 100      GR  893.3     1135     894     1140    897.8     1150     898     1220     905.     1250
100.2     X1   11.5        5      550      670      900      900      900
100.4     GR   904.        0     903.        5     903.      590    894.4      600    894.4      650
100.6     GR   900.      670     900.      800     904.      830     905.      831
 101      NC   .095     .095     .095
 102      X1     12        8      600      650     1750     1750     1750
 103      GR  907.5      120     902.      130    900.5      600    897.4      620    897.2      635
 104      GR  897.4      647     904      650    904.5     1000
 105      NC   .085     .085     .050
105.2     X1   12.5        7      600      660     2150     2150     2150
105.4     GR   908.        0     905.        5     905.      650     899.      610     899.      650
105.6     GR   904.      660     910.      680
 106      X1     13       10      950     1010      600      600      600
 107      GR   908.      170     906      950    900.8      599    899.8      960    899.6      980
 108      GR  899.8      595    900.8     1000      905     1010      907     1170    907.5     1320
108.5     X1     14        0                       650      650      650
 109      EJ
 115      T1        HUD-FIA H-4705
 116      T2        CITY OF HUDSON FLS
 117      T3        BEAN CREEK  50 YR FLOW
 118      J1    -1        3                                                           889.0
 119      J2     2                 -1
119.1     T1        HUD-FIA H-4705
119.2     T2        CITY OF HUDSON FLS
119.3     T3        BEAN CREEK  100 YR FLOW
119.4     J1    -1        4                                        -1                 890.0
119.5     J2     3                 -1
 120      T1        HUD-FIA H-4705
 121      T2        CITY OF HUDSON FLS
 122      T3        BEAN CREEK  500 YR FLOW
 123      J1    -1        5                                                           891.0
 124      J2    15                -1
 125
 126
 127
 128      ER
END OF FILE
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**********************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CODE -  01
  MODIFICATION -  50,51,52
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

PEAK CREEK 10 YR FLOW

SUMMARY PRINTOUT TABLE 150

SECNO	XLOB	ELTRD	CLOB	ELMIN	Q	CHSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
1.900	0.00	0.00	0.00	880.60	2270.00	888.00	0.00	888.32	26.92	4.60	566.00	437.52
1.900	0.00	0.00	0.00	880.60	3180.00	889.00	0.00	889.36	28.90	5.02	827.00	591.57
1.900	0.00	0.00	0.00	880.60	3530.00	890.00	0.00	890.23	18.75	4.25	1250.00	815.13
1.900	0.00	0.00	0.00	880.60	4900.00	891.00	0.00	891.19	14.87	4.19	2325.76	1270.52
1.990	2100.00	0.00	0.00	883.00	2170.00	890.81	0.00	890.88	6.69	2.35	1513.69	838.76
1.990	2100.00	0.00	0.00	883.00	3050.00	891.70	0.00	891.77	5.89	2.44	2260.92	1256.56
1.990	2100.00	0.00	0.00	883.00	3420.00	892.10	0.00	892.17	5.30	2.41	2620.38	1485.66
1.990	2100.00	0.00	0.00	883.00	4750.00	892.92	0.00	892.99	5.46	2.64	3353.51	2033.50
2.000	1450.00	0.00	0.00	884.80	2170.00	892.34	0.00	892.56	22.94	4.72	955.33	453.11
2.000	1450.00	0.00	0.00	884.80	3050.00	893.09	0.00	893.30	22.11	4.99	1310.08	648.68
2.000	1450.00	0.00	0.00	884.80	3420.00	893.37	0.00	893.58	21.51	5.06	1460.02	737.38
2.000	1450.00	0.00	0.00	884.80	4750.00	894.21	0.00	894.43	21.15	5.39	1927.59	1032.86
2.500	1750.00	0.00	0.00	886.20	2170.00	895.24	0.00	895.35	11.61	3.11	1418.99	636.74
2.500	1750.00	0.00	0.00	886.20	3050.00	895.88	0.00	895.98	11.14	3.27	1969.28	913.98
2.500	1750.00	0.00	0.00	886.20	3420.00	896.11	0.00	896.21	11.00	3.34	2172.85	1030.98
2.500	1750.00	0.00	0.00	886.20	4750.00	896.87	0.00	896.97	10.52	3.52	2840.10	1464.25
3.000	700.00	0.00	0.00	887.00	2170.00	896.05	0.00	896.16	11.49	3.10	1426.35	640.05
3.000	700.00	0.00	0.00	887.00	3050.00	896.66	0.00	896.77	11.34	3.30	1954.48	905.77
3.000	700.00	0.00	0.00	887.00	3420.00	896.89	0.00	896.99	11.28	3.37	2151.72	1018.49
3.000	700.00	0.00	0.00	887.00	4750.00	897.62	0.00	897.73	11.03	3.59	2791.13	1429.97
3.900	1300.00	0.00	0.00	889.00	2170.00	897.98	0.00	898.17	20.58	4.81	639.57	478.34
3.900	1300.00	0.00	0.00	889.00	3050.00	898.60	0.00	899.03	26.81	5.86	748.17	589.07
3.900	1300.00	0.00	0.00	889.00	3420.00	898.86	0.00	899.34	29.38	6.27	786.90	630.98
3.900	1300.00	0.00	0.00	889.00	4750.00	899.64	0.00	900.24	38.45	7.64	904.80	766.04
3.980	132.00	0.00	0.00	889.80	2170.00	898.10	0.00	898.50	20.71	5.07	427.83	476.86
3.980	132.00	0.00	0.00	889.80	3050.00	898.87	0.00	899.52	30.93	6.50	469.40	548.43
3.980	132.00	0.00	0.00	889.80	3420.00	899.14	0.00	899.91	35.42	7.07	483.86	574.65
3.980	132.00	0.00	0.00	889.80	4750.00	899.95	0.00	901.20	51.62	8.98	528.76	661.11
4.020	37.00	902.00	899.00	890.30	2170.00	898.19	0.00	898.58	19.96	5.01	433.07	485.72
4.020	37.00	902.00	899.00	890.30	3050.00	899.11	0.00	899.73	28.25	6.31	483.40	573.80
4.020	37.00	902.00	899.00	890.30	3420.00	899.52	0.00	900.23	30.92	6.77	505.12	615.08
4.020	37.00	902.00	899.00	890.30	4750.00	901.00	0.00	902.03	37.55	8.12	585.11	775.16

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	898.27	C.CC	898.64	15.40	4.88	470.50	553.02
4.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	899.29	0.00	899.83	19.59	5.97	570.51	689.06
4.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	899.74	C.CC	900.34	20.47	6.31	620.94	755.89
4.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	901.51	C.00	902.21	19.91	6.99	834.21	1064.56
4.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	898.57	C.CC	898.75	8.48	3.76	828.67	745.04
4.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	899.77	0.00	899.99	9.08	4.26	1056.76	1012.15
4.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	900.29	C.00	900.52	9.00	4.40	1157.35	1140.29
4.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	902.16	0.00	902.41	8.13	4.65	1522.39	1665.77
5.900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.02	C.CC	899.38	16.43	4.83	449.09	535.37
5.900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.22	0.00	900.75	21.14	5.84	521.91	663.38
5.900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	900.71	C.CC	901.30	22.60	6.19	552.63	719.44
5.900	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	902.45	0.00	903.21	24.11	7.03	736.67	967.36
5.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.31	C.CC	899.62	13.86	4.47	485.07	582.90
5.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.60	0.00	901.06	17.61	5.43	561.83	726.71
5.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.12	C.CC	901.64	18.88	5.77	592.79	787.11
5.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	902.85	0.00	903.57	22.32	6.82	696.23	1005.42
6.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.36	C.CC	899.69	13.50	4.43	489.29	590.58
6.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.77	0.00	901.21	16.70	5.33	571.95	746.30
6.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.40	0.00	901.89	17.38	5.61	609.50	820.25
6.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	903.62	C.CC	904.24	17.52	6.36	777.74	1134.68
6.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.44	C.CC	899.88	20.21	5.31	408.93	482.75
6.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.84	C.CC	901.45	24.58	6.27	486.58	615.24
6.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.47	0.00	902.13	25.27	6.54	523.14	680.29
6.500	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	903.69	C.CC	904.49	25.73	7.20	659.67	936.50
6.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.46	0.00	900.15	38.46	6.66	325.93	349.92
6.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.86	C.CC	901.78	43.17	7.69	396.56	464.20
6.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.51	0.00	902.47	50.15	7.90	432.77	482.95
6.980	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	903.85	C.CC	904.74	50.69	7.55	629.23	667.15
6.990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.47	0.00	900.16	30.35	6.65	326.08	393.91
6.990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	900.86	C.CC	901.78	34.07	7.69	396.73	522.54
6.990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.51	C.CC	902.48	39.61	7.90	433.00	543.43
6.990	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	903.85	0.00	904.76	41.75	7.64	621.46	735.14
7.010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.58	C.CC	900.25	28.99	6.55	331.27	403.03
7.010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	901.00	0.00	901.89	32.40	7.55	404.06	535.83
7.010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.69	C.CC	902.61	38.76	7.69	444.53	549.35
7.010	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	904.02	0.00	904.89	39.29	7.50	633.70	757.80
7.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	899.59	C.CC	900.25	36.50	6.54	331.88	359.20
7.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	901.01	0.00	901.89	40.95	7.55	404.24	476.62
7.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	901.70	C.CC	902.61	49.03	7.69	444.78	488.44
7.020	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	904.08	C.CC	904.90	45.31	7.29	651.89	705.63
7.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	2170.00	900.19	C.CC	900.40	9.97	3.91	688.93	687.28
7.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3050.00	901.82	0.00	902.06	9.67	4.23	911.53	980.88
7.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	3420.00	902.55	0.00	902.79	9.20	4.29	1012.17	1127.66
7.100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	4750.00	904.80	C.CC	905.05	7.63	4.49	1443.13	1719.19

SLOPE	AREA	CLIFF	TIME	H P	L	CHSEL	CRICS	EG	LCK*S	VCH	AREA	.OLK
9.000	700.00	0.00	0.00	891.00	2170.00	900.67	0.00	900.89	9.53	4.03	817.17	703.04
9.000	500.00	0.00	0.00	891.00	3050.00	902.30	0.00	902.48	7.34	3.97	1362.06	1126.11
9.000	400.00	0.00	0.00	891.00	3420.00	903.01	0.00	903.18	6.35	3.86	1619.42	1356.84
9.000	300.00	0.00	0.00	891.00	4750.00	905.23	0.00	905.35	4.34	3.60	2438.05	2280.91
8.900	100.00	0.00	0.00	891.00	2170.00	900.82	0.00	901.04	9.20	3.93	740.52	715.38
8.900	100.00	0.00	0.00	891.00	3050.00	902.40	0.00	902.61	7.82	4.06	1185.89	1090.53
8.900	100.00	0.00	0.00	891.00	3420.00	903.10	0.00	903.29	6.98	4.01	1357.40	1294.22
8.900	100.00	0.00	0.00	891.00	4750.00	905.28	0.00	905.44	5.13	3.88	2108.49	2096.45
8.980	150.00	0.00	0.00	891.00	2170.00	900.92	0.00	901.30	17.20	4.94	438.90	523.24
8.980	150.00	0.00	0.00	891.00	3050.00	902.42	0.00	902.95	19.94	5.87	519.75	683.10
8.980	150.00	0.00	0.00	891.00	3420.00	903.07	0.00	903.66	20.44	6.17	554.70	756.44
8.980	150.00	0.00	0.00	891.00	4750.00	905.28	0.00	905.65	11.80	5.48	1420.82	1383.07
9.020	50.00	904.00	900.50	891.00	2170.00	901.23	0.00	901.58	15.28	4.76	455.63	555.14
9.020	50.00	904.00	900.50	891.00	3050.00	903.27	0.00	903.73	15.26	5.39	566.00	780.65
9.020	50.00	904.00	900.50	891.00	3420.00	904.15	0.00	904.46	10.42	4.83	1080.61	1059.51
9.020	50.00	904.00	900.50	891.00	4750.00	905.83	0.00	906.12	9.29	5.00	1583.98	1558.39
9.500	70.00	0.00	0.00	892.00	2170.00	901.66	0.00	901.74	4.82	2.72	1202.03	988.92
9.500	70.00	0.00	0.00	892.00	3050.00	903.85	0.00	903.92	3.28	2.59	1769.10	1683.96
9.500	70.00	0.00	0.00	892.00	3420.00	904.52	0.00	904.60	3.09	2.63	2008.20	1946.76
9.500	70.00	0.00	0.00	892.00	4750.00	906.16	0.00	906.24	3.11	2.90	2612.11	2692.96
9.980	50.00	0.00	0.00	893.20	2170.00	901.66	0.00	901.91	11.19	3.97	546.35	648.74
9.980	50.00	0.00	0.00	893.20	3050.00	903.85	0.00	904.04	7.34	3.80	1241.73	1125.77
9.980	50.00	0.00	0.00	893.20	3420.00	904.53	0.00	904.70	6.46	3.72	1512.28	1345.48
9.980	50.00	0.00	0.00	893.20	4750.00	906.16	0.00	906.32	5.62	3.80	2166.92	2002.90
10.020	21.00	904.00	900.40	893.20	2170.00	902.08	0.00	902.30	9.56	3.78	574.00	701.93
10.020	21.00	904.00	900.40	893.20	3050.00	904.52	0.00	904.66	5.16	3.32	1509.54	1343.06
10.020	21.00	904.00	900.40	893.20	3420.00	904.99	0.00	905.13	5.08	3.35	1658.84	1516.90
10.020	21.00	904.00	900.40	893.20	4750.00	906.36	0.00	906.51	5.15	3.67	2247.14	2093.72
10.100	50.00	0.00	0.00	892.00	2170.00	902.15	0.00	902.35	8.95	3.56	609.91	725.40
10.100	50.00	0.00	0.00	892.00	3050.00	904.63	0.00	904.68	2.76	2.27	1961.36	1835.94
10.100	50.00	0.00	0.00	892.00	3420.00	905.10	0.00	905.16	2.84	2.37	2111.10	2028.87
10.100	50.00	0.00	0.00	892.00	4750.00	906.45	0.00	906.54	3.10	2.78	2545.45	2697.57
10.500	400.00	0.00	0.00	892.40	2170.00	902.52	0.00	902.60	4.15	2.66	1453.45	1060.55
10.500	400.00	0.00	0.00	892.40	3050.00	904.74	0.00	904.78	2.26	2.30	2419.23	2028.22
10.500	400.00	0.00	0.00	892.40	3420.00	905.21	0.00	905.26	2.26	2.37	2631.07	2276.57
10.500	400.00	0.00	0.00	892.40	4750.00	906.59	0.00	906.65	2.38	2.63	3250.95	3080.82
11.000	850.00	0.00	0.00	893.00	2170.00	902.84	0.00	902.88	2.65	2.22	2243.53	1324.00
11.000	850.00	0.00	0.00	893.00	3050.00	904.90	0.00	904.92	1.10	1.64	4387.69	2503.42
11.000	850.00	0.00	0.00	893.00	3420.00	905.37	0.00	905.39	1.04	1.64	4881.24	3361.59
11.000	850.00	0.00	0.00	893.00	4750.00	906.75	0.00	906.77	.94	1.69	6333.52	4892.26
11.500	500.00	0.00	0.00	894.40	2170.00	902.13	0.00	902.24	5.52	2.88	1128.04	923.50
11.500	500.00	0.00	0.00	894.40	3050.00	904.02	0.00	904.08	2.65	2.33	2680.82	1861.11
11.500	500.00	0.00	0.00	894.40	3420.00	904.49	0.00	904.53	2.48	2.31	3063.18	2173.84
11.500	500.00	0.00	0.00	894.40	4750.00	906.86	0.00	906.90	2.12	2.34	4159.35	3259.81

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	G	CWSEL	CRESS	EG	LOKES	VCH	AREA	.01K
12.000	1750.00	0.00	0.00	897.20	2170.00	904.38	0.00	904.42	8.41	2.49	1810.79	748.37
12.000	1750.00	0.00	0.00	897.20	3050.00	905.69	0.00	905.72	5.24	2.24	2950.63	1332.71
12.000	1750.00	0.00	0.00	897.20	3420.00	906.09	0.00	906.12	4.82	2.22	3309.40	1557.55
12.000	1750.00	0.00	0.00	897.20	4750.00	907.37	0.00	907.40	4.02	2.24	4431.81	2370.03
12.500	2150.00	0.00	0.00	897.20	2170.00	906.61	0.00	906.65	12.65	3.60	1306.61	610.01
12.500	2150.00	0.00	0.00	897.20	3050.00	907.25	0.00	907.37	11.91	3.75	1798.21	883.92
12.500	2150.00	0.00	0.00	897.20	3420.00	907.55	0.00	907.67	11.39	3.77	2002.45	1013.56
12.500	2150.00	0.00	0.00	897.20	4750.00	908.60	0.00	908.70	9.71	3.79	2705.07	1524.01
13.000	2650.00	0.00	0.00	897.20	2170.00	907.36	0.00	907.61	19.53	4.45	953.33	491.02
13.000	2650.00	0.00	0.00	897.20	3050.00	908.05	0.00	908.26	17.65	4.52	1705.94	726.00
13.000	2650.00	0.00	0.00	897.20	3420.00	908.32	0.00	908.50	16.88	4.42	2007.63	852.86
13.000	2650.00	0.00	0.00	897.20	4750.00	909.22	0.00	909.34	11.65	4.06	3049.52	1391.88
14.000	2650.00	0.00	0.00	897.20	2170.00	908.26	0.00	908.34	6.56	2.89	1938.64	822.61
14.000	2650.00	0.00	0.00	897.20	3050.00	908.88	0.00	908.95	6.83	3.02	2648.23	1166.74
14.000	2650.00	0.00	0.00	897.20	3420.00	909.09	0.00	909.16	6.89	3.09	2855.80	1303.16
14.000	2650.00	0.00	0.00	897.20	4750.00	909.84	0.00	909.91	6.66	3.22	3761.38	1841.09

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: HUDSON, CITY OF

3) WATERCOURSE: BEAN CREEK

4) DOCUMENT TYPE: REPORT

00BREAK00

FLOOD INSURANCE STUDY HYDRAULIC REPORT

PROJECT: HUD-FIA-H-4705 City of Hudson, Lenawee County, Michigan

CONSULTING FIRM: McNamee, Porter and Seeley/Smith, Hinchman and Grylls

WATERCOURSE: Bean Creek

STUDY LIMITS: Southern City Limits to Northern City Limits

DATE OF AERIAL SURVEY: 11/19/78

DATE OF LAND SURVEY: 12/28/78 - 1/24/79 McNamee, Porter and Seeley Field Crew

SOURCE OF FLOWS: Discharges were computed by MP&S/SH&G and approved by MDNR on 2/2/79

TOPOGRAPHIC INFORMATION: USGS topographic maps; contours, and 4' contour interval topo map per Abrams Aerial Survey 11/78, Scale 1"=400'

METHOD OF ANALYSIS: HEC-2 water surface profile computer program

VARIABLES AND COEFFICIENTS:

Channel "n"	.045 - .055
Overbank "n"	.075 - .095
n values thru bridges	.025 - .040
Contraction Coefficients	0.1 - 0.3
Expansion Coefficients	0.3 - 0.5

Bridge loss coefficients were chosen per References 1 and 2. XKOR computations and bridge sketches are enclosed.

PHOTOGRAPHS: Enclosed for your review, please return.

CROSS-SECTIONS: See Table 1 for cross-section description. Cross-section plots enclosed, please return.

REFERENCES:

1. "Hec-2 Water Surface Profiles", Users Manual, U.S. Army Corps of Engineers, Feb. 1972.
2. "Application of the Hec-2 Bridge Routines", U.S. Army Corps of Engineers, June 1974.
3. "Roughness Characteristics of Natural Channels", Barnes, Harry H. Jr., Geological Survey Water Supply Paper 1849.
4. "Floodway Determination using computer Program Hec-2", Bonner, Vernon R., U.S. Army Corps of Engineers Hec Training Document 5, May 1974.

HIGH WATER MARKS & CALIBRATION

Highwater information was available for a storm which occurred in March 1978. Precipitation for this storm recorded at the Hillsdale and Adrian 2NNE U.S. Weather Bureau rain gages (the City of Hudson being equidistant from each) was 1.10" and 0.80" respectively. The 10-yr 1- and 24-hr precipitation values for this area are 1.8" and 3.7" respectively per U.S. Weather Bureau which would indicate that this storm was less than a 10-yr. frequency storm. However, the WWTP superintendent indicated that the WWTP experienced a rainfall of about 6 inches, which would mean that it was a highly localized event. It was, therefore, not possible to estimate the peak discharge for this event. Therefore, the highwater information was not used for model calibration.

A sensitivity analysis was performed on the 100-yr flood by raising and lowering all Manning 'n' values by 30%. (computer output is enclosed). This sensitivity analysis resulted in water surface elevations from 1' to 1.5' different than the 100-yr water surface elevation, indicating the roughness parameter has significant impact on the computed water surface elevations. Due to lack of calibration data, the Manning 'n' values used were based on photographs, aerial data and experience in modelling similar watersheds. (See enclosed photographs).

Starting Conditions

Field information was obtained 5500 ft. downstream of the community in order to determine a good starting elevation at that location. Convergence runs (enclosed) were made for the 100-yr flow by varying the starting elevation downstream of Nelson Rd. by a maximum of 4 ft. This 4 ft. difference converged to a difference of 0.04 ft. at the community limits. Starting elevations at the community limits for the remaining flows were obtained by using the slope-area method. The value of energy slope used downstream of Nelson Rd. was between the four used for the convergence runs. (Computer output enclosed).

Designated Floodway

The floodway delineation was arrived at after studying 1) topographic information 2) aerial photographs to locate any structures or other obstructions and 3) cross-section plots. The cross-sections were modified to exclude ineffective overbank areas, based on 1) velocity considerations (overbank velocity usually greater than 1.0 fps) 2) the presence of structures and 3) expansion and contraction of 1:4 and 1:1 respectively near bridges (See enclosed 1" = 400' plan for floodway delineation).

Computer Outputs

Enclosed are complete computer outputs for, (i) 10, 50, 100 and 500 year flood plain elevations (ii) runs to determine starting elevations of the community boundary for 10, 50 and 500 yr flows (iii) convergence test for 100 yr. and (iv) sensitivity analysis for your review.

Comments

Nelson Road bridge (sections 0.99 - 1.01) was not modelled as bridge routine due to the perched condition and its location 5500 ft. downstream of the community limits.

We have not delineated the 100 yr. and 500 yr. floodplains at this time since this will be done by Abrams after DNR approval of the 100 yr. and 500 yr. elevations. We will forward delineations when available. Profiles are enclosed for the 10, 50 100 and 500 yr. computed water surface profiles.

CONSULTING ENGINEERS
ANN ARBOR MICHIGAN

COMMUNITY: CITY OF HUDSON FILE NO
COMPUTED WATERCOURSE: BEAN CREEK CHK BY DATE
DATE

TABLE 1 - SECNO

Section Types	Description
1	Surveyed (See Remarks if Other Than MPS and/or Abrams)
2	Field Survey Section, Partly modified for modelling
3	Synthetic - Repeat of nearby surveyed section with an invert adjustment (See Remarks)
4	Synthetic - Developed from topo, surveyed sections, or other information

SECTION NO.	SECTION TYPE	REMARKS
0.9	2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.
0.99	2	D/S FACE OF NELSON ROAD, SECTION DEVELOPED USING BRIDGE DETAIL.
1.01	4	U/S FACE SECTION NELSON ROAD.
1.9	2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.
1.93	3	REPEAT 1.99 - 1.6'
1.97	3	REPEAT 1.93 + 0.9'
1.99	4	VALLEY SECTION, DEVELOPED FROM TOPO AND FIELD MEASURED CHANNEL SECTION AT 2.0 AND MODIFIED FOR MODELLING TO EXCLUDE INEFFECTIVE OVER BANK AREAS.
2.0	2	VALLEY SECTION, LEFT OVERBANK MODIFIED TO EXCLUDE INEFFECTIVE AREA.
2.5	3	VALLEY SECTION, COMMUNITY BOUNDARY, REPEAT OF SECTION 3 - 0.8'.
3.0	2	VALLEY SECTION MODIFIED TO EXCLUDE

TABLE 1 - SECNO

Section Types	Description
1	Surveyed (See Remarks if Other Than MAS and/or Abrams)
2	Field Survey Section, partly modified for modelling
3	Synthetic - Repeat of nearby surveyed section with an invert adjustment (See Remarks)
4	Synthetic - Developed from topo, surveyed sections, or other information

SECTION NO.	SECTION TYPE		REMARKS
			INEFFECTIVE OVERBANK AREAS.
3.9	B	2	VALLEY SECTION MODIFIED BASED ON 4 ON 1 EXPANSION AT BRIDGE
3.98		2	D/S FACE MECHANIC STREET BRIDGE DEVELOPED FROM BRIDGE DETAIL
	C		
4.02		4	REPEAT 3.98, U/S FACE MECHANIC STREET.
4.1	D	2	VALLEY SECTION MODIFIED BASED ON 1 ON 1 CONTRACTON AT BRIDGE
5.9	E	2	VALLEY SECTION MODIFIED BASED ON 4 ON 1 EXPANSON AT BRIDGE.
5.98		2	D/S FACE MAIN STREET DEVELOPED FROM BRIDGE DETAIL
	F		
6.02		4	U/S FACE MAIN STREET REPEAT 5.98
6.5	G	2	VALLEY SECTION MODIFIED BASED ON 1 ON 1 CONTRACTON AT BRIDGE
6.98		2	D/S FACE RAIL ROAD BRIDGE DEVELOPED FROM BRIDGE DETAIL.
	H		

CONSULTING ENGINEERS
ANN ARBOR MICHIGAN

COMMUNITY: CITY OF HUDSON FILE NO
WATERCOURSE: BEAN CREEK.
COMPUTED BY DATE CHK BY DATE

TABLE 1 - SECNO

Section Types	Description
1	Surveyed (See Remarks if Other Than MRS and/or Abrams)
2	Field Survey Section, partly modified for modelling
3	Synthetic - Repeat of nearby surveyed section with an invert adjustment (See Remarks)
4	Synthetic - Developed from Topo, surveyed sections, or other information

SECTION NO.	SECTION TYPE	REMARKS
7.02	4	U/S FACE R.R BRIDGE REPEAT 6.98.
7.1	I 2	VALLEY SECTION MODIFIED BASED ON 1 ON 1 CONTRACTION AT BRIDGE
8.0	J 2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.
8.9	K 2	VALLEY SECTION MODIFIED BASED ON 4 ON 1 EXPANSION
8.98	2	D/S FACE JACKSON ST BRIDGE DEVELOPED FROM BRIDGE DETAIL.
9.02	L 4	REPEAT 8.98.
9.5	M 2	VALLEY SECTION MODIFIED BASED ON 4 ON 1 EXPANSION AT U/S BRIDGE
9.98	2	D/S FACE SECTION R.R BRIDGE DEVELOPED FROM BRIDGE DETAIL.
10.02	N 4	REPEAT 9.98
10.1	O 2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.
11	P 2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.

CONSULTING ENGINEERS
ANN ARBOR, MICHIGAN

COMMUNITY: CITY OF HUDSON FILE NO
WATERCOURSE: BEAN CREEK.
COMPUTED BY DATE CHK BY DATE

TABLE 1 - SECNO

Section Types	Description
1	Surveyed (See Remarks if Other Than MPS and/or Abrams)
2	Field Survey Section, Partly modified for modelling
3	Synthetic - Repeat of nearby surveyed section with an invert adjustment (See Remarks)
4	Synthetic - Developed from topo, surveyed sections, or other information

SECTION NO.	SECTION TYPE	REMARKS
12	2	VALLEY SECTION MODIFIED TO EXCLUDE INEFFECTIVE OVERBANK AREAS.
13	2	"
14	3	REPEAT OF 13 +0.7'

SUBJECT Hudson FIS

COMPUTED BY MPG DATE 7/19/79

XKOR COMPUTATIONS

Mechanic St Bridge Sec 3.98 D/S Face

$XKOR = K_c + K_f + 1$

R.p. Rap wingwalls, not much obstruction of main channel ⇒

use $K_c = 0.25$ *

$K_f = 29 n^2 L / R^{4/3}$ Concrete Box use $n = 0.025$

Area = 500 ft² (per MSHD drwg)

L = 37 ft

P = 50 + 2 + 10 + 2 = 120

$R = \left(\frac{500}{120}\right) = 4.17$

$K_f = 29(.025)^2(37) / (4.17)^{4/3} = 0.10$

$XKOR = 0.25 + 0.1 + 1 = 1.35$ 1.6

XKOR Computation

Main St Bridge D/S Face Sec 5.98

Square abutments use $K_c = 0.3$

$XKOR = K_c + K_f + 1$

61 Concrete box ⇒ use $n = .025$

Area = 1600 ft²

L = 47

$P = 6 \cdot 2 + 12(10) = 142$ ft ⇒ $R = \frac{600}{142} = 4.23$ ft

$K_f = 29(.025)^2 (47) / (4.23)^{4/3} = 0.12$

$XKOR = 0.3 + 0.12 + 1 = 1.42$

A. E. PORTER & SEELEY
CONSULTING ENGINEERS
ANN ARBOR, MICHIGAN

JOB Hud SHEET NO —
SUBJECT Hudson FIS FILE NO
COMPUTED BY MPG DATE 7/19/79 CHK'D BY DAT

XKOR COMPUTATION

JACKSON ST. BRIDGE D/S FACE @ Sec 8.98

$XKOR = K_e + K_f + 1.1$

Use $K_e = 0.2$ due to presence of bridge nearby u/s.

$K_f = 29(n)^2 L / R^{4/3}$

$L = 33$ ft

Use $n = 0.025$

$A = 410$ ft^2

$P = 2(54) + 8(2) = 124 \Rightarrow R = \frac{410}{124} = 3.31$

$K_f = 29(.025)^2 33 / (3.31)^{4/3} = 0.12$

$XKOR = 0.2 + 0.12 + 1.0 = 1.32$

MAXWELL PORTER & SEEMEN
CONSULTING ENGINEERS
ANN ARBOR MICHIGAN
PROJECT HUDSON FIS
COMPUTED BY MPG DATE 7/27/79 CHK BY

XKOR COMPUTATION

RAILROAD BRIDGE D/S FACE @ SR 9.98

$XKOR = K_e + K_f + 1$

use $K_e = 0.3$

$K_f = 29(n)^2 L / R^{4/3}$

use $n = .025$
$L = 21$ ft
$A = 430$ ft^2
$P = (60.2) + 7(6) = 162' \Rightarrow R = (430/162) = 2.65$
piers

$K_f = 29(.025)^2(21)/(2.65)^{4/3} = 0.11$

$XKOR = .3 + .11 + 1 = \underline{1.41}$

Increase loss coeff. to acct. for turbulence due to oblique alignment.

$K_e = 0.35$
$n = .027 \Rightarrow K_f = 29(.027)^2(21)/(2.65)^{4/3} = .12$

$XKOR = 0.35 + 0.12 + 1.0 = \underline{1.47}$

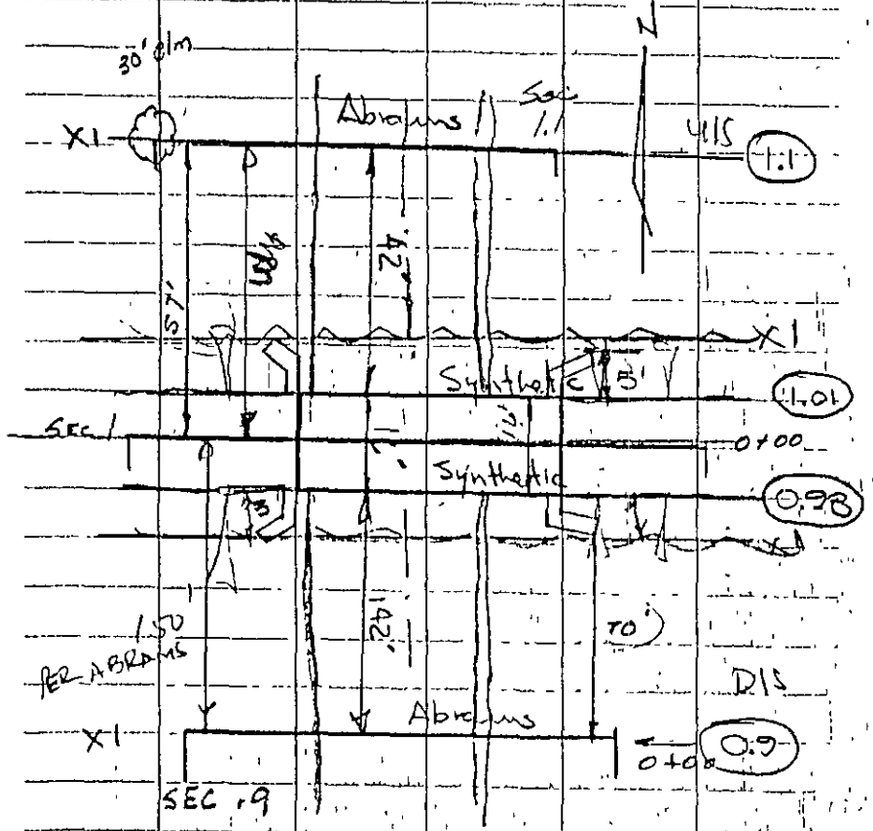
HUDSON, Village of
BEAN CREEK
BRIDGE SKETCH

HUD - FIA H 4705

K. Doyle 479/21
J. O'Neill

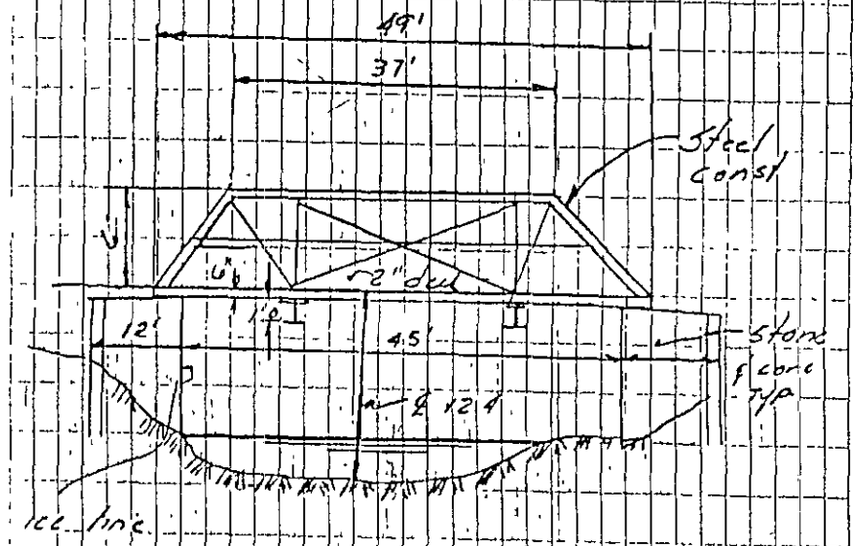
22 Jan 79
Cldy 30°F

C. Martucci



Model using valley sections only don't expect much loss @ bridge.

PLT C.M.



BRIDGE SEC 1
D/S - U/S side
Howe Truss

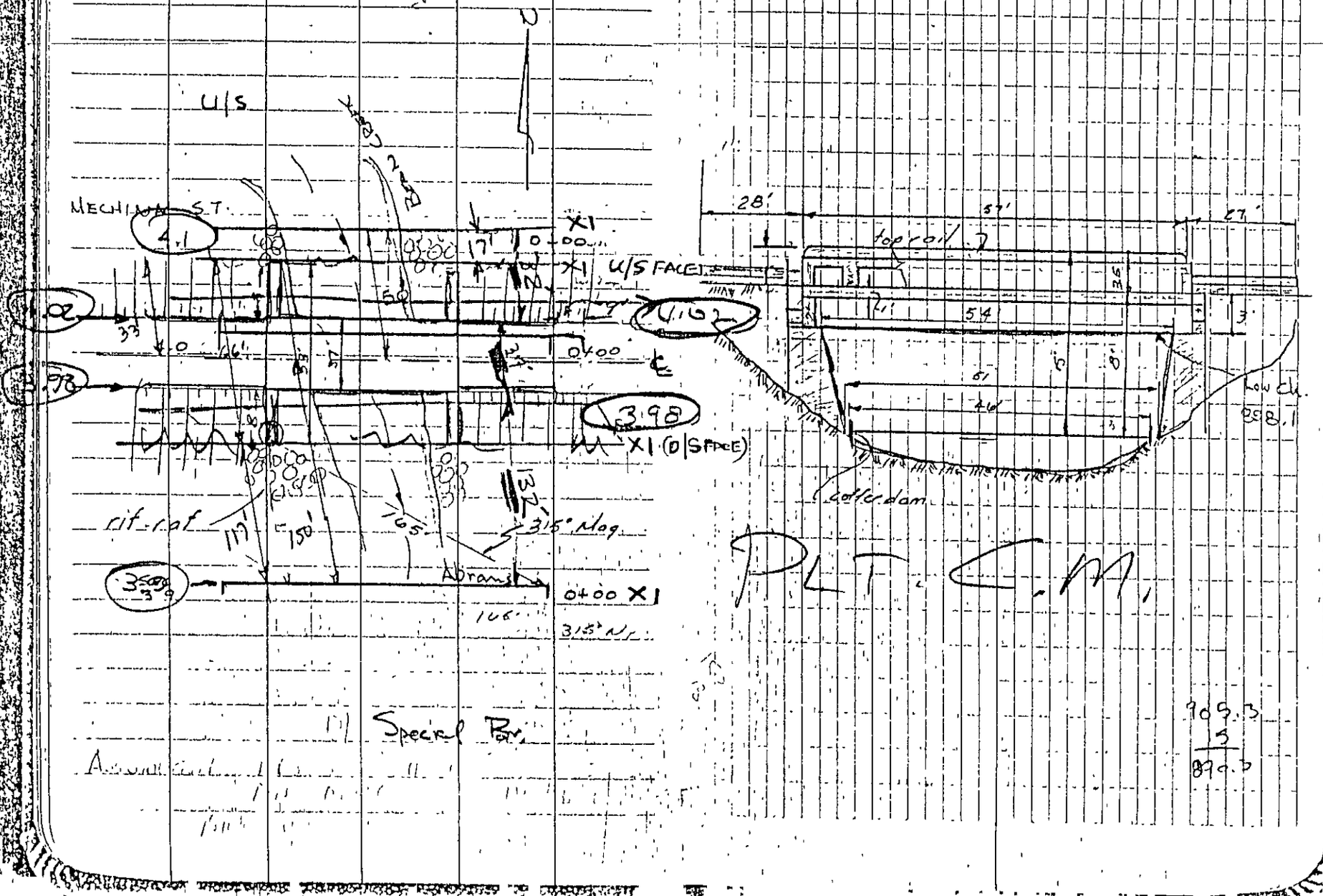
BRIDGE SKETCH

X- SECTION 4

CITY OF HUDSON

HUD-FIA. H 4705

179/30

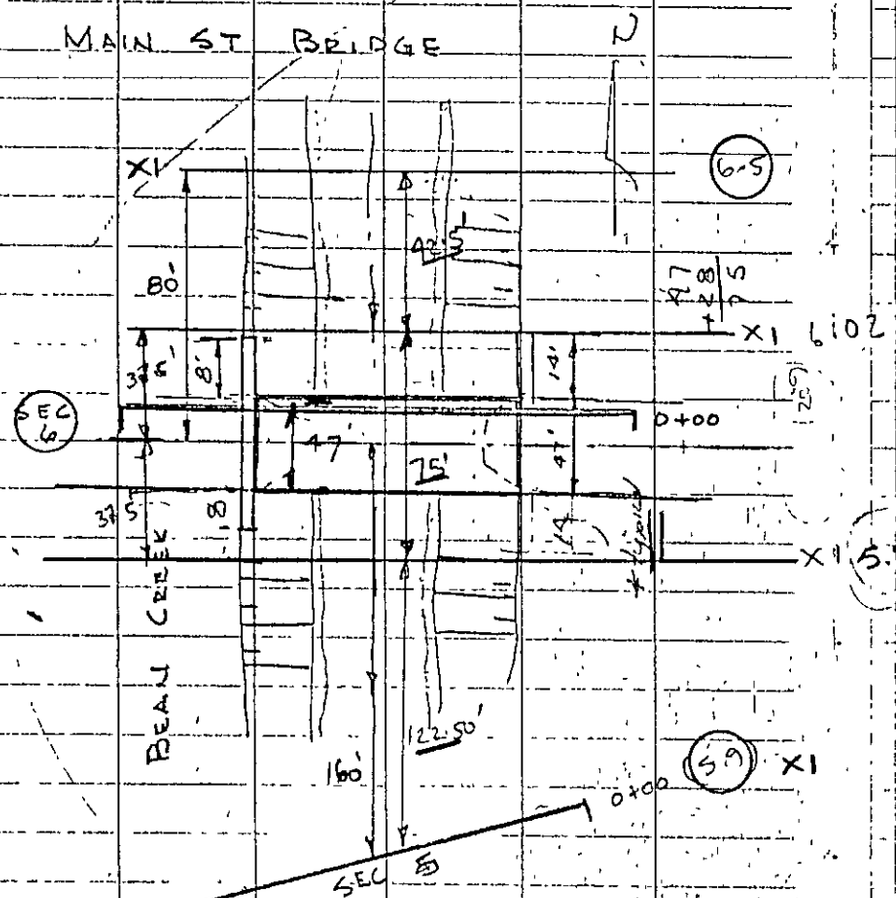


BRIDGE SKETCH SECTION 6

CITY OF HUDSON

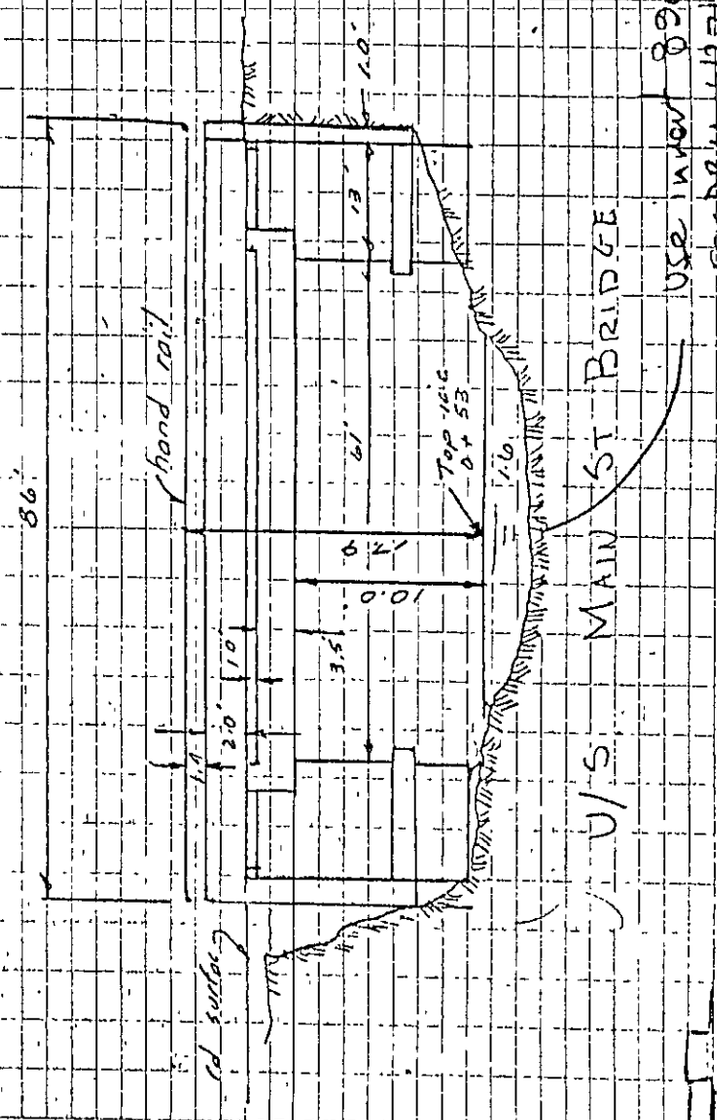
479/35

MAIN ST BRIDGE

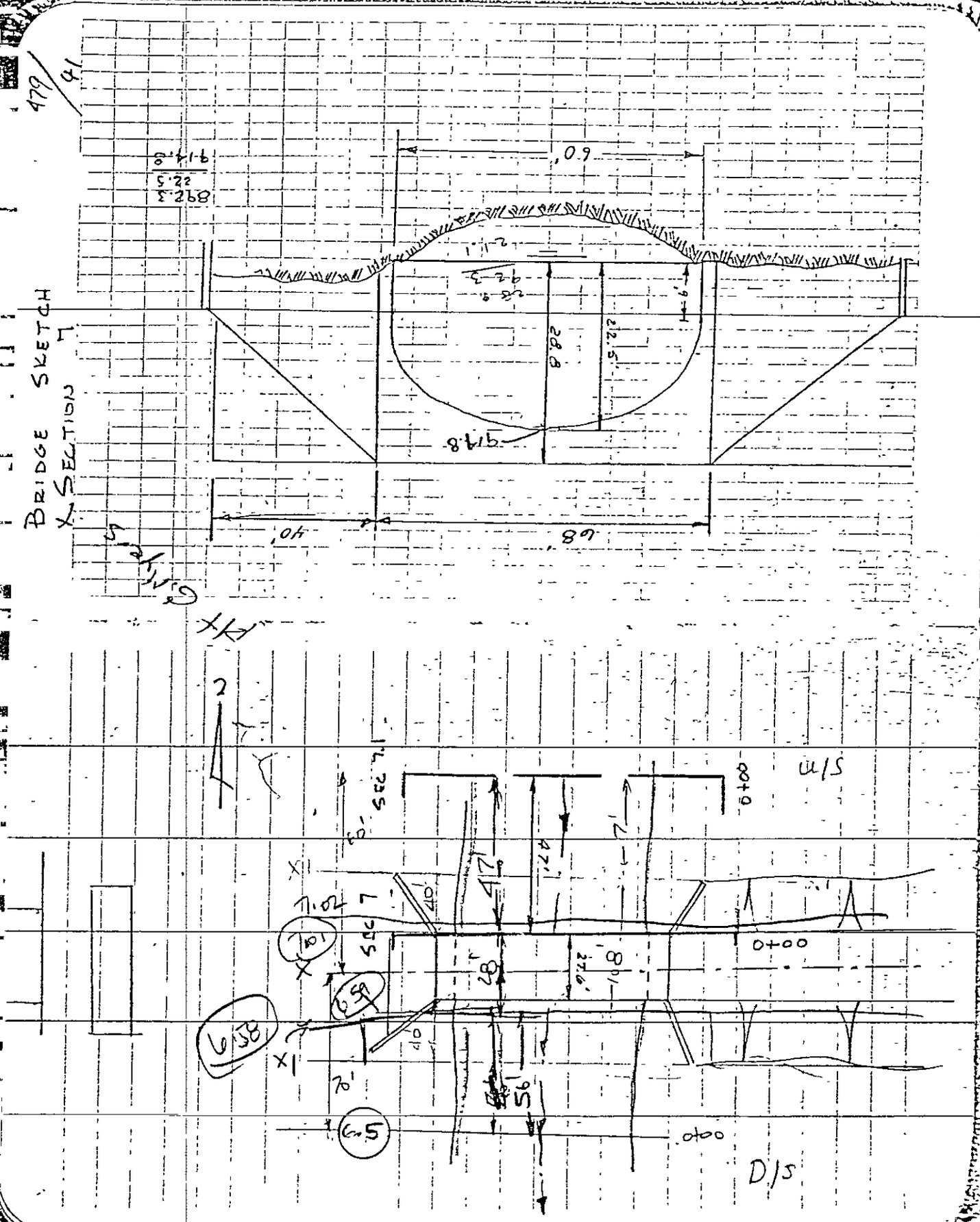


NOTE: Use Sec 5 for D/S sec. of 6

Pt G. Myers



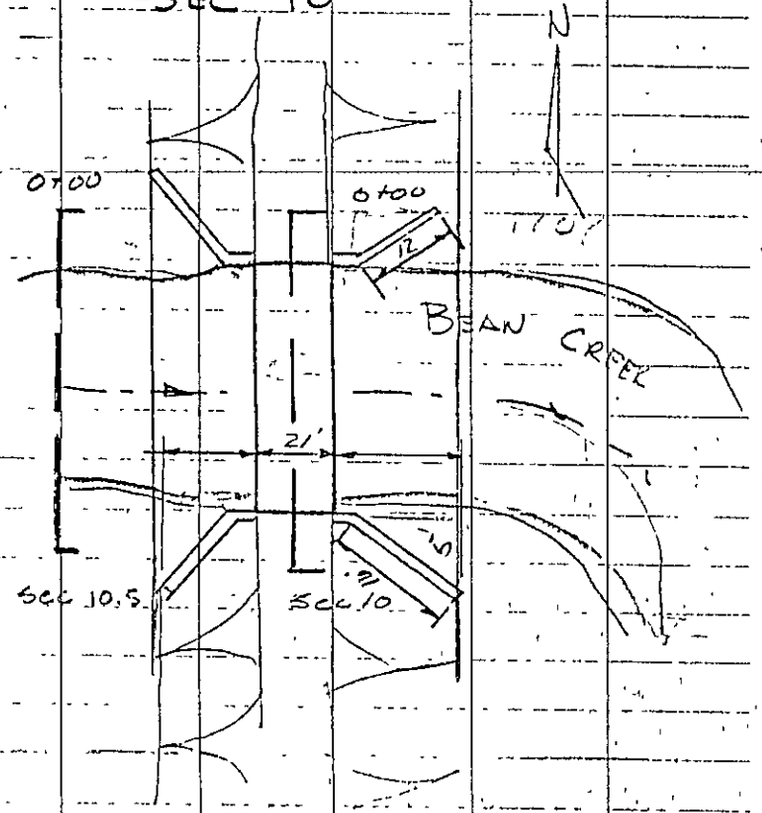
Use invert 890.0 per DRM 6/27/79

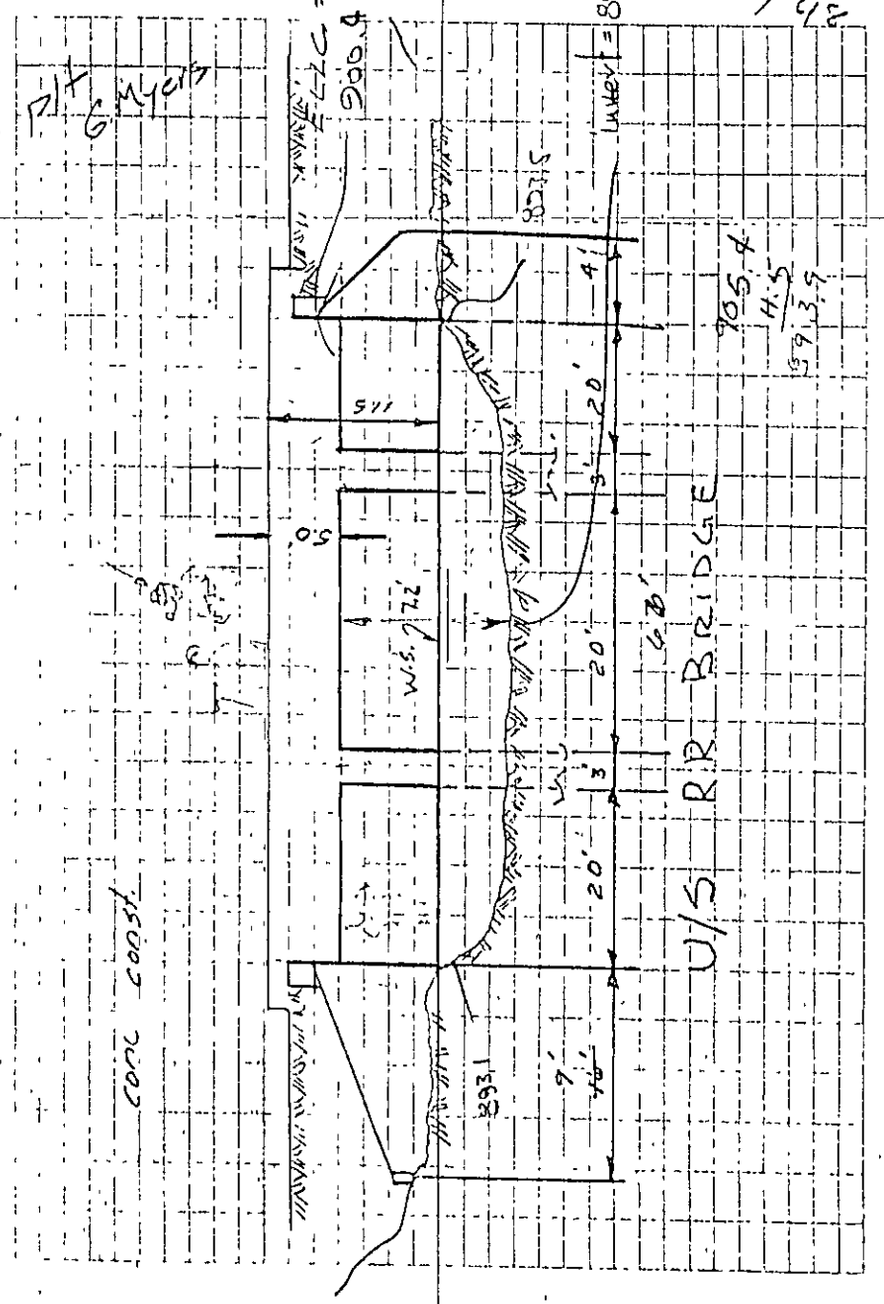


BRIDGE SKETCH
X SECTION 7
479/41
60'
40'
68'
28.8
22.5
914.8
U/S
D/S
0+00
0+00
47'
47'
7'
28'
56'
70'
6.5
6.58
6.59
7.01
7.02
X1
X1

BRIDGE SKETCH SEC. 9
Plt G. Myers
D/S
U/S
JACKSON
Beaver Creek
Note: Sec. 8 is typical of
D/S of Jackson St. bridge.
JACKSON ST. BRIDGE
U/S
Sty hand rail elev
Top bridg rail
Bridg deck
Grd cont
Steel
Conc
Cut p.f.
Cut p.f.
Bes-7
Bes-7
Bes-7
Pav pnt
Grd cont
Conc
Conc
Conc

BRIDGE SKETCH
SEC 10





00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: HUDSON, CITY OF

3) WATERCOURSE: BEAN CREEK

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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**********************************************
  HEC2 RELEASE DATED NOV 76 UPDATED FEB 1977
  ERROR CORR -  01
  MODIFICATION -  50,51,52
**********************************************
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NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

BEAN CREEK 100 YR FLOW

SUMMARY PRINTOUT TABLE 150

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
2.500	0.00	0.00	0.00	886.20	3420.00	897.30	0.00	897.61	16.84	4.63	928.34	833.43
2.500	0.00	0.00	0.00	886.20	2170.00	895.80	0.00	896.02	15.67	3.85	633.57	548.14
2.500	0.00	0.00	0.00	886.20	3050.00	896.90	0.00	897.19	16.54	4.42	841.56	749.85
2.500	0.00	0.00	0.00	886.20	4750.00	898.50	0.00	898.88	17.99	5.28	1224.36	1119.82
3.000	700.00	0.00	0.00	887.00	3420.00	898.42	0.00	898.70	14.28	4.38	1002.57	904.97
3.000	700.00	0.00	0.00	887.00	2170.00	896.84	0.00	897.05	13.56	3.68	675.54	589.20
3.000	700.00	0.00	0.00	887.00	3050.00	898.00	0.00	898.26	14.10	4.20	906.43	812.33
3.000	700.00	0.00	0.00	887.00	4750.00	899.70	0.00	900.03	14.96	4.96	1335.27	1228.19
3.900	1300.00	0.00	0.00	889.00	3420.00	900.51	0.00	901.02	21.50	6.08	735.28	737.58
3.900	1300.00	0.00	0.00	889.00	2170.00	898.79	0.00	899.15	18.62	4.96	524.12	502.94
3.900	1300.00	0.00	0.00	889.00	3050.00	900.05	0.00	900.52	20.72	5.78	675.06	670.07
3.900	1300.00	0.00	0.00	889.00	4750.00	901.90	0.00	902.55	23.84	7.01	936.62	972.77
3.980	132.00	0.00	0.00	889.80	3420.00	900.77	0.00	901.31	19.96	5.94	596.19	765.43
3.980	132.00	0.00	0.00	889.80	2170.00	899.06	0.00	899.38	14.62	4.52	480.11	567.62
3.980	132.00	0.00	0.00	889.80	3050.00	900.31	0.00	900.79	19.06	5.57	547.60	698.57
3.980	132.00	0.00	0.00	889.80	4750.00	902.15	0.00	902.94	24.72	7.18	723.34	955.29
4.020	37.00	902.00	899.00	889.80	3420.00	901.24	0.00	901.75	18.19	5.72	597.91	801.90
4.020	37.00	902.00	899.00	889.80	2170.00	899.14	0.00	899.45	14.19	4.48	484.65	576.14
4.020	37.00	902.00	899.00	889.80	3050.00	900.64	0.00	901.09	17.24	5.39	565.39	734.56
4.020	37.00	902.00	899.00	889.80	4750.00	903.01	0.00	903.66	19.00	6.59	809.27	1089.64
4.100	32.00	0.00	0.00	888.40	3420.00	901.26	0.00	901.84	17.98	6.40	650.37	806.47
4.100	32.00	0.00	0.00	888.40	2170.00	899.13	0.00	899.56	16.86	5.36	448.16	528.44
4.100	32.00	0.00	0.00	888.40	3050.00	900.64	0.00	901.20	18.06	6.17	590.07	717.70
4.100	32.00	0.00	0.00	888.40	4750.00	903.03	0.00	903.76	18.94	7.27	824.34	1091.36
5.900	550.00	0.00	0.00	888.80	3420.00	902.29	0.00	902.71	13.44	5.20	684.20	932.93
5.900	550.00	0.00	0.00	888.80	2170.00	900.05	0.00	900.33	11.32	4.24	511.70	645.01
5.900	550.00	0.00	0.00	888.80	3050.00	901.67	0.00	902.06	13.12	4.96	619.81	842.16
5.900	550.00	0.00	0.00	888.80	4750.00	904.15	0.00	904.66	13.78	5.89	927.65	1279.57
5.980	150.00	0.00	0.00	890.00	3420.00	902.52	0.00	902.91	12.64	5.05	676.91	962.05
5.980	150.00	0.00	0.00	890.00	2170.00	900.25	0.00	900.50	9.96	4.01	541.34	687.46
5.980	150.00	0.00	0.00	890.00	3050.00	901.90	0.00	902.25	11.97	4.77	639.91	881.49
5.980	150.00	0.00	0.00	890.00	4750.00	904.34	0.00	904.91	15.30	6.04	785.84	1214.48

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	1CK*S	VCH	AREA	.01K
6.020	47.00	905.50	901.90	890.00	3420.00	902.86	0.00	903.23	11.52	4.91	697.17	1007.55
6.020	47.00	905.50	901.90	890.00	2170.00	900.30	0.00	900.55	9.83	3.99	543.86	692.25
6.020	47.00	905.50	901.90	890.00	3050.00	902.13	0.00	902.47	11.23	4.67	653.37	910.05
6.020	47.00	905.50	901.90	890.00	4750.00	905.21	0.00	905.71	12.52	5.67	838.26	1342.47
6.500	75.00	0.00	0.00	889.00	3420.00	902.91	0.00	903.39	16.51	5.60	610.31	841.57
6.500	75.00	0.00	0.00	889.00	2170.00	900.34	0.00	900.69	14.68	4.73	458.43	566.29
6.500	75.00	0.00	0.00	889.00	3050.00	902.17	0.00	902.63	16.22	5.39	565.38	757.39
6.500	75.00	0.00	0.00	889.00	4750.00	905.27	0.00	905.87	16.78	6.20	782.63	1159.47
6.980	60.00	0.00	0.00	891.00	3420.00	902.90	0.00	903.62	25.81	6.77	504.89	673.12
6.980	60.00	0.00	0.00	891.00	2170.00	900.35	0.00	900.89	26.54	5.86	370.59	421.20
6.980	60.00	0.00	0.00	891.00	3050.00	902.18	0.00	902.84	26.27	6.54	466.10	595.07
6.980	60.00	0.00	0.00	891.00	4750.00	905.24	0.00	906.12	24.79	7.52	631.82	953.98
6.990	1.00	903.50	914.60	891.00	3420.00	902.91	0.00	903.62	20.38	6.77	505.00	757.52
6.990	1.00	903.50	914.60	891.00	2170.00	900.36	0.00	900.89	20.96	5.85	370.69	474.04
6.990	1.00	903.50	914.60	891.00	3050.00	902.18	0.00	902.85	20.74	6.54	466.21	669.69
6.990	1.00	903.50	914.60	891.00	4750.00	905.24	0.00	906.12	19.58	7.52	631.93	1073.52
7.010	28.00	903.50	914.60	891.00	3420.00	902.98	0.00	903.68	19.95	6.73	508.51	765.63
7.010	28.00	903.50	914.60	891.00	2170.00	900.43	0.00	900.95	20.41	5.80	374.13	480.36
7.010	28.00	903.50	914.60	891.00	3050.00	902.25	0.00	902.91	20.26	6.49	469.74	677.55
7.010	28.00	903.50	914.60	891.00	4750.00	905.31	0.00	906.18	19.25	7.48	635.35	1082.65
7.020	1.00	0.00	0.00	891.00	3420.00	902.98	0.00	903.68	25.19	6.72	508.91	681.39
7.020	1.00	0.00	0.00	891.00	2170.00	900.43	0.00	900.95	25.76	5.79	374.49	427.59
7.020	1.00	0.00	0.00	891.00	3050.00	902.26	0.00	902.91	25.58	6.49	470.14	603.07
7.020	1.00	0.00	0.00	891.00	4750.00	905.31	0.00	906.18	24.31	7.47	635.76	963.31
7.100	60.00	0.00	0.00	889.70	3420.00	903.58	0.00	903.81	7.48	4.09	1055.37	1250.71
7.100	60.00	0.00	0.00	889.70	2170.00	900.85	0.00	901.07	8.75	3.82	656.64	733.63
7.100	60.00	0.00	0.00	889.70	3050.00	902.80	0.00	903.03	8.00	4.04	925.88	1078.52
7.100	60.00	0.00	0.00	889.70	4750.00	906.08	0.00	906.31	6.19	4.21	1481.04	1908.62
8.000	500.00	0.00	0.00	891.00	3420.00	903.92	0.00	904.21	8.05	4.58	1028.40	1205.03
8.000	500.00	0.00	0.00	891.00	2170.00	901.27	0.00	901.52	8.94	4.08	628.48	725.94
8.000	500.00	0.00	0.00	891.00	3050.00	903.18	0.00	903.46	8.40	4.48	901.10	1052.46
8.000	500.00	0.00	0.00	891.00	4750.00	906.37	0.00	906.64	6.69	4.72	1505.36	1836.69
8.900	160.00	0.00	0.00	891.00	3420.00	904.07	0.00	904.34	7.41	4.37	1016.77	1256.13
8.900	160.00	0.00	0.00	891.00	2170.00	901.44	0.00	901.66	7.96	3.83	636.78	768.95
8.900	160.00	0.00	0.00	891.00	3050.00	903.33	0.00	903.59	7.66	4.25	895.62	1101.76
8.900	160.00	0.00	0.00	891.00	4750.00	906.48	0.00	906.75	6.35	4.58	1466.65	1884.92
8.980	150.00	0.00	0.00	891.60	3420.00	904.16	0.00	904.52	11.34	5.04	915.43	1015.56
8.980	150.00	0.00	0.00	891.60	2170.00	901.54	0.00	901.86	13.67	4.60	472.02	587.00
8.980	150.00	0.00	0.00	891.60	3050.00	903.39	0.00	903.83	14.75	5.33	572.26	794.19
8.980	150.00	0.00	0.00	891.60	4750.00	906.57	0.00	906.88	8.71	5.02	1396.46	1609.71
9.020	33.00	904.50	900.50	891.60	3420.00	905.05	0.00	905.32	7.89	4.42	1093.97	1217.43
9.020	33.00	904.50	900.50	891.60	2170.00	901.80	0.00	902.11	12.44	4.46	486.36	615.37
9.020	33.00	904.50	900.50	891.60	3050.00	904.13	0.00	904.51	11.96	4.98	612.01	881.79
9.020	33.00	904.50	900.50	891.60	4750.00	907.13	0.00	907.40	7.22	4.70	1506.91	1767.23

SECNO	XLCH	ELTRD	ELLC	ELMIN	Q	CWSEL	CRIWS	EG	10K*S	VCH	AREA	.01K
9.500	70.00	0.00	0.00	892.00	3420.00	905.15	0.00	905.38	6.41	3.93	961.86	1350.53
9.500	70.00	0.00	0.00	892.00	2170.00	902.03	0.00	902.22	7.83	3.57	639.07	775.47
9.500	70.00	0.00	0.00	892.00	3050.00	904.43	0.00	904.64	6.48	3.78	880.65	1198.00
9.500	70.00	0.00	0.00	892.00	4750.00	907.17	0.00	907.47	6.71	4.50	1204.30	1833.90
9.980	50.00	0.00	0.00	893.20	3420.00	905.18	0.00	905.42	7.23	4.09	1008.57	1271.68
9.980	50.00	0.00	0.00	893.20	2170.00	902.07	0.00	902.29	9.58	3.78	573.53	701.01
9.980	50.00	0.00	0.00	893.20	3050.00	904.46	0.00	904.69	7.42	3.97	900.74	1119.82
9.980	50.00	0.00	0.00	893.20	4750.00	907.22	0.00	907.51	7.32	4.57	1312.01	1755.36
10.020	21.00	904.50	900.40	893.20	3420.00	905.84	0.00	906.05	5.79	3.79	1107.66	1421.03
10.020	21.00	904.50	900.40	893.20	2170.00	902.44	0.00	902.65	8.39	3.63	597.98	749.23
10.020	21.00	904.50	900.40	893.20	3050.00	905.17	0.00	905.36	5.78	3.65	1006.54	1268.72
10.020	21.00	904.50	900.40	893.20	4750.00	907.69	0.00	907.95	6.38	4.36	1384.06	1881.11
10.100	50.00	0.00	0.00	892.00	3420.00	905.87	0.00	906.08	5.87	3.67	932.86	1411.45
10.100	50.00	0.00	0.00	892.00	2170.00	902.51	0.00	902.69	7.86	3.42	634.98	773.81
10.100	50.00	0.00	0.00	892.00	3050.00	905.20	0.00	905.39	6.21	3.50	871.55	1223.97
10.100	50.00	0.00	0.00	892.00	4750.00	907.70	0.00	907.99	6.60	4.34	1098.54	1849.38
11.000	1250.00	0.00	0.00	893.00	3420.00	906.55	0.00	906.69	3.99	3.44	1540.54	1711.89
11.000	1250.00	0.00	0.00	893.00	2170.00	903.39	0.00	903.55	6.07	3.48	848.84	880.71
11.000	1250.00	0.00	0.00	893.00	3050.00	905.89	0.00	906.02	4.11	3.36	1388.73	1504.27
11.000	1250.00	0.00	0.00	893.00	4750.00	908.47	0.00	908.63	3.96	3.77	1983.66	2388.16
12.000	2650.00	0.00	0.00	897.20	3420.00	908.25	0.00	908.44	12.81	4.26	1336.69	955.66
12.000	2650.00	0.00	0.00	897.20	2170.00	905.94	0.00	906.16	18.30	4.27	781.85	507.32
12.000	2650.00	0.00	0.00	897.20	3050.00	907.66	0.00	907.86	13.65	4.22	1189.51	825.47
12.000	2650.00	0.00	0.00	897.20	4750.00	910.10	0.00	910.29	11.15	4.44	1797.38	1422.25
13.000	2750.00	0.00	0.00	899.60	3420.00	911.23	0.00	911.45	9.38	4.20	1281.05	1116.58
13.000	2750.00	0.00	0.00	899.60	2170.00	909.45	0.00	909.63	9.23	3.68	841.83	714.40
13.000	2750.00	0.00	0.00	899.60	3050.00	910.75	0.00	910.95	9.42	4.08	1159.69	993.66
13.000	2750.00	0.00	0.00	899.60	4750.00	912.83	0.00	913.07	9.12	4.56	1681.36	1572.68
14.000	650.00	0.00	0.00	900.30	3420.00	911.85	0.00	912.07	9.74	4.26	1261.06	1095.82
14.000	650.00	0.00	0.00	900.30	2170.00	910.06	0.00	910.25	9.65	3.73	821.94	698.42
14.000	650.00	0.00	0.00	900.30	3050.00	911.36	0.00	911.58	9.80	4.14	1139.93	974.37
14.000	650.00	0.00	0.00	900.30	4750.00	913.43	0.00	913.67	9.47	4.62	1657.34	1543.24

BEAN CREEK 100 YR FLOW

SUMMARY PRINTOUT TABLE 150

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
2.500	3420.00	897.30	0.00	0.00	0.00	224.38	0.00
2.500	2170.00	895.80	0.00	0.00	0.00	168.63	0.00
2.500	3050.00	896.90	0.00	0.00	0.00	209.52	0.00
2.500	4750.00	898.50	0.00	0.00	0.00	268.98	0.00
3.000	3420.00	898.42	0.00	1.12	0.00	236.36	700.00
3.000	2170.00	896.84	0.00	1.04	0.00	177.64	700.00
3.000	3050.00	898.00	0.00	1.10	0.00	220.72	700.00
3.000	4750.00	899.70	0.00	1.20	0.00	283.90	700.00
3.900	3420.00	900.51	0.00	2.08	0.00	135.35	1300.00
3.900	2170.00	898.79	0.00	1.94	0.00	109.95	1300.00
3.900	3050.00	900.05	0.00	2.05	0.00	128.62	1300.00
3.900	4750.00	901.90	0.00	2.20	0.00	150.00	1300.00
3.980	3420.00	900.77	0.00	.26	0.00	81.07	132.00
3.980	2170.00	899.06	0.00	.27	0.00	54.00	132.00
3.980	3050.00	900.31	0.00	.26	0.00	54.00	132.00
3.980	4750.00	902.15	0.00	.26	0.00	100.00	132.00
4.020	3420.00	901.24	0.00	.47	0.00	54.00	37.00
4.020	2170.00	899.14	0.00	.08	0.00	54.00	37.00
4.020	3050.00	900.64	0.00	.33	0.00	54.00	37.00
4.020	4750.00	903.01	0.00	.86	0.00	100.00	37.00
4.100	3420.00	901.26	0.00	.02	0.00	98.01	32.00
4.100	2170.00	899.13	0.00	-.01	0.00	84.57	32.00
4.100	3050.00	900.64	0.00	.00	0.00	98.01	32.00
4.100	4750.00	903.03	0.00	.02	0.00	98.01	32.00
5.900	3420.00	902.29	0.00	1.04	0.00	119.52	550.00
5.900	2170.00	900.05	0.00	.92	0.00	61.61	550.00
5.900	3050.00	901.67	0.00	1.03	0.00	88.10	550.00
5.900	4750.00	904.15	0.00	1.12	0.00	134.39	550.00
5.980	3420.00	902.52	0.00	.22	0.00	60.00	150.00
5.980	2170.00	900.25	0.00	.20	0.00	59.56	150.00
5.980	3050.00	901.90	0.00	.23	0.00	59.98	150.00
5.980	4750.00	904.34	0.00	.19	0.00	60.00	150.00
6.020	3420.00	902.86	0.00	.34	0.00	60.00	47.00
6.020	2170.00	900.30	0.00	.05	0.00	59.57	47.00
6.020	3050.00	902.13	0.00	.23	0.00	60.00	47.00
6.020	4750.00	905.21	0.00	.87	0.00	60.00	47.00
6.500	3420.00	902.91	0.00	.05	0.00	62.26	75.00
6.500	2170.00	900.34	0.00	.04	0.00	56.07	75.00
6.500	3050.00	902.17	0.00	.04	0.00	60.49	75.00
6.500	4750.00	905.27	0.00	.06	0.00	97.19	75.00
6.980	3420.00	902.90	0.00	-.00	0.00	53.73	60.00
6.980	2170.00	900.35	0.00	.01	0.00	51.02	60.00

6.980	3050.00	902.18	0.00	.00	0.00	53.16	60.00
6.980	4750.00	905.24	0.00	-.03	0.00	54.60	60.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
6.990	3420.00	902.91	0.00	.00	0.00	53.74	1.00
6.990	2170.00	900.36	0.00	.00	0.00	51.03	1.00
6.990	3050.00	902.18	0.00	.00	0.00	53.16	1.00
6.990	4750.00	905.24	0.00	.00	0.00	54.60	1.00
7.010	3420.00	902.98	0.00	.07	0.00	53.79	28.00
7.010	2170.00	900.43	0.00	.07	0.00	51.15	28.00
7.010	3050.00	902.25	0.00	.07	0.00	53.21	28.00
7.010	4750.00	905.31	0.00	.07	0.00	54.60	28.00
7.020	3420.00	902.98	0.00	.00	0.00	53.79	1.00
7.020	2170.00	900.43	0.00	.00	0.00	51.16	1.00
7.020	3050.00	902.26	0.00	.00	0.00	53.22	1.00
7.020	4750.00	905.31	0.00	.00	0.00	54.60	1.00
7.100	3420.00	903.58	0.00	.60	0.00	168.19	60.00
7.100	2170.00	900.85	0.00	.42	0.00	123.36	60.00
7.100	3050.00	902.80	0.00	.55	0.00	156.70	60.00
7.100	4750.00	906.08	0.00	.77	0.00	170.00	60.00
8.000	3420.00	903.92	0.00	.35	0.00	177.97	500.00
8.000	2170.00	901.27	0.00	.42	0.00	123.60	500.00
8.000	3050.00	903.18	0.00	.37	0.00	162.65	500.00
8.000	4750.00	906.37	0.00	.29	0.00	200.00	500.00
8.900	3420.00	904.07	0.00	.14	0.00	171.15	160.00
8.900	2170.00	901.44	0.00	.16	0.00	118.71	160.00
8.900	3050.00	903.33	0.00	.15	0.00	156.35	160.00
8.900	4750.00	906.48	0.00	.11	0.00	190.00	160.00
8.980	3420.00	904.16	0.00	.09	0.00	199.00	150.00
8.980	2170.00	901.54	0.00	.10	0.00	54.00	150.00
8.980	3050.00	903.39	0.00	.07	0.00	54.00	150.00
8.980	4750.00	906.57	0.00	.09	0.00	199.00	150.00
9.020	3420.00	905.05	0.00	.90	0.00	199.00	33.00
9.020	2170.00	901.80	0.00	.27	0.00	54.00	33.00
9.020	3050.00	904.13	0.00	.74	0.00	54.00	33.00
9.020	4750.00	907.13	0.00	.56	0.00	199.00	33.00
9.500	3420.00	905.15	0.00	.10	0.00	115.20	70.00
9.500	2170.00	902.03	0.00	.23	0.00	93.51	70.00
9.500	3050.00	904.43	0.00	.30	0.00	109.33	70.00
9.500	4750.00	907.17	0.00	.04	0.00	123.66	70.00
9.980	3420.00	905.18	0.00	.03	0.00	150.00	50.00
9.980	2170.00	902.07	0.00	.04	0.00	66.00	50.00
9.980	3050.00	904.46	0.00	.03	0.00	149.29	50.00
9.980	4750.00	907.22	0.00	.04	0.00	150.00	50.00
10.020	3420.00	905.84	0.00	.66	0.00	150.00	21.00
10.020	2170.00	902.44	0.00	.38	0.00	66.00	21.00
10.020	3050.00	905.17	0.00	.71	0.00	150.00	21.00
10.020	4750.00	907.69	0.00	.47	0.00	150.00	21.00

SECNO	Q	CWSEL	DIFWSP	DIFWSX	DIFKWS	TOPWID	XLCH
10.100	3420.00	905.87	0.00	.03	0.00	91.00	50.00
10.100	2170.00	902.51	0.00	.07	0.00	83.37	50.00
10.100	3050.00	905.20	0.00	.03	0.00	91.00	50.00
10.100	4750.00	907.70	0.00	.01	0.00	91.00	50.00
11.000	3420.00	906.55	0.00	.67	0.00	230.00	1250.00
11.000	2170.00	903.39	0.00	.88	0.00	186.51	1250.00
11.000	3050.00	905.89	0.00	.68	0.00	230.00	1250.00
11.000	4750.00	908.47	0.00	.77	0.00	230.00	1250.00
12.000	3420.00	908.25	0.00	1.71	0.00	250.00	2650.00
12.000	2170.00	905.94	0.00	2.55	0.00	218.73	2650.00
12.000	3050.00	907.66	0.00	1.78	0.00	250.00	2650.00
12.000	4750.00	910.10	0.00	1.62	0.00	250.00	2650.00
13.000	3420.00	911.23	0.00	2.98	0.00	250.00	2750.00
13.000	2170.00	909.45	0.00	3.51	0.00	226.11	2750.00
13.000	3050.00	910.75	0.00	3.08	0.00	250.00	2750.00
13.000	4750.00	912.83	0.00	2.74	0.00	250.00	2750.00
14.000	3420.00	911.85	0.00	.62	0.00	250.00	650.00
14.000	2170.00	910.06	0.00	.61	0.00	222.29	650.00
14.000	3050.00	911.36	0.00	.62	0.00	250.00	650.00
14.000	4750.00	913.43	0.00	.60	0.00	250.00	650.00

SUMMARY OF ERRORS

WORK MAP 1/2

CITY OF TECUMSEH F.I.S. (H-3976)
RIVER RAISIN & EVANS CREEK
WORK MAP
WW JOB # 85376 6/11/80

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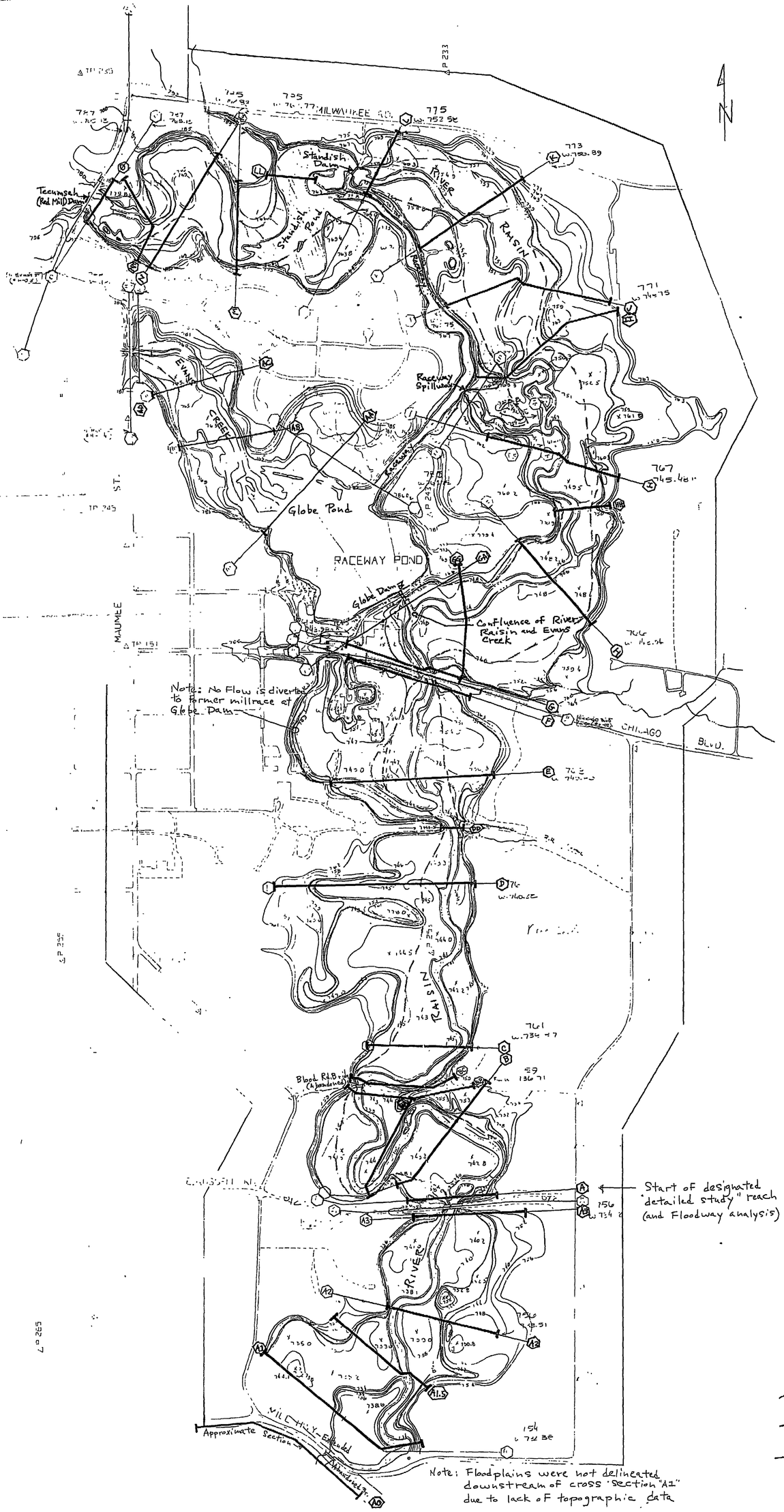
SCALE : 1" = 400'



WORK MAP 2/2

CITY OF TECUMSEH F.I.S. (H-3970)
RIVER RAISIN & EVANS CREEK
W.W.JOB #85376 6/11/80

SCALE: 1" = 400'

RECEIVED
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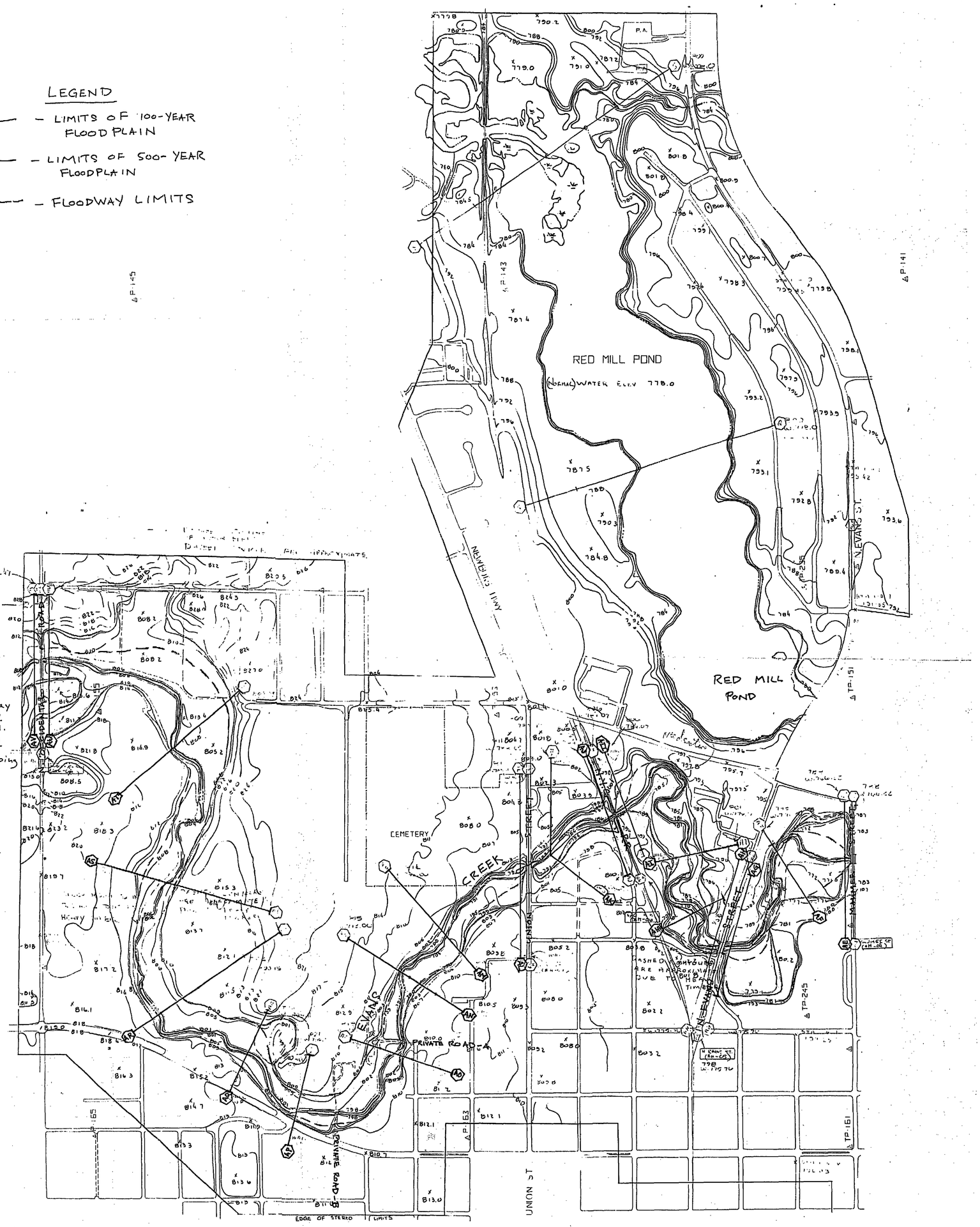
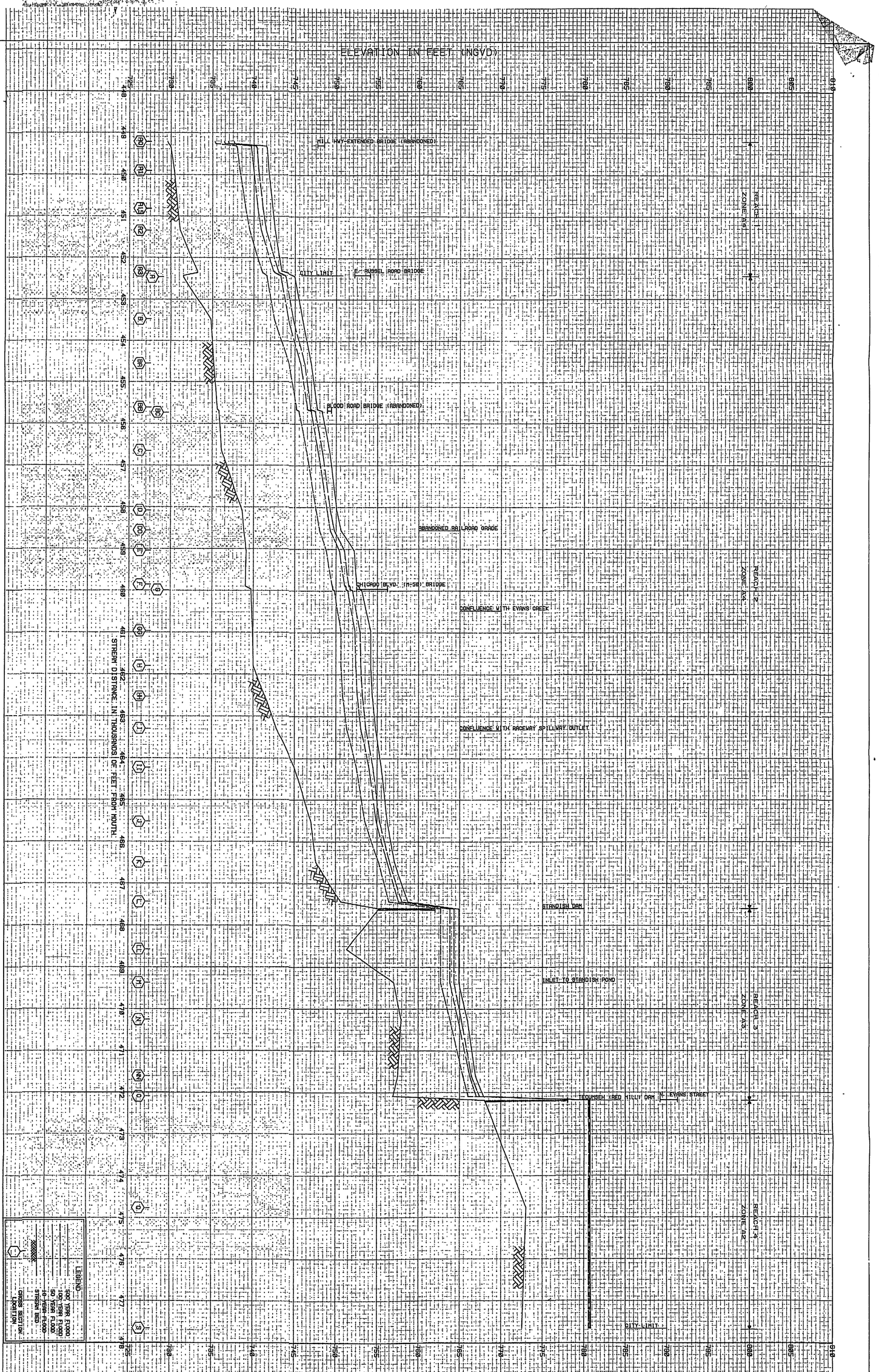
WATER MANAGEMENT

LEGEND

- LIMITS OF 100-YEAR FLOOD PLAIN
- LIMITS OF 500-YEAR FLOODPLAIN
- FLOODWAY LIMITS



Note: No Floodway was determined upstream of N. Occidental Road due to overtopping of roadway



CITY OF TECUMSEH MI.

(LENAWEE COUNTY)

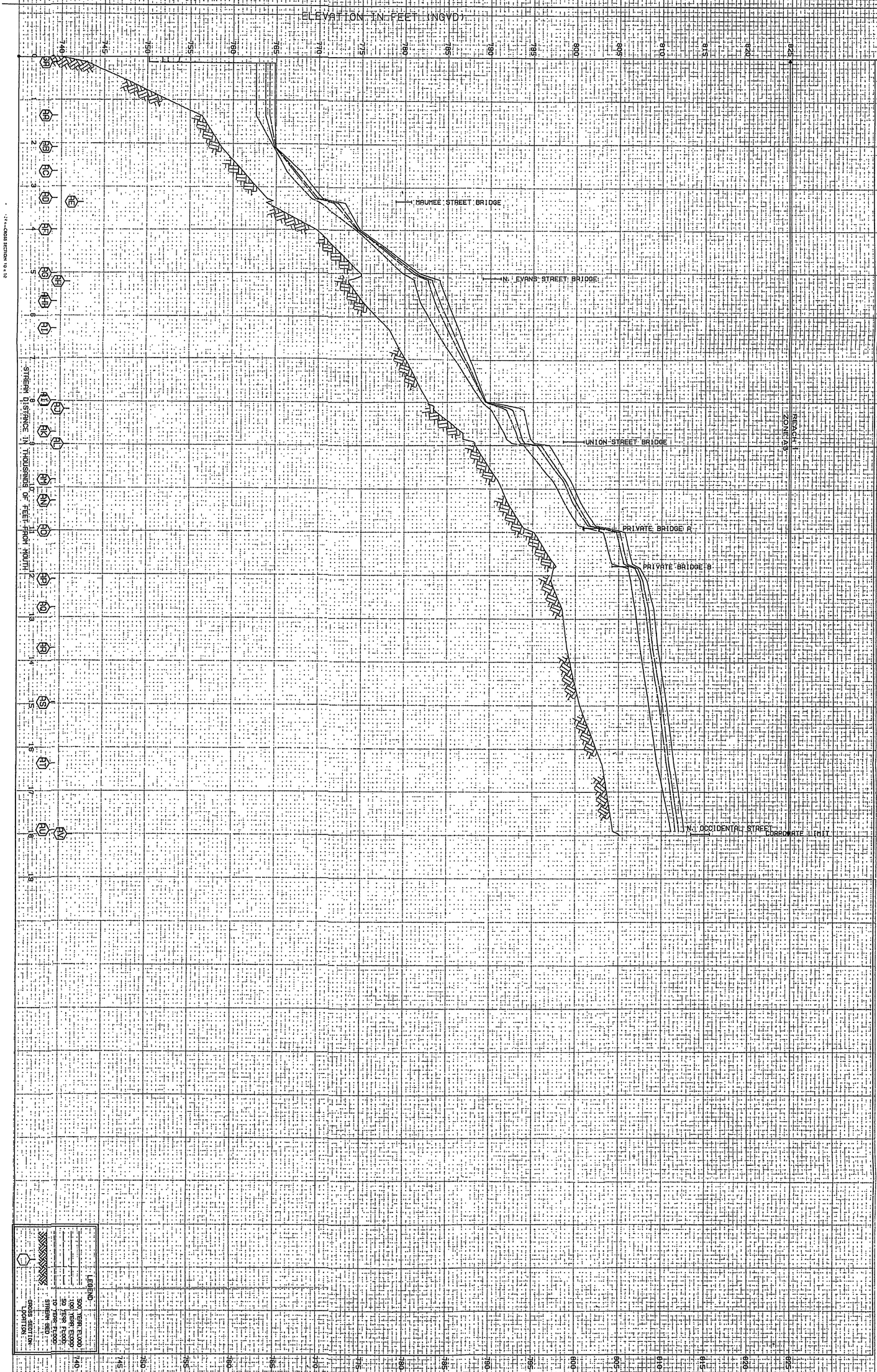
FLOOD PROFILES

RIVER RAISIN

WILLIAMS & WORKS

ENGINEERS/SURVEYORS/PLANNERS/GEOLOGISTS

811 CASCADE WEST PARKWAY S.E. GRAND RAPIDS, MICHIGAN 49506



CITY OF TECUMSEH

(LENAWEE COUNTY)

FLOOD PROFILES

EVANS CREEK

WILLIAMS & WORKS
ENGINEERS/SURVEYORS/PLANNERS/GEOLOGISTS
611 CASCADE WEST PARKWAY S.E. GRAND RAPIDS, MICHIGAN 48506

00BREAK00

1) COUNTY: LENAWEE

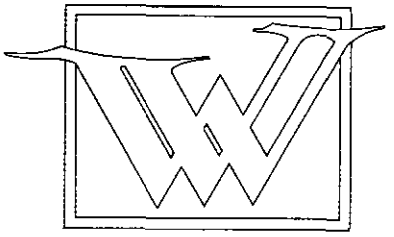
2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: EVANS CR & RIVER RAISIN

4) DOCUMENT TYPE: REPORT

00BREAK00

ENGINEERS / PLANNERS / ARCHITECTS / SURVEYORS / GEOLOGISTS / CHEMISTS • 611 CASCADE WEST PKWY S E, GRAND RAPIDS MI 49506 • PH (616) 942-9600



WILLIAMS & WORKS

T O WILLIAMS 1861-1941 • F D WORKS 1880-1931 • W B WILLIAMS 1895-1974

June 10, 1980

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JUN 20 1980
WATER MANAGEMENT

Ms. Suzanne Elms
Flood Insurance Unit
Water Management Division
Stevens T. Mason Building
Box 30028
Lansing, Michigan 48909

Dear Ms. Elms:

We are submitting herewith for your review, our hydraulic analysis for the City of Tecumseh (Lenawee County) Flood Insurance Study. Enclosed please find the following support materials for this analysis:

- A short technical report describing the analysis;
- HEC-2 computer input/output listings (2) for the designated study reaches of the River Raisin and Evans Creek;
- Channel-flood plain and bridge cross section plots showing conveyance limits and/or floodway limits, 100-year flood stages and horizontally varied 'n'-values;
- Plotted flood stage and channel bottom profiles showing structures cross section locations;
- Work maps (2) showing channel alignments, structure and cross section locations, and areas determined to be within the 500 and 100-year flood limits (natural and floodway) as well as showing major surface features such as streets;
- Cross section reference tables relating cross section identifiers to stream/river stationing;
- Field photographs (and descriptions) depicting existing channel-flood plain conditions at selected locations.

Pellar Sorg

Should you have any questions regarding this analysis or any of the submitted materials, or should you require additional information, please don't hesitate to contact us. Thank you for your time and consideration.

Sincerely,

WILLIAMS & WORKS, INC.

Paul R. Sigelko

Paul R. Sigelko
Engineer/Studies Section

PRS/clm

enclosures

HYDRAULIC ANALYSES
FOR THE
RIVER RAISIN AND EVANS CREEK
IN THE
CITY OF TECUMSEH, LENAWEE COUNTY

A. Historical Flooding:

Only limited information on hisitorical flooding within the City of Tecumseh was available. The most serious flooding in recent history occurred on June 26, 1968, when the Satterthwaite Dam, located on Evans Creek (Globe Pond) at the present site of the Globe Dam (rebuilt in 1972) was washed out. No high water marks were found on any of the structures. During the June, 1968 flood, it was estimated that of the total River Raisin flood flow estimate of 2940 cfs, not less than 1100 cfs was contributed by Evans Creek[1/]. The local paper stated that the flood stage at the Chicago Blvd. (M-50) bridge reached within 18 inches of the bridge (bridge deck or low chard not specified) at that time and the N. Evans Street roadway embankment at the Tecumseh Products (Red Mill) Dam experienced some overt opping[2/].

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WATER MANAGEMENT

1/ Report on Rebuilding the Satterthwaite Dam by L.E. Winkelhaus; April, 1969.

2/ Tecumseh Herald newspaper article of June 27, 1968.

B. Hydraulic Computations:

(1) Flood Discharges

Peak flows used for hydraulic computations were determined in a seperate hydrologic analysis which utilized the SCS TR-20 hydrology computer simulation program to simulate runoff and streamflow hydrographs. Peak flows were determined at these designated river locations: The River Raisin at the Tecumseh (Red Mill) Dam; the River Raisin at its confluence with Evans Creek; and Evans Creek at the inlet to Globe Pond. The TR-20 analysis and resultant flows have been approved by the Michigan Department of Natural Resources.

Subsequent analysis was carried out to determine the component flows over the three spillways in the lower dams system (a combined spillway rating curve was developed for the Globe, Raceway, and Standish Dam spillways for the TR-20 analysis). The analysis assumed that water levels in the Standish and Globe Ponds and the connecting raceway remained equal (Note that the raceway can flow in either direction). The combined spillway rating curve was used to determine the stage at the peak discharge rates from the TR-20 analysis. The individual component spillway rating curves which were used to develop the composite curve were then used to determine the discharges over each spillway. The resultant discharges determined are summarized below:

yes but at what loss / rate of flow

PEAK FLOOD FLOWS*

Reach	PA	Recurrence Interval in Years 10	50	100	500
(1) River Raisin below Evans Creek Confluence	25	2430	3600	4090	5060
(2) River Raisin from Evans Creek Confluence upstream to Raceway Spillway channel		1360	2240	2610	3380
(3) River Raisin at Standish Dam		1350	2060	2350	3000
(4) River Raisin at Tecumseh (Red Mill) Dam		1280	1820 ~~1830~~	2060 ~~2070~~	2540 ~~2550~~ accepted values
(5) River Raisin at Red Mill Pond inlet		1280	1820	2070	2550
(6) Evans Creek at Globe Dam		1060	1360	1480	1690
(7) Evans Creek at Globe Pond inlet		1150	1770	2010	2450
(8) Raceway spillway discharge channel		25	180	260	380

*NOTE: All flows are rounded to the nearest 10 cfs

(2) Flood Stages

Flood stages were determined by computer simulation techniques utilizing the Corps of Engineers HEC-2: Water Surface Profiles model (Nov. 1976 version updated July 1979) as compiled at the Michigan State University Computer Lab in East Lansing.

Two HEC-2 decks were set up: One for the River Raisin from the abandoned Mill Highway - extended bridge upstream to the north City limit near the inlet to Red Mill Pond; and one for Evans Creek from its confluence upstream through N. Occidental Road.

The River Raisin computer model incorporated a total of 48 (40 normal and 8 bridge sections) cross sections (located as shown on the work map) to represent the 28,440 foot river reach studied, which includes four bridge and two dam structures. Most of the cross sections were determined by field survey and photogrammetry. However, a total of eleven inserted cross sections were determined from topographic contours (on work map) and stream bed elevation prorating. These sections are indicated on the attached cross section reference table. In addition, nine repeated cross sections were used as upstream and downstream sections at the four bridges modeled.

All four bridges - Mill Highway-extended (abandoned), E. Russel Road, Blood Road (abandoned), and Chicago Blvd. (M-50) - were modeled by the "normal bridge" routine and all of them were determined to be under low-flow conditions at the 100-year flood discharge. Note that while the Blood Road structure will have some weir flow in the left overbank, field inspection indicated that there is essentially no roadway embankment and, consequently, it was judged that this condition could be most accurately represented by normal bridge. No manual bridge computations were made. X5 cards were used to input the water surface elevations (as determined from the previously developed spillway rating curves) immediately upstream of the Standish Dam and Tecumseh (Red Mill) Dam spillway structures.

The Evans Creek model incorporated a total of 48 cross sections (34 normal and 14 bridge sections) to represent the 18,000 foot stream reach studied. The reach includes seven bridge crossings. One cross section (cross section AHH) was inserted at the location of the condominium project flood plain encroachment authorized recently by the MDNR. Nine sections were repeated. Inserted and repeated sections are indicated in the cross section reference table.

The starting water surface elevations at Section GA (just above River Raisin confluence) for the Evans Creek runs were determined by using the slope-area method to compute normal depth. As these stages were found to be submerged by stages on the River Raisin at the confluence, the latter will be used for the F.I.S. regulatory levels. Flood elevations upstream of the Globe Dam spillway were specified using an X5 card.

The Maumee Street bridge (clear span) was modeled using the "special bridge" routine even though Class A low flow controls because of the occurrence of critical depth within the bridge when modeled by normal bridge. The N. Evans Street bridge was modeled by normal bridge as the piers present under the span were not judged to be hydraulically significant enough to justify use of the special bridge routine. The piers were coded as GR points and caused the occurrence of divided flow (low flow control). The N.Y.C. R.R. and Union Street bridges were modeled by normal bridge with low flow control. Both of the private bridges (A and B) were considered low-flow bridges suitable for modeling by normal bridge because of their relatively minor degree of restriction to either channel or overbank conveyance. However, due to the occurrence of critical depth at private bridge-A it was changed to special bridge. The N. Occidental Street bridge was modeled as a special bridge with pressure and weir flow. (Note: XKOR for N. Occidental Street was computed to 1.4 but set at 1.5. COFQ was set to 2.6 to represent the relatively inefficient wier characteristics of this structure.

River Raisin profiles were initiated at normal depth as computed by the slope-area method just downstream of the abandoned Mill Highway-Extended

bridge, about 3200 feet downstream of the start of the designated detailed study reach at E. Russel Road. Several runs were made to demonstrate that normal depth, as determined for each flood flow, was within a range of starting stages for which flood stage profiles converged at or before E. Russell Road. The starting stages used were:

Recurrence Interval Flood (years)	Starting Elevation (feet above N.G.V.D.)
500	737.6
100	736.9
50	736.4
10	735.3

For the River Raisin run, Manning roughness coefficients (n-values) were horizontally varied using NH cards. Channel roughness was varied from 0.030 to 0.045 with 0.045 used for most of the reach to reflect the typically winding and often obstructed nature of the channel. Overbank n-values were set as high as 0.150 and generally ranged from 0.080 to 0.120. The higher values reflect the densely wooded condition of much of the flood plain area. Generally, higher values were used for steep slopes adjacent to the channel to reflect their usually over grown condition.

For the Evans Creek run the channel n-values ranged from 0.030 to 0.045 with 0.040 being used for most of the reach again reflecting the typically winding but somewhat less obstructed nature of the channel. Again, overbank values were horizontally varied to as high as 0.120 and generally from 0.070 to 0.100. Again, higher values were generally used for steep channel banks.

Contraction and expansion coefficients (CCHV and CEHV, respectively) were set at 0.1 and 0.3, respectively, at normal channel-floodplain cross sections where relatively smooth transitions occurred. These values were increased at sudden transitions, primarily bridges, where CCHV varied from 0.2 to 0.8 and CEHV from 0.4 to 0.9. Engineering judgement was used in determining these values (reference was made to King and Braters' Handbook of Hydraulics and V.T. Chow's Open Channel

Hydraulics).

Artificial encroachments were utilized in both models to limit the effective conveyance area where necessary, generally in accordance with 1:3 expansion and 1:1 contraction slopes. Some low areas in the overbanks were also filled in, (using X5 card) to prevent the occurrence of divided flow.

The floodway encroachments were determined by using both methods 1 and 4. A target elevation difference (100-year flood) of 0.1 foot was used. Where the effective area top-width had already been limited by artificial encroachments floodway encroachments were assumed to be the same. No floodway was determined for the River Raisin reach downstream of E. Russel Road as this is outside of the designated study area.

Results:

The estimated flow of 2940 cfs for the June, 1968, flood lies approximately half way between the 10 and 50-year recurrence interval flood discharges determined for this analysis. It was stated earlier that according to the local paper the water level reached within 1.5 foot of the bridge (deck or low chard not specified). This analysis indicated, however, that the 50-year flood stage would reach a point about 2.6 feet below the low chard and the 10-year about 3.9 below. This is a fairly large difference, but the 1968 flow estimate should only be considered rough and the probable occurrence of a surge of water after the dam failure which could have contributed significantly to the high flood stage and may not have been adequately accounted for in the 1968 flow estimate.

Consequently, no attempt was made to calibrate the model to this point. No other studies have been performed to determine flood stages in this area so, consequently, no further comparisons could be made.

The final computer runs were checked for accuracy and reasonableness of the results and found to be acceptable. Limits of the 100 and 500-year flood events as well as the floodway are shown on the work maps and on the cross section plots.

Evans Creek:

Cross Section Identification	River Station (1000's feet above mouth)	Structure Name (where applicable)
GA	0.12	
AA	1.37	
AB	2.09	
AC	2.65	
AD	3.28	
-	3.33-3.34	Maumee Street Bridge
AE	3.38	
AF	4.00	
AG	5.01	
(AG)*	5.06	
-	5.11-5.12	N. Evans Street Bridge
(AH)*	5.16	
AH	5.21	
AHH**	5.66	
AI	6.31	
AII	7.98	
(AII)*	8.03	
-	8.08-8.09	N.Y.C. RR Bridge
(AJ)*	8.13	
AJ	8.18	
AK	8.69	
(AK)*	8.84	
-	8.89-8.90	Union Street Bridge
(AL)*	8.94	
AL	8.99	
AM	9.80	
AN	10.29	
(AN)*	10.84	
-	10.89-10.90	Private Bridge (A)
AO*	10.99	
(AO)*	11.72	
-	11.77-11.78	Private Bridge (B)
(AP)*	11.83	
AP	12.11	
AQ	12.76	
AR	13.70	
AS	14.95	
AT	16.35	
AU	17.90	
-	17.95-17.96	N. Occidental Road Bridge
AV	18.00	

* Designates repeated cross section

**Designates inserted cross section

CITY OF TECUMSEH F.I.S.

Cross Section Reference Table

River Raisin:

Cross Section Identification	River Station (1000's feet Above Mouth)	Structure Name (Where Applicable)
AO**	449.21	
(AO)*	449.26	
--	449.28-449.30	Mill Hwy-Extended Bridge (abandoned)
(AO)*	449.32	
(AO)*	449.37	
A1	449.90	
A1.5**	450.81	
A2	451.35	
A3	452.33	
(A3)*	452.37	
--	452.38-452.42	E. Russel Road Bridge
(A)*	452.44	
A	452.47	
B	453.47	
BA**	454.55	
BB**	455.59	
(BB)*	455.63	
--	455.64-455.66	Blood Road Bridge (abandoned)
(BC)*	455.67	
BC**	455.71	
C	456.62	
D	458.07	
DD**	458.53	
E	459.03	
F	459.85	
(F)*	459.89	
--	459.90-459.95	Chicago Blvd. (M-50) Bridge
(G)*	459.96	
G	459.98	
GG**	460.96	
H	461.80	
HH**	462.52	
I	463.28	
II**	464.22	
J	465.53	
K	466.50	
L	467.44	
LL**	468.57	
M	469.37	
N	470.25	
NN**	471.60	
O	472.09	
Q	474.75	
S	477.65	

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JUN 20 1980
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WILLIAMS & WORKS
ENGINEERS / SURVEYORS / PLANNERS / GEOLOGISTS
GRAND RAPIDS MICHIGAN

Calculation Sheet

Computed by _____ Subject _____ Sheet ____ of ____
Checked by _____ Job No _____
Client _____ Date _____

Tecumseh F.I.S.

Flow Reaches:

Reach No.	Description
(1)	River Raisin from Evans Cr. confl downstream to Mill Hwy (≈11000 Ft)
(2)	R. R. From E. C. confl upstream to Mill Race Spillway outlet stream confl (≈2800ft)
(3)	RR From Spillway outlet stream confl. upstream to Standish Dam (≈4000')
(4)	R. R. From Standish Dam upstream to Tecumseh (Red) Dam (≈4600')
(5)	R. R. From Tecumseh Dam upstream
(6)	Evans Cr. From R. R. confl. upstream to Globe Dam (≈200')
(7)	Evans Cr. From Globe Dam upstream to Occidental Rd (≈16600')

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ENGINEERS / SURVEYORS / PLANNERS / GEOLOGISTS
GRAND RAPIDS, MICHIGAN

Calculation Sheet

Computed by _____ Checked by _____
Subject _____ Client _____
Sheet ____ of ____ Job No _____ Date _____

Tecumseh F.I.S.

Flow Reach No.	Peak Flows (cfs)			
	10-Yr.	50-Yr.	100-Yr.	500-Yr.
1	2430	3600	4090	5060
2*	1360	2240	2610	3380
3*	1340	2060	2350	3000
4	1280	1830	2070	2550
5	1280	1820	2060	2540
6*	1060	1360	1480	1690
7	1150	1770	2010	2450
8	25	180	260	380
9**	65	230	270	380
10**	90	410	530	760

* Assuming Sloabe & Standish Ponds remain at same elevs.

** Assuming concurrent times to peak (i.e. peak flows occur simultaneously)
└ worst possible case (?) — Not Necessarily
and no slope
└ use this to test validity of First assumption (i.e. that elev. diff. is negligible)

WILLIAMS & WORKS
ENGINEERS / SURVEYORS / PLANNERS / GEOLOGISTS
GRAND RAPIDS, MICHIGAN

Calculation Sheet

Computed by	Subject	Sheet ___ of ___
Checked by		Job No
	Client	Date

Tecumseh FIS - Hydraulic Anal.

Tecumseh Dam Elevs (based on N.D.S.I.R. Rating Curve):

		ΔElev
Q_{10} = 1280 cfs	$Elev_{10}$ = 778.10	0 0
Q_{50} = 1820 cfs	$Elev_{50}$ = 778.10	0.12
Q_{100} = 2060 cfs	$Elev_{100}$ = 778.12	0.90
Q_{500} = 2540 cfs	$Elev_{500}$ = 779.02	

Elevs based on revised Rating curve:

	ΔElev	Cum ΔElev
$Elev_{10}$ = 780.52		
$Elev_{50}$ = 780.62	0.10	0 10
$Elev_{100}$ = 780.66	0 04	0.14
$Elev_{500}$ = 780.74	0 08	0 22

Use revised Curve Elevs;

WATER MANAGEMENT DIVISION

TELEPHONE MESSAGE

DATE: 6/30/80

PARTY CALLING/CALLED: Paul Sigelko

TELEPHONE NO.: 616/ 942-9600

IS FOLLOW-UP NEEDED: ____ Yes ____ No

SUBJECT: Tecumseh, City of - divided flow through dams

FILE NO.: ____

SUMMARY:

for TR20 - developed one combined rating curve (divided flow)
for HEC2 - took elevations from TR20 Run
and read flow for each dam

asked that he send a copy of the rating curves

Hope
(WMD Employee Signature)

R4530

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF-

3) WATERCOURSE: EVANS CREEK

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

```
*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  ERROR CORR = 01,02,03
  MODIFICATION = 50,51,52,53
*****************************************************

T1 HUD FLOOD INSURANCE STUDIES  H=3970  WILLIAMS AND WORKS 85376 JCS/PRS MAY,80
T2 CITY OF TECUMSEH -LENAWEE COUNTY  RIVER RAISIN AND EVANS CREEK
T3      EVANS CREEK-TECUMSEH      100-YEAR FLOODPLAIN UNDER FLOODWAY CONDITIONS

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.        6.        0.        0.    .002273     0.00      0.0       0.    766.000    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     2.000     0.000    -1.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
```

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*PROF 2

CCHV= .100 CEHV= .300

1490 NH CARD USED
*SECNO 1.120

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
	CROSS SECTION GA								
1.12	4.77	747.67	0.00	766.00	747.95	.28	0.00	0.00	744.10
1480.	645.	821.	14.	334.	151.	8.	0.	0.	744.10
0.00	1.93	5.42	1.67	.045	.035	.054	0.000	742.90	265.25
.002249	60.	120.	140.	0	0	8	0.00	304.89	570.14
1490 NH CARD USED									
*SECNO 1.370									
WATER EL=XS CARD= 764.270									
	UPSTREAM OF GLOBE DAM								
	CROSS SECTION AA								
1.37	7.87	764.27	0.00	0.00	764.28	.01	.14	.03	762.80
2010.	3.	2007.	0.	36.	2435.	6.	46.	15.	762.80
.45	.08	.82	.08	.100	.030	.100	.000	756.40	502.71
.000042	1250.	1370.	1450.	0	0	0	0.00	658.51	1161.22
1490 NH CARD USED									
*SECNO 2.090									
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
3685 20 TRIALS ATTEMPTED WSEL,CWSEL									
3693 PROBABLE MINIMUM SPECIFIC ENERGY									
3720 CRITICAL DEPTH ASSUMED									
	CROSS SECTION AB								
2.09	6.26	764.96	764.96	0.00	765.37	.41	.11	.12	762.80
2010.	3.	1126.	881.	3.	167.	653.	76.	25.	764.70
.50	1.02	6.74	1.35	.100	.120	.120	.000	758.70	267.77
.006028	700.	720.	1000.	20	16	0	0.00	460.84	728.61
1490 NH CARD USED									
*SECNO 2.690									
3470 ENCROACHMENT STATIONS= 241.5 711.8 TYPE= 1 TARGET= -241.500									
	CROSS SECTION AC								
2.65	6.22	767.42	0.00	767.42	767.73	.31	2.36	.01	762.70

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2010.	226.	991.	774.	162.	159.	516.	85.	50.	762.70
.54	1.40	6.24	1.38	.090	.045	.100	.000	761.20	241.50
.0036?6	550.	560.	450.	2	0	0	0.00	443.06	684.56

1490 NH CARD USED
*SECNO 3.280

3301 HV CHANGED MORE THAN HVINS

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

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 330.0 430.0 TYPE= 1 TARGET= 100.000

CROSS SECTION AD *DOWNSTREAM OF MAUMEE STREET@

3.28	5.96	769.96	769.96	769.96	771.69	1.73	3.24	.43	764.60
2010.	346.	1430.	234.	113.	115.	96.	94.	34.	764.60
.56	3.05	12.39	2.43	.090	.035	.100	.000	764.00	330.00
.0082?4	600.	630.	600.	3	11	0	0.00	100.00	430.00

CCHV= .900 CEHV= .800
1490 NH CARD USED
*SECNO 3.330
2800 NAT Q1= 406.56 WSEL= 771.64 ENC Q1= 418.29 WSEL= 771.74 RATIO= -.0288
NAT Q1= 418. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 771.74

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 298.3 368.7 TYPE= 4 TARGET= 0.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 778.70 ELREA= 779.00

MAUMEE STREET BRIDGE H-04 ADJACENT DOWNSTREAM SECTION

3.33	6.94	771.64	0.00	771.64	772.39	.74	.21	.49	774.50
2010.	50.	2010.	0.	0.	290.	0.	94.	34.	775.50
.56	30.00	6.92	0.00	.090	.030	.100	.000	764.70	303.53
.002440	50.	50.	50.	5	0	0	0.00	58.04	361.57

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
1.05	1.50	2.80	0.00	25.50	3.00	731.00	2.00	764.70	764.70

*SECNO 3.340
CLASS A LOW FLOW

3420 BRIDGE W.S.= 771.38 BRIDGE VELOCITY= 8.39 CALCULATED CHANNEL AREA= 239.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	772.59	.18	0.	2010.	731.	731.	779.00	790.80

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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=      780.80 ELREA=      780.80

        MAUMEE STREET BRIDGE  H-04   ADJACENT   UPSTREAM SECTION

     3.34      7.22    771.92     0.00    771.82    772.59      .67      .20      0.00    774.50
    2010.        0.     2010.       0.        0.      307.       0.      94.       34.    775.50
      .56      0.00      6.55     0.00      .090      .030     .100     .000    764.70    303.02
  .002085       35.       35.      35.         0         0        0     0.00     59.07    362.09


1490 NH CARD USED
*SECNO 3.380

3470 ENCROACHMENT STATIONS=      310.0      480.0  TYPE=      1  TARGET=      170.000

        CROSS SECTION AE    .UPSTREAM OF MAUMEE STRRET BRIDGE@

     3.38      8.47    772.37     0.00    772.29    772.80      .43      .09       .12    766.30
    2010.       459.     1325.     226.      306.      207.     195.      95.       34.    766.30
      .57      1.50      6.40     1.16      .100      .035     .100     .000    763.90    310.00
  .001533       50.       50.      50.         2         0        0     0.00    170.00    480.00


CCHV=     .100 CEHV=     .300
1490 NH CARD USED
*SECNO 4.000
   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


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

3470 ENCROACHMENT STATIONS=        .0      480.0  TYPE=      1  TARGET=      479.999

        CROSS SECTION AF

     4.00      4.91    774.71    774.71    774.68    775.15      .43     1.74       .00    771.30
    2010.        57.      580.     1373.       28.       69.     419.     103.       38.    771.30
      .60      2.01      8.44      3.27      .100      .040     .042     .000    769.80     37.70
  .008214       700.      620.      500.        20        21        0     0.00    442.30    480.00


1490 NH CARD USED
*SECNO 5.010

3301 HV CHANGED MORE THAN HVINS

   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=      525.0      700.0  TYPE=      1  TARGET=      175.000

        CROSS SECTION AG     .DOWNSTREAM OF N.EVANS STREET BRIDGE@
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5.01	8.39	781.39	0.00	781.45	782.84	1.45	.39	.30	775.80
2010.	333.	1609.	68.	91.	151.	24.	111.	43.	775.80
.63	3.66	10.66	2.82	.090	.040	.090	.000	775.00	589.21
.007509	900.	1010.	850.	3	0	0	0.00	58.53	647.74

CCHV= .300 CEHV= .800
1490 NH CARD USED
*SECNO 5.060

3470 ENCROACHMENT STATIONS= 555.0 695.0 TYPE= 1 TARGET= 140.000

-IMMEDIATELY DOWNSTREAM OF N.EVANS STREET BRIDGE

5.06	6.92	781.92	0.00	781.94	783.18	1.27	.28	.05	775.80
2010.	313.	1630.	66.	104.	164.	29.	111.	43.	775.80
.63	3.01	9.93	2.30	.090	.035	.090	.000	775.00	588.31
.004473	50.	50.	50.	2	0	0	0.00	60.30	648.61

1490 NH CARD USED
*SECNO 5.110
2800 NAT Q1= 499.42 WSEL= 783.20 ENC Q1= 510.45 WSEL= 783.30 RATIO= -.0221
NAT Q1= 510. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 783.30

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 790.50 MAX ELLC= 789.20

3470 ENCROACHMENT STATIONS= 689.5 799.5 TYPE= 4 TARGET= 0.000

N.EVANS STREET BRIDGE -ADJACENT DOWNSTREAM SECTION

5.11	8.89	783.19	0.00	783.20	783.57	.39	.13	.26	785.20
2010.	0.	2010.	0.	0.	402.	0.	112.	43.	786.60
.63	0.00	5.00	0.00	.090	.032	.090	.000	774.30	702.08
.001628	50.	50.	50.	3	0	0	0.00	71.69	779.56

*SECNO 5.120
2800 NAT Q1= 510.47 WSEL= 783.30 ENC Q1= 521.53 WSEL= 783.40 RATIO= -.0217
NAT Q1= 522. RATIOS LOB,CH,ROB= 0.0000 1.0000 0.0000 WSEL= 783.40

3265 DIVIDED FLOW

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 790.50 MAX ELLC= 789.20

3470 ENCROACHMENT STATIONS= 689.5 799.5 TYPE= 4 TARGET= 0.000

N.EVANS STREET BRIDGE -ADJACENT UPSTREAM SECTION

5.12	8.98	783.28	0.00	783.30	783.66	.38	.08	.00	785.20
2010.	0.	2010.	0.	0.	408.	0.	112.	43.	786.60
.64	0.00	4.92	0.00	.090	.032	.090	.000	774.30	701.87
.001565	52.	52.	52.	1	0	0	0.00	72.22	779.88

1490 NH CARD USED
*SECNO 5.160

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3470 ENCROACHMENT STATIONS= 700.0 900.0 TYPE= 1 TARGET= 200.000

IMMEDIATELY UPSTREAM OF N.EVANS STREET BRIDGE

5.16	9.80	783.30	0.00	783.31	783.95	.66	.07	.22	775.80
2010.	174.	1619.	217.	183.	224.	154.	113.	43.	775.80
.64	.95	7.22	1.41	.120	.030	.120	.000	773.50	707.88
.001175	50.	50.	50.	2	0	0	0.00	125.76	833.64

*SECNO 5.210

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= 640.0 916.9 TYPE= 1 TARGET= -640.000

CROSS SECTION AH -UPSTREAM OF N.EVANS STREET BRIDGE

5.21	9.87	783.37	0.00	783.38	784.01	.64	.06	.00	775.80
2010.	177.	1615.	217.	188.	226.	156.	113.	43.	775.80
.64	.94	7.14	1.40	.120	.030	.120	.000	773.50	707.51
.001140	50.	50.	50.	0	0	0	0.00	126.23	833.74

CCHV= .200 CEHV= .300

1490 NH CARD USED

*SECNO 5.680

2800 NAT Q1= 460.17 WSEL= 784.16 ENC Q1= 460.17 WSEL= 784.26 RATIO= 0.0000

NAT Q1= 472. RATIOS LOB,CH,ROB= .1461 .7066 .1473 WSEL= 784.26

3470 ENCROACHMENT STATIONS= 277.6 391.1 TYPE= 4 TARGET= .025

CROSS SECTION AHH INSERTED SECTION AT FILL SITE

5.66	8.92	784.12	0.00	784.16	784.67	.55	.65	.01	776.60
2010.	274.	1465.	270.	168.	212.	198.	119.	45.	776.60
.66	1.63	6.92	1.37	.120	.040	.120	.000	775.20	277.58
.002035	300.	450.	470.	2	0	0	0.00	113.56	391.14

1490 NH CARD USED

*SECNO 6.310

2800 NAT Q1= 455.88 WSEL= 785.56 ENC Q1= 455.88 WSEL= 785.66 RATIO= .0000

NAT Q1= 478. RATIOS LOB,CH,ROB= .0956 .4675 .4369 WSEL= 785.66

3470 ENCROACHMENT STATIONS= 364.3 606.1 TYPE= 4 TARGET= .046

CROSS SECTION AI

6.31	7.31	785.61	0.00	785.56	785.93	.32	1.23	.02	779.10
2010.	151.	994.	865.	104.	162.	413.	127.	47.	779.10
.70	1.45	6.13	2.09	.090	.040	.067	.000	778.30	364.33
.002027	600.	650.	520.	2	0	0	0.00	241.74	606.07

1490 NH CARD USED

*SECNO 7.980

3301 HV CHANGED MORE THAN HVINS

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3470 ENCROACHMENT STATIONS= 440.0 540.0 TYPE= 1 TARGET= 100.000

CROSS SECTION AII -DOWNSTREAM OF NYC RR BRIDGE

7.98	6.83	789.63	0.00	789.49	791.28	1.65	4.95	.40	784.10
2010.	259.	1701.	50.	104.	153.	21.	139.	50.	784.10
.74	2.48	11.15	2.41	.110	.040	.100	.000	782.80	440.00
.007882	1400.	1670.	550.	3	0	0	0.00	66.30	506.30

GCHV= .900 CEHV= .800

1490 NH CARD USED

*SECNO 8.0230

3470 ENCROACHMENT STATIONS= 455.0 515.0 TYPE= 1 TARGET= 60.000

IMMEDIATELY DOWNSTREAM OF NEW YORK CENTRAL RR BRIDGE

8.03	7.31	790.11	0.00	790.17	791.68	1.57	.36	.04	784.10
2010.	194.	1759.	57.	75.	164.	25.	140.	50.	784.10
.74	2.59	10.71	2.32	.110	.040	.100	.000	782.80	455.00
.006594	50.	50.	50.	4	0	0	0.00	52.06	507.06

1490 NH CARD USED

*SECNO 8.0280

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

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 799.40 MAX ELLC= 794.80

NEW YORK CENTRAL RR BRIDDGE -ADJACENT DOWNSTREAM SECTION

8.08	7.12	790.62	0.00	790.65	792.05	1.43	.29	.07	798.10
2010.	0.	2010.	0.	0.	210.	0.	140.	50.	798.10
.75	0.00	9.58	0.00	.110	.050	.100	.000	783.50	485.59
.005216	50.	50.	50.	2	0	0	0.00	31.84	517.43

*SECNO 8.0290

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 799.40 MAX ELLC= 794.80

NEW YORK CENTRAL RR BRIDDGE -ADJACENT UPSTREAM SECTION

8.09	7.67	791.17	0.00	791.19	792.38	1.21	.23	.11	798.10
2010.	0.	2010.	0.	0.	227.	0.	140.	50.	798.10
.75	0.00	8.84	0.00	.110	.050	.100	.000	783.50	485.47
.004094	50.	50.	50.	2	0	0	0.00	32.07	517.55

1490 NH CARD USED

*SECNO 8.0130

3301 RV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 400.0 600.0 TYPE= 1 TARGET= 120.000

IMMEDIATELY UPSTREAM OF NEW YORK CENTRAL RR BRIDGE

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8.13	8.69	792.19	0.00	792.21	792.83	.64	.16	.29	784.40
2010.	361.	1307.	342.	188.	168.	139.	141.	50.	784.40
.75	1.92	7.78	2.45	.100	.040	.090	.000	783.50	480.00
.002602	50.	50.	50.	3	0	0	0.00	120.80	600.00

*SECNO 8.180

3470 ENCROACHMENT STATIONS= 420.0 660.0 TYPE= 1 TARGET= 240.000

CROSS SECTION AJ =UPSTREAM OF NYC RR BRIDGE

8.18	9.19	792.69	0.00	792.70	793.06	.37	.10	.13	784.40
2010.	540.	1136.	335.	379.	178.	187.	141.	51.	784.40
.75	1.43	6.37	1.79	.100	.040	.089	.000	783.50	420.00
.001615	50.	50.	50.	2	0	0	0.00	224.70	644.70

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.690

3470 ENCROACHMENT STATIONS= 670.0 840.0 TYPE= 1 TARGET= 170.000

CROSS SECTION AK =DOWNSTREAM OF UNION STREET BRIDGE

8.69	6.72	793.62	0.00	793.62	793.91	.29	.84	.01	787.40
2010.	178.	1573.	258.	140.	324.	192.	150.	53.	787.40
.79	1.28	4.86	1.34	.090	.040	.090	.000	786.90	675.14
.001406	550.	560.	550.	2	0	0	0.00	164.86	840.00

CCHV= .200 CEHV= .700
1490 NH CARD USED
*SECNO 8.840

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

3470 ENCROACHMENT STATIONS= 720.0 790.0 TYPE= 1 TARGET= 70.000

IMMEDIATELY DOWNSTREAM OF UNION STREET BRIDGE

8.84	6.91	793.81	0.00	793.81	794.25	.44	.24	.10	787.40
2010.	66.	1847.	98.	41.	333.	58.	152.	53.	787.40
.80	1.60	5.54	1.68	.090	.040	.090	.000	786.90	720.00
.001759	150.	150.	150.	2	0	0	0.00	70.00	790.00

1490 NH CARD USED
*SECNO 8.890
2800 NAT Q1= 316.96 WSEL= 793.62 ENC Q1= 325.97 WSEL= 793.72 RATIO= -.0285
NAT Q1= 326. RATIOS LOB,CH,ROB= .0006 .9986 .0008 WSEL= 793.72

3301 AV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 729.5 766.5 TYPE= 4 TARGET= .001

UNION STREET BRIDGE ADJACENT DOWNSTREAM SECTION

8.89	5.53	793.63	0. 0	793.62	795.13	1.50	.14	7.	788.10

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2010.	0.	2010.	0.	0.	205.	0.	152.	54.	788.10
.80	20.00	9.82	20.00	.060	.050	.050	.000	788.10	729.50
.004841	50.	50.	50.	2	0	0	0.00	37.00	766.50

*SECNO 8.900

2800 NAT Q1= 360.05 WSEL= 794.05 ENC Q1= 368.67 WSEL= 794.15 RATIO= -.0239
NAT Q1= 369. RATIOS LOB,CH,ROB= .0007 .9985 .0009 WSEL= 794.15

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 800.00 MAX ELLC= 798.60

3470 ENCROACHMENT STATIONS= 729.5 766.5 TYPE= 4 TARGET= .002

UNION STREET BRIDGE ADJACENT UPSTREAM SECTION

8.90	6.03	794.13	0.00	794.05	795.38	1.26	.21	.05	788.10
2010.	0.	2010.	0.	0.	223.	0.	153.	54.	788.10
.80	20.00	9.00	20.00	.060	.050	.050	.000	788.10	729.50
.003672	50.	50.	50.	2	0	0	0.00	37.00	766.50

1490 NH CARD USED
*SECNO 8.940

3301 BV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 0 815.0 TYPE= 1 TARGET= 814.999

IMMEDIATELY UPSTREAM OF UNION STREET BRIDGE

8.94	5.93	794.23	0.00	794.11	796.14	1.91	.30	.46	788.90
2010.	475.	1535.	0.	108.	123.	0.	153.	54.	794.60
.80	4.40	12.45	0.00	.080	.035	.050	.000	788.30	765.60
.011378	50.	50.	50.	2	0	0	0.00	49.40	815.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 8.920

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 0 815.0 TYPE= 1 TARGET= 814.999

CROSS SECTION AL =UPSTREAM OF UNION STREET BRIDGE

XNR SET VERY HIGH RIGHT OF STA 875 TO LIMIT CONVEYANCE

8.99	7.73	796.03	0.00	796.04	796.63	.60	.36	.13	788.90
2010.	668.	1235.	107.	221.	162.	283.	153.	54.	794.60
.81	3.03	7.63	.38	.080	.045	.351	.000	788.30	688.70
.005008	50.	50.	50.	4	0	0	0.00	326.41	1015.11

1490 NH CARD USED
*SECNO 9.800

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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3470 ENCROACHMENT STATIONS= .0 759.6 TYPE= 1 TARGET= 759.599

CROSS SECTION AM

9.80	7.95	798.95	0.00	798.95	799.24	.29	2.57	.03	792.00	
2010.	576.	995.	439.	295.	170.	308.	166.	59.	792.00	
.86	1.95	5.86	1.43	.110	.045	.084	.000	791.80	656.51	
.002242	800.	810.	750.	4	0	0	0.00	250.16	906.68	

1490 NH CARD USED
*SECNO 10.290
2800 NAT Q1= 357.46 WSEL= 800.06 ENC Q1= 357.46 WSEL= 800.16 RATIO= 0.0000
NAT Q1= 371. RATIOS LOB,CH,ROB= .0247 .5549 .4204 WSEL= 800.16

3470 ENCROACHMENT STATIONS= 439.3 622.8 TYPE= 4 TARGET= .035

CROSS SECTION AN

10.29	7.97	800.07	0.00	800.06	800.56	.49	1.26	.06	793.10	
2010.	15.	1171.	824.	15.	162.	482.	174.	61.	793.10	
.89	1.05	7.23	1.71	.120	.045	.108	.000	792.10	439.30	
.003382	500.	490.	400.	2	0	0	0.00	183.54	622.84	

*SECNO 10.340
2800 NAT Q1= 361.75 WSEL= 801.80 ENC Q1= 361.75 WSEL= 801.90 RATIO= .0000
NAT Q1= 376. RATIOS LOB,CH,ROB= .0246 .5521 .4232 WSEL= 801.90

3470 ENCROACHMENT STATIONS= 439.5 622.7 TYPE= 4 TARGET= .037

CROSS SECTION AN -REPEATED DOWNSTREAM OF PRIVATE BRIDGE-A

10.84	8.10	801.90	0.00	801.80	802.35	.46	1.79	.00	794.80	
2010.	13.	1153.	843.	14.	165.	502.	182.	63.	794.80	
.92	.96	7.00	1.68	.120	.045	.108	.000	793.80	439.49	
.003098	550.	555.	550.	2	0	0	0.00	183.19	622.67	

CCHV= .200 CEHV= .500
1490 NH CARD USED
*SECNO 10.390
2800 NAT Q1= 237.90 WSEL= 801.81 ENC Q1= 237.90 WSEL= 801.91 RATIO= .0000
NAT Q1= 245. RATIOS LOB,CH,ROB= .1705 .8171 .0124 WSEL= 801.91

3301 HV CHANGED MORE THAN HVINS

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

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

3470 ENCROACHMENT STATIONS= 162.0 208.5 TYPE= 4 TARGET= .030

PRIVATE BRIDGE -A -ADJACENT DOWNSTREAM SECTION

10.89	7.85	801.85	801.85	801.81	804.09	2.24	.24	.89	798.00	
2010.	340.	1670.	0.	782.	128.	0.	183.	64.	798.00	
.92	4.17	13.05	0.00	.065	.030	.065	.000	794.00	162.00	
.008791	50.	50.	50.	20	8	0	0.00	46.50	208.50	

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SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.50	2.60	0.00	18.50	0.00	110.00	0.00	794.00	794.00

*SECNO 10.900
2800 NAT Q1= 483.78 WSEL= 804.43 ENC Q1= 483.78 WSEL= 804.53 RATIO= .0000
NAT Q1= 496. RATIOS LOB,CH,ROB= .2611 .6861 .0528 WSEL= 804.53
WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS= 157.2 233.7 TYPE= 4 TARGET= .026

PRIVATE BRIDGE -A =ADJACENT UPSTREAM SECTION

10.90	10.46	804.46	0.00	804.43	805.21	.75	.04	.30	798.00
2010.	506.	1423.	80.	175.	176.	50.	183.	64.	798.00
.93	2.89	8.07	1.60	.065	.030	.065	.000	794.00	157.19
.001788	12.	12.	12.	0	0	4	0.00	76.48	233.68

1490 NH CARD USED
*SECNO 10.990
2800 NAT Q1= 650.01 WSEL= 805.22 ENC Q1= 650.01 WSEL= 805.32 RATIO= .0000
NAT Q1= 668. RATIOS LOB,CH,ROB= .4033 .3371 .2597 WSEL= 805.32

3301 HV CHANGED MORE THAN HVINS

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

3470 ENCROACHMENT STATIONS= 221.5 431.8 TYPE= 4 TARGET= .026

CROSS SECTION AD =UPSTREAM OF PRIVATE BRIDGE=A

10.99	10.10	805.30	0.00	805.22	805.44	.14	.10	.12	795.70
2010.	805.	696.	509.	634.	148.	376.	184.	64.	795.70
.93	1.27	4.70	1.36	.100	.045	.120	.001	795.20	221.50
.000960	50.	90.	100.	2	0	0	0.00	210.30	431.80

CCHV= .1200 CEHV= .300
1490 NH CARD USED
*SECNO 11.720
2800 NAT Q1= 407.66 WSEL= 806.09 ENC Q1= 407.66 WSEL= 806.19 RATIO= .0000
NAT Q1= 422. RATIOS LOB,CH,ROB= .3289 .4035 .2676 WSEL= 806.19

3470 ENCROACHMENT STATIONS= 233.7 427.1 TYPE= 4 TARGET= .033

CROSS SECTION AD =REPEATED =DOWNSTREAM OF PRIVATE BRIDGE=B

11.72	8.57	806.17	0.00	806.09	806.50	.32	1.00	.06	798.10
2010.	648.	841.	520.	398.	125.	275.	199.	67.	798.10
.98	1.63	6.72	1.90	.100	.045	.120	.004	797.60	233.69
.002461	590.	750.	740.	2	0	0	0.00	193.38	427.07

CCHV= .1200 CEHV= .500
*SECNO 11.770

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2800 NAT Q1= 405.80 WSEL= 806.29 ENC Q1= 405.80 WSEL= 806.39 RATIO= .0000
NAT Q1= 485. RATIOS LOB,CH,ROB= .1774 .4326 .3900 WSEL= 806.39

3470 ENCROACHMENT STATIONS= 312.5 459.2 TYPE= 4 TARGET= .039

PRIVATE BRIDGE-B -ADJACENT DOWNSTREAM SECTION

11.77	8.58	806.38	0.00	806.29	806.62	.24	.11	.02	802.10	
2010.	329.	908.	773.	167.	180.	258.	200.	67.	800.80	
.99	1.97	5.05	3.00	.060	.045	.060	.004	797.80	312.54	
.001889	50.	50.	50.	2	0	0	0.00	146.70	459.24	

SPECIAL BRIDGE

5070,VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.50	2.60	0.00	22.00	0.00	134.00	0.00	797.80	797.80

*SECNO 11.780
2800 NAT Q1= 697.38 WSEL= 807.35 ENC Q1= 697.38 WSEL= 807.45 RATIO= 0.0000
NAT Q1= 723. RATIOS LOB,CH,ROB= .2642 .3548 .3810 WSEL= 807.45
WATER EL=CHANGE FROM NATURAL PROFILES BRIDGE

3470 ENCROACHMENT STATIONS= 258.3 467.0 TYPE= 4 TARGET= .036

PRIVATE BRIDGE-B -ADJACENT UPSTREAM SECTION

11.78	9.63	807.43	0.00	807.35	807.55	.11	.02	.03	802.10	
2010.	540.	741.	759.	346.	203.	341.	200.	67.	800.80	
.99	1.47	3.65	2.23	.060	.045	.060	.004	797.80	258.30	
.000839	13.	13.	13.	0	0	4	0.00	208.72	467.02	

1490 NH CARD USED
*SECNO 11.830
2800 NAT Q1= 436.09 WSEL= 807.29 ENC Q1= 436.09 WSEL= 807.39 RATIO= .0000
NAT Q1= 449. RATIOS LOB,CH,ROB= .2100 .4977 .2924 WSEL= 807.39

3470 ENCROACHMENT STATIONS= 352.7 519.6 TYPE= 4 TARGET= .028

CROSS SECTION AP -REREATED --UPSTREAM OF PRIVATE BRIDGE-B

11.83	9.87	807.37	0.00	807.29	807.74	.37	.06	.13	798.90	
2010.	403.	1035.	573.	305.	156.	330.	201.	67.	798.90	
.99	1.32	6.64	1.74	.120	.045	.120	.004	797.50	352.68	
.002163	50.	50.	50.	2	0	0	0.00	166.93	519.60	

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 12.010
2800 NAT Q1= 555.82 WSEL= 807.87 ENC Q1= 555.82 WSEL= 807.97 RATIO= .0000
NAT Q1= 570. RATIOS LOB,CH,ROB= .2481 .4563 .2956 WSEL= 807.97

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= 342.4 521.2 TYPE= 4 TARGET= .026

CROSS SECTION AB

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12.11	80.77	80?.57	0.00	807.87	808.20	.24	.43	.01	798.60	
2010.	486.	943.	581.	417.	171.	391.	206.	68.	798.60	
1.02	01.17	5.51	1.49	.120	.045	.120	.005	797.20	342.36	
.001315	240.	280.	280.	2	0	0	0.00	178.82	521.18	

1490 NH CARD USED
*SECNO 12.760

3470 ENCROACHMENT STATIONS= 325.7 719.5 TYPE= 1 TARGET= -325.700
ELENCL= 803.10 ELENCR= 100000.00

CROSS SECTION AQ

12.76	10.17	808.67	0.00	808.58	808.73	.06	.51	.02	799.10
2010.	1067.	571.	372.	1230.	161.	367.	226.	73.	799.10
1.12	.87	3.55	1.01	.120	.045	.091	.007	798.50	65.16
.000541	650.	650.	600.	2	0	0	0.00	412.35	477.51

1490 NH CARD USED
*SECNO 13.200

3470 ENCROACHMENT STATIONS= 1172.8 1464.5 TYPE= 1 TARGET= -1172.800
ELENCL= 805.60 ELENCR= 100000.00

CROSS SECTION AR

13.70	10.09	809.19	0.00	809.12	809.31	.13	.56	.02	800.20
2010.	819.	738.	453.	844.	167.	295.	254.	80.	800.20
1.22	.97	4.42	1.53	.100	.045	.090	.010	799.10	809.90
.000875	750.	940.	850.	2	0	0	0.00	451.34	1261.24

1490 NH CARD USED
*SECNO 14.950

2800 NAT Q1= 726.65 WSEL= 810.16 ENC Q1= 726.65 WSEL= 810.26 RATIO= .0000
NAT Q1= 752. RATIOS LOB,CH,ROB= .1417 .3136 .5448 WSEL= 810.26

3470 ENCROACHMENT STATIONS= 812.0 1085.5 TYPE= 4 TARGET= .034

CROSS SECTION AS

14.95	9.70	810.20	0.00	810.16	810.30	.10	.98	.00	802.00
2010.	263.	656.	1091.	204.	164.	902.	288.	89.	802.00
1.37	01.29	4.00	1.21	.100	.045	.093	.013	800.50	812.04
.000789	1000.	1250.	1250.	2	0	0	0.00	273.47	1085.51

1490 NH CARD USED
*SECNO 16.350

2800 NAT Q1= 955.14 WSEL= 811.02 ENC Q1= 955.14 WSEL= 811.12 RATIO= .0000
NAT Q1= 999. RATIOS LOB,CH,ROB= .7946 .1885 .0169 WSEL= 811.12

3470 ENCROACHMENT STATIONS= 164.3 722.9 TYPE= 4 TARGET= .044

CROSS SECTION AT

16.35	7.92	811.12	0.00	811.02	811.15	.02	.84	.01	804.00
2010.	1674.	336.	0.	1806.	150.	0.	340.	103.	804.00
1.71	.93	2.24	0.00	.081	.045	.120	.016	803.20	164.33
.000475	1500.	1400.	1200.	2	0	0	0.00	558.57	722.90

1490 NH CARD USED
*SECNO 17.200

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3301 HV CHANGED MORE THAN HVINS

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

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 460.0 566.9 TYPE= 1 TARGET= 106.900

CROSS SECTION AU =DOWNSTREAM OF N.OCCIDENTAL STREET BRIDGE

17.90	7.69	812.09	812.09	812.07	813.99	1.90	2.08	.56	806.50
2010.	309.	1481.	220.	119.	116.	64.	381.	115.	806.50
1.75	2.60	12.77	3.43	.120	.045	.110	.018	804.40	460.00
.012548	1600.	1550.	1300.	4	8	0	0.00	86.07	546.07

CCHV= .400 CEHV= .700
*SECNO 17.950

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 1.0 1784.0 TYPE= 1 TARGET= 1783.000

N.OCCIDENTAL STREET BRIDGE =ADJACENT DOWNSTREAM SECTION

17.95	9.48	814.48	0.00	814.50	814.85	.37	.25	.61	808.00
2010.	109.	1326.	575.	34.	227.	403.	382.	115.	808.20
1.76	3.22	5.83	1.43	.060	.045	.060	.018	805.00	515.73
.002603	50.	50.	50.	4	0	0	0.00	524.93	1488.55

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED
5227 DOWNSTREAM ELEV IS 809.42 ,NOT 814.48 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.25	1.60	2.60	0.00	21.70	5.00	141.90	0.00	805.00	805.00

*SECNO 17.960

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
819.47	816.74	0.00	1439.	572.	142.	142.	813.50	814.80

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 815.70 ELREA= 812.80

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N.OCCIDENTAL STREET BRIDGE -ADJACENT UPSTREAM SECTION

17.96	9.45	814.45	0.00	814.46	814.89	.43	.04	0.00	808.00
2010.	0.	1412.	598.	0.	227.	393.	382.	116.	808.20
1.76	0.00	6.23	1.52	.060	.045	.060	.018	805.00	524.00
.002979	50.	50.	50.	3	0	6	0.00	511.69	1485.63

1490 NH CARD USED
*SECNO 18.000

3265 DIVIDED FLOW

CROSS SECTION AV -UPSTREAM OF N.OCCIDENTAL STREET BRIDGE

18.00	9.68	814.98	0.00	814.98	815.10	.11	.08	.13	806.50
2010.	591.	642.	776.	580.	141.	748.	384.	116.	806.50
1.77	1.02	4.56	1.04	.100	.045	.100	.019	805.30	324.36
.001003	50.	50.	50.	2	0	0	0.00	887.40	1428.07

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00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: EVANS CREEK

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

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**********
    HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
    ERROR CORR =  01,02,03
    MODIFICATION =  50,51,52,53
**********

C
T1 HUD FLOOD INSURANCE STUDIES H-3970  WILLIAMS AND WORKS 85376 JCS/PRS MAY,80
T2 CITY OF TECUMSEH -LENAWEE COUNTY  RIVER RAISIN AND EVANS CREEK
T3      EVANS CREEK-TECUMSEH      100-YEAR FLOODPLAIN UNDER EXISTING CONDITIONS

J1  ICHECK     INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ
          0.        4.        0.        0.    .002273     0.00      0.0       0.   766.000     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  VARIABLE CODES FOR SUMMARY PRINTOUT
     38.000     1.000    34.000     3.000     4.000    27.000    28.000     9.000    42.000     0.000

QT     4.000  1060.000  1360.000  1430.000  1690.000  1480.000     0.000     0.000     0.000     0.000
NC     0.000     0.000     0.000      .100      .300     0.000     0.000     0.000     0.000     0.000
NH     5.000      .045   519.000      .055   530.000      .035   564.000      .055   567.000      .045
NH   593.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000


     CROSS SECTION CA

X1      .120    21.000   530.000   564.000    60.000   140.000   120.000     0.000     0.000     0.000
GR   758.000   220.000   753.000   241.000   745.600   258.000   747.200   267.000   745.400   277.000
GR   746.500   314.000   747.500   347.000   746.400   407.000   746.000   443.000   746.100   487.000
GR   746.000   515.000   747.000   519.000   746.000   527.000   744.100   530.000   743.400   532.000
GR   743.200   540.000   742.500   549.000   743.100   559.000   744.100   564.000   746.700   567.000
GR   754.700   593.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000     0.000
QT     5.000  1150.000  1770.000  2010.000  2450.000  2010.000     0.000     0.000     0.000     0.000
NH     4.000      .035   300.300      .100   557.800      .030  1149.800      .100  1196.700     0.000


     UPSTREAM OF GLOBE DAM

     CROSS SECTION AA

X1     1.370    55.000   557.800  1149.800  1250.000  1450.000  1370.000     0.000     0.000     0.000
X5     5.000   762.670   763.780   764.270   764.930   764.270     0.000     0.000     0.000     0.000
GR   785.000    21.000   781.700    11.503   779.400    25.200   777.000    41.700   774.200    58.400
GR   770.900    76.900   770.200    96.109   769.100   114.800   769.200   145.800   768.900   180.300
GR   768.400   212.100   768.400   232.800   768.000   276.300   765.900   300.300   765.800   337.600
GR   765.300   367.200   765.000   400.400   765.000   428.500   765.800   454.200   764.100   508.100
GR   763.700   554.100   762.800   557.800   760.800   577.800   759.900   597.800   761.400   617.800
GR   760.800   637.800   760.000   657.800   760.000   677.800   760.100   697.800   760.800   717.800
GR   761.700   737.800   761.000   757.800   761.000   777.800   760.900   797.800   759.500   817.800
GR   758.100   837.800   757.800   857.800   756.700   877.800   757.300   897.800   756.400   917.800
GR   758.600   937.800   760.100   957.800   761.500   977.800   761.800   997.800   761.700  1017.800
GR   761.400  1037.800   761.100  1057.800   760.800  1077.800   760.800  1097.800   760.500  1117.800
GR   760.600  1137.800   762.800  1149.800   764.000  1155.900   765.400  1183.500   785.100  1196.700
NH     4.000      .045   107.200      .100   270.400      .045   304.400      .120   770.600     0.000
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CROSS SECTION AB

X1	2.090	42.000	270.400	308.500	730.000	1000.000	720.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	785.000	.400	784.100	22.800	783.400	60.400	783.100	107.200	783.100	143.900
GR	782.200	160.000	783.200	176.700	783.200	176.700	783.200	177.100	783.200	180.000
GR	783.200	180.000	782.100	206.000	779.600	222.400	777.300	233.200	776.300	244.000
GR	774.900	250.000	765.900	266.400	765.100	267.600	762.800	270.400	761.300	275.400
GR	758.200	280.400	759.300	285.400	759.800	290.400	760.000	295.400	759.300	300.400
GR	761.400	303.400	762.800	304.400	764.700	308.500	764.300	336.900	764.000	354.100
GR	762.900	362.500	762.900	453.600	763.600	473.700	763.100	529.300	762.800	537.800
GR	762.800	555.900	763.600	564.400	763.500	633.700	763.600	682.600	763.300	720.900
GR	765.300	730.200	765.000	770.600	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	.090	340.500	.045	368.500	.100	711.800	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	1.400	0.000	0.000	0.000	0.000

CROSS SECTION AC

X1	2.650	334.000	340.500	368.500	550.000	450.000	560.000	0.000	0.000	0.000
X3	20.000	0.000	0.000	241.500	0.000	0.000	0.000	0.000	0.000	0.000
GR	785.000	.400	778.200	15.500	771.200	23.200	767.100	31.400	765.500	40.800
GR	764.200	67.400	763.800	88.000	764.100	107.100	764.400	132.900	765.300	148.000
GR	766.100	168.700	766.500	192.600	766.300	217.900	766.200	241.500	765.900	279.000
GR	765.800	299.000	765.700	334.500	762.700	340.500	761.700	345.500	761.700	350.500
GR	761.600	355.500	761.700	360.500	761.200	365.500	762.700	368.500	766.200	383.700
GR	766.200	438.200	765.900	484.800	765.500	520.700	765.500	564.800	765.500	602.800
GR	765.000	632.200	765.000	658.400	765.500	681.600	785.100	711.800	0.000	0.000
NH	3.000	.090	368.500	.035	388.500	.100	620.300	0.000	0.000	0.000

CROSS SECTION AD @DOWNSTREAM OF MAUMEE STREET@

X1	3.280	35.000	368.500	388.500	600.000	600.000	630.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	330.000	0.000	430.000	0.000	0.000	0.000	0.000
GR	787.000	0.000	783.900	25.200	781.400	47.300	778.400	73.300	774.500	91.800
GR	772.900	112.600	769.700	136.400	768.200	166.300	767.500	215.200	767.900	257.800
GR	768.500	289.600	768.300	313.300	767.000	325.600	767.800	353.600	767.100	357.900
GR	764.600	366.500	764.200	369.500	764.300	373.500	764.100	378.500	764.000	383.500
GR	764.300	387.500	764.600	388.500	767.000	394.400	767.900	400.300	768.100	422.000
GR	769.400	458.600	769.500	485.500	769.600	506.800	769.300	517.400	774.300	533.100
GR	779.400	541.500	781.100	566.300	782.900	580.800	785.200	609.200	787.100	620.300
NC	9.000	0.000	0.000	.500	.800	0.000	0.000	0.000	0.000	0.000
NH	5.000	.050	213.500	.030	297.000	.030	368.700	.030	429.600	.080
NH	654.200	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

MAUMEE STREET BRIDGE H-04 ADJACENT DOWNSTREAM SECTION

X1	3.330	28.000	298.300	368.700	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	8.000	0.000	0.000	0.000	0.000	778.700	779.000	0.000
GR	788.700	0.000	786.000	42.600	784.300	71.700	783.200	102.500	782.500	133.600
GR	781.800	174.500	780.800	213.500	780.800	296.000	774.500	298.300	766.200	313.500
GR	765.300	318.500	765.400	323.500	765.500	328.500	764.700	333.500	764.800	338.500
GR	765.400	343.500	766.000	348.500	766.200	351.500	775.500	368.700	781.000	371.000
GR	781.000	422.600	781.100	497.300	782.100	530.000	783.300	565.500	785.300	591.200
GR	786.400	607.700	787.200	625.800	788.100	654.200	0.000	0.000	0.000	0.000
SB	1.050	1.500	2.800	0.000	25.500	3.000	731.000	2.000	0.000	0.000

MAUMEE STREET BRIDGE H-04 ADJACENT UPSTREAM SECTION

X1	3.340	0.000	0.000	0.000	35.000	35.000	35.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	779.000	780.800	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	780.800	780.800	0.000

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BT	1002.900	783.200	783.200	133.600	782.500	782.500	174.500	781.800	781.800	213.500
BT	780.800	780.800	296.000	780.800	780.800	298.300	780.800	774.500	298.300	780.800
BT	778.700	313.500	780.800	778.700	318.500	780.800	778.800	323.500	780.800	778.800
BT	328.900	780.800	778.800	333.500	780.800	778.800	338.500	780.800	778.800	343.500
BT	780.800	778.800	348.500	780.800	778.800	351.500	780.900	778.900	368.700	781.000
BT	779.000	368.700	781.000	775.500	371.000	781.000	781.000	429.600	781.000	781.000
BT	497.300	781.100	781.100	530.000	782.100	782.100	565.500	783.300	783.300	591.200
BT	785.300	785.300	607.700	786.400	786.400	625.800	787.200	787.200	654.200	788.100
BT	788.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	40000	.100	360.900	.035	406.900	.100	575.900	.070	695.200	0.000

CROSS SECTION AE @UPSTREAM OF MAUMEE STRRET BRIDGE@

X1	3.380	29.000	380.900	456.900	50.000	50.000	50.000	0.000	0.000	0.000
X3	20.000	0.000	0.000	310.000	0.000	480.000	0.000	0.000	0.000	0.000
GR	788.100	0.000	781.500	14.200	775.900	35.500	772.400	52.800	769.200	61.900
GR	769.200	135.100	769.200	207.200	769.200	280.400	767.700	372.200	766.300	380.900
GR	764.600	382.900	764.200	385.900	764.500	390.900	764.000	395.900	763.900	400.900
GR	765.000	405.900	766.300	406.900	767.300	408.100	768.100	412.000	769.100	417.900
GR	769.800	446.700	771.200	480.500	773.600	526.300	775.400	575.900	776.200	620.000
GR	777.100	641.300	778.300	665.700	779.900	679.900	788.100	695.200	0.000	0.000
NC	30000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	40000	.100	55.100	.040	72.100	.120	150.900	.035	733.800	0.000

CROSS SECTION AE

X1	42000	27.000	55.100	72.100	700.000	500.000	620.000	0.000	0.000	0.000
X3	60000	0.000	0.000	0.000	0.000	480.000	0.000	0.000	0.000	0.000
GR	793.800	0.000	793.000	3.100	789.900	10.300	784.800	21.800	780.100	29.500
GR	777.900	37.700	774.300	37.700	773.000	48.600	771.300	55.100	770.400	60.100
GR	769.800	62.100	770.600	65.100	771.000	70.100	771.300	72.100	773.100	74.000
GR	773.600	78.400	773.600	150.900	773.900	209.900	773.700	286.300	773.600	388.500
GR	773.800	493.500	775.500	548.400	776.200	583.700	777.300	618.000	777.200	666.800
GR	777.000	711.000	793.000	733.800	0.000	0.000	0.000	0.000	0.000	0.000
NH	50000	.100	525.800	.090	613.900	.040	638.900	.090	651.900	.040
NH	1026.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AG @DOWNSTREAM OF N.EVANS STREET BRIDGE@

X1	5.010	47.000	613.900	633.900	900.000	850.000	1010.000	0.000	0.000	0.000
X3	0.200	0.000	0.000	525.000	0.000	700.000	0.000	0.000	0.000	0.000
GR	798.000	0.000	793.800	0.000	794.100	65.900	794.600	111.500	793.900	167.300
GR	793.900	217.300	793.700	248.700	793.500	270.300	793.500	270.300	792.900	287.900
GR	792.900	305.300	792.600	353.300	792.000	370.700	790.500	389.500	789.700	419.100
GR	788.000	479.100	789.100	474.000	789.100	502.400	789.400	525.800	788.800	538.700
GR	789.900	574.500	778.800	593.700	778.100	600.200	776.500	605.400	775.800	613.900
GR	775.500	618.900	775.000	621.900	775.100	623.900	775.200	628.900	775.300	633.900
GR	775.800	638.900	778.300	642.600	783.900	651.900	783.900	679.500	785.000	699.700
GR	785.000	700.000	782.700	709.000	781.900	722.700	780.100	751.100	781.600	796.200
GR	783.000	831.600	785.800	865.800	790.900	908.400	794.500	940.100	797.400	957.600
GR	798.000	994.900	798.000	1026.400	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.300	.800	0.000	0.000	0.000	0.000	0.000
NH	50000	.100	525.800	.090	613.900	.035	638.900	.090	651.900	.040
NH	1026.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM OF N.EVANS STREET BRIDGE

X1	5.060	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.200	0.000	0.000	555.000	0.000	695.000	0.000	0.000	0.000	0.000
NH	50000	.030	665.300	.070	693.800	.085	744.600	.030	792.200	.030
NH	1097.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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N.EVANS STREET BRIDGE -ADJACENT DOWNSTREAM SECTION

X1	5.110	36.000	689.500	799.500	50.000	50.000	50.000	0.000	0.000	0.000
X2	20.000	0.000	0.000	789.200	790.500	0.000	0.000	0.000	0.000	0.000
X4	5.000	777.500	720.000	788.400	720.100	788.400	722.900	788.700	756.100	788.800
X4	758.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	798.000	0.000	795.100	0.000	795.100	84.500	795.400	136.400	795.400	221.500
GR	794.600	367.700	793.000	442.400	792.100	497.600	791.400	545.300	790.600	577.700
GR	790.500	603.000	790.600	632.600	790.900	665.300	791.300	688.000	785.200	689.500
GR	785.200	697.500	777.500	715.000	777.500	723.000	775.800	723.000	775.200	728.000
GR	775.000	733.000	774.600	738.000	774.300	743.000	774.700	748.000	774.300	753.000
GR	775.800	756.000	777.300	756.000	777.300	759.000	786.600	791.500	786.600	799.500
GR	792.500	801.500	793.200	845.500	794.800	916.200	796.000	965.100	797.000	1010.700
GR	798.000	1097.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	36.000	0.000	798.000	798.000	0.000	795.100	795.100	84.500	795.100	795.100
BT	136.400	795.400	795.400	221.500	795.400	795.400	367.700	794.600	794.600	442.400
BT	793.000	793.000	497.600	792.100	792.100	545.300	791.400	791.400	577.700	790.600
BT	790.600	603.000	790.500	790.500	632.600	790.600	790.600	665.300	790.900	790.900
BT	688.000	791.300	791.300	689.500	791.300	785.200	689.500	791.300	788.000	697.500
BT	791.400	788.100	715.000	791.600	788.300	723.000	791.700	788.400	728.000	791.700
BT	788.400	733.000	791.800	788.500	738.000	791.800	788.500	743.000	791.900	788.600
BT	748.000	791.500	788.600	753.000	792.000	788.700	756.000	792.000	788.700	759.000
BT	792.900	788.800	791.500	792.400	769.100	799.500	792.500	789.200	799.500	792.500
BT	786.800	801.000	792.500	792.500	845.500	793.200	793.200	916.200	794.800	794.800
BT	965.100	796.000	796.000	1010.700	797.000	797.000	1097.100	798.000	798.000	0.000

N.EVANS STREET BRIDGE -ADJACENT UPSTREAM SECTION

X1	5.120	0.000	0.000	0.000	52.000	52.000	52.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	789.200	790.500	0.000	1.000	0.000	0.000	0.000
NH	5.000	.100	683.600	.120	781.100	.030	806.100	.120	851.000	.055
NH	916.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY UPSTREAM OF N.EVANS STREET BRIDGE

X1	5.160	46.000	781.100	806.100	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	700.000	0.000	900.000	0.000	0.000	0.000	0.000
GR	793.000	0.000	795.600	0.000	795.600	8.000	796.600	59.400	796.000	98.600
GR	795.400	147.700	795.200	191.400	795.600	226.500	795.200	267.300	795.200	290.600
GR	794.900	351.800	794.900	358.200	794.900	390.200	794.300	419.000	793.500	470.800
GR	791.500	500.300	791.500	524.800	791.500	525.300	791.800	563.000	790.200	583.700
GR	789.900	619.000	789.100	662.800	788.800	683.600	785.800	694.600	782.500	712.100
GR	782.100	728.300	780.900	746.800	780.600	761.500	778.800	770.500	778.100	773.800
GR	775.800	781.100	773.800	786.100	773.500	791.100	774.000	796.100	774.500	801.100
GR	775.900	836.100	776.000	815.100	778.100	825.800	794.800	851.000	793.400	858.700
GR	793.400	867.400	793.400	882.000	795.900	886.100	795.900	892.600	797.100	905.400
GR	798.000	916.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AH =UPSTREAM OF N.EVANS STREET BRIDGE

X1	5.270	10.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	30.000	0.000	640.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	20.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	4.000	.000	235.000	.120	311.000	.040	336.000	.120	535.000	0.000

CROSS SECTION AHH INSERTED SECTION AT FILL SITE

X1	5.660	20.000	311.000	336.000	300.000	470.000	450.000	0.000	0.000	0.000
GR	795.000	50.000	790.000	-5.000	787.000	75.000	785.400	160.000	786.000	235.000
GR	785.000	253.000	782.000	275.000	778.900	293.000	779.700	300.000	776.600	311.000

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GR	7[illegible]	3[illegible]	[illegible]	522.000	773.400	550.000	776.600	556.000	778.[illegible]	541.000
GR	781.000	368.000	782.000	380.000	786.000	500.000	790.000	520.000	794.000	535.000
NH	5[illegible]	.100	365.500	.090	410.500	.040	433.500	.090	492.600	.050
NH	711.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AI

X1	6.310	44.000	410.500	433.500	600.000	520.000	650.000	0.000	0.000	0.000
GR	801.000	0.000	794.700	0.000	793.900	46.500	793.400	76.300	793.300	141.100
GR	793.900	170.700	793.000	197.100	793.000	211.600	793.000	212.000	793.000	212.600
GR	791.900	278.600	791.100	279.100	791.100	279.100	789.100	295.100	787.600	314.700
GR	786.400	328.500	784.100	339.500	783.900	354.500	783.200	365.500	784.900	377.200
GR	784.700	386.600	782.000	402.700	781.100	405.900	779.100	410.500	778.300	415.500
GR	778.300	420.500	778.400	425.500	778.900	430.500	779.000	432.500	779.100	433.500
GR	782.000	435.300	782.000	467.900	782.300	492.600	782.100	517.100	782.300	528.200
GR	783.200	535.000	785.500	559.400	784.800	589.000	784.800	632.500	785.100	659.200
GR	786.700	681.600	791.200	702.600	793.900	711.900	801.000	711.900	0.000	0.000
NH	5[illegible]	.100	384.200	.110	474.400	.040	498.400	.100	541.500	.040
NH	844.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	7.100	441.000	539.000	0.000	0.000

CROSS SECTION AII -DOWNSTREAM OF NYC RR BRIDGE

X1	7.980	38.000	474.400	498.400	1400.000	550.000	1670.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	440.000	0.000	540.000	0.000	0.000	0.000	0.000
GR	806.000	0.000	799.900	0.000	799.700	32.700	799.700	73.600	799.200	104.700
GR	798.800	141.600	797.700	162.600	794.300	184.800	791.100	243.200	789.000	268.600
GR	788.800	312.100	788.600	345.200	787.000	384.200	787.000	432.900	787.100	463.100
GR	786.700	467.200	784.100	474.400	783.600	479.400	783.200	484.400	783.000	489.400
GR	782.800	494.400	783.000	497.400	784.100	498.400	786.100	500.800	791.100	508.600
GR	791.100	541.500	790.400	584.000	790.000	627.400	789.900	657.300	791.500	671.800
GR	791.600	690.600	790.000	708.000	790.000	724.600	792.400	742.300	795.900	768.600
GR	796.200	798.600	795.300	832.700	793.800	844.600	0.000	0.000	0.000	0.000
NC	0.200	0.000	0.000	.500	.800	0.000	0.000	0.000	0.000	0.000
NH	5.000	.100	384.200	.110	474.400	.040	498.400	.100	541.500	.040
NH	844.600	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM OF NEW YORK CENTRAL RR BRIDGE

X1	78.030	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	455.000	0.000	515.000	0.000	0.000	0.000	0.000
NH	4.000	.050	480.800	.035	516.000	.050	606.200	.030	1029.400	0.000

NEW YORK CENTRAL RR BRIDGE -ADJACENT DOWNSTREAM SECTION

X1	78.080	23.000	484.000	519.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	794.300	799.400	0.000	0.000	0.000	0.000	0.000
GR	806.000	0.000	798.100	.400	798.100	132.800	798.100	252.100	798.100	407.400
GR	798.100	480.800	798.100	484.000	784.000	497.000	784.000	492.000	783.700	497.000
GR	783.500	502.000	783.700	507.000	783.500	512.000	783.800	516.000	798.100	519.000
GR	798.100	606.200	798.100	707.400	798.100	812.900	798.100	908.700	798.100	1029.000
GR	806.000	1029.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
BT	23.000	0.000	806.000	806.000	.400	798.100	798.100	132.800	798.100	798.100
BT	252.100	798.100	798.100	407.400	798.100	798.100	480.800	798.100	798.100	484.000
BT	798.100	798.100	487.000	798.100	784.000	487.000	798.100	794.800	492.000	798.100
BT	794.800	497.000	798.100	794.800	502.000	798.100	794.800	507.000	798.100	794.800
BT	512.000	798.100	794.800	516.000	798.100	794.800	516.000	798.100	783.800	519.000
BT	798.100	798.100	606.200	798.100	798.100	707.400	798.100	798.100	812.900	798.100
BT	798.100	908.700	798.100	798.100	1029.000	798.100	798.100	1029.400	806.000	806.000

NEW YORK CENTRAL RR BRIDGE -ADJACENT UPSTREAM SECTION

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X1	78.090	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	794.800	799.400	0.000	1.000	0.000	0.000	0.000
NH	4.000	.100	531.700	.040	551.700	.090	617.100	.055	1030.700	0.000

IMMEDIATELY UPSTREAM OF NEW YORK CENTRAL RR BRIDGE

X1	8.130	45.000	531.700	551.700	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	480.000	0.000	600.000	0.000	0.000	0.000	0.000
GR	806.000	0.000	800.200	0.000	799.500	22.800	800.100	88.400	799.900	147.200
GR	799.000	187.100	798.300	213.900	799.800	239.000	799.800	283.000	799.800	337.200
GR	799.400	365.500	798.100	333.600	794.100	392.300	791.800	400.200	790.100	407.400
GR	789.500	421.700	790.300	437.600	789.900	461.400	789.800	483.700	789.800	506.200
GR	788.400	514.500	734.400	531.700	783.900	536.700	783.500	541.700	783.600	546.700
GR	783.600	549.700	784.400	551.700	786.000	563.200	788.200	567.800	791.600	579.000
GR	792.000	617.100	793.000	656.600	794.000	683.500	795.100	705.500	795.100	705.900
GR	795.100	706.300	796.300	738.200	796.300	739.300	796.300	767.100	796.300	778.800
GR	796.900	821.200	796.900	905.500	797.000	953.100	797.200	1002.600	797.300	1030.700

CROSS SECTION AJ -UPSTREAM OF NYC RR BRIDGE

X1	8.180	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	420.000	0.000	660.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	5.000	.100	625.500	.090	729.400	.040	779.100	.090	870.500	.100
NH	1345.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AK -DOWNSTREAM OF UNION STREET BRIDGE

X1	8.690	52.000	729.400	779.100	550.000	550.000	560.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	670.000	0.000	840.000	0.000	0.000	0.000	0.000
GR	809.000	0.000	801.800	.400	801.900	6.800	803.200	126.800	803.200	149.700
GR	803.100	183.600	803.400	217.400	803.800	240.600	805.500	259.900	804.900	289.100
GR	804.200	357.200	804.200	357.600	804.200	401.800	804.700	452.200	804.800	477.400
GR	805.000	490.400	806.500	559.700	804.600	581.700	802.900	601.400	800.900	625.500
GR	796.600	647.100	794.600	667.600	792.400	684.500	790.400	703.800	790.400	724.300
GR	789.000	725.900	787.400	729.400	786.900	734.400	787.300	739.400	787.300	744.400
GR	787.100	749.400	787.000	754.400	787.000	769.400	787.000	774.400	787.400	779.100
GR	791.100	793.000	790.900	843.900	792.300	870.500	795.400	893.000	798.500	907.600
GR	802.900	924.700	802.900	964.600	801.900	999.200	800.500	1042.000	799.800	1076.400
GR	800.300	1134.100	800.900	1178.000	800.900	1219.100	801.600	1254.300	802.000	1283.200
GR	803.200	1316.600	7003.900	1345.800	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.200	.700	0.000	0.000	0.000	0.000	0.000
NH	5.000	.100	625.500	.090	729.400	.040	779.100	.090	870.500	.100
NH	1345.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM OF UNION STREET BRIDGE

X1	8.840	0.000	0.000	0.000	150.000	150.000	150.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	720.000	0.000	790.000	0.000	0.000	0.000	0.000
NH	5.000	.030	703.800	.060	729.500	.030	766.500	.050	816.900	.030
NH	1505.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	1.400	0.000	0.000	0.000	0.000

UNION STREET BRIDGE ADJACENT DOWNSTREAM SECTION

X1	78.890	23.000	729.500	766.500	50.000	50.000	50.000	0.000	0.000	0.000
GR	811.700	0.000	803.400	0.000	803.400	127.600	803.400	233.900	803.400	323.300
GR	803.400	418.900	802.800	493.800	801.900	560.300	801.100	598.900	801.200	660.700
GR	801.200	726.100	801.200	728.000	788.100	729.500	788.100	766.500	801.000	768.000
GR	800.600	816.900	800.000	886.600	801.000	963.000	01.700	1029.600	802.500	105.700

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GR	805.800	1432.400	806.600	1503.600	811.100	1505.700	0.000	0.000	0.000	0.000
BT	30.000	0.000	811.100	811.100	0.000	803.400	803.400	127.600	803.400	803.400
BT	233.900	803.400	803.400	323.400	803.400	803.400	418.900	803.400	803.400	493.800
BT	802.800	802.800	560.300	301.900	801.900	598.900	801.100	801.100	660.700	801.200
BT	801.200	726.100	801.200	801.200	728.000	801.200	801.200	729.500	801.200	788.100
BT	729.500	801.200	798.600	766.500	801.000	798.500	766.500	801.000	788.100	768.000
BT	801.000	801.000	7816.900	800.600	800.600	886.600	800.000	800.000	963.000	801.000
BT	801.000	1029.600	801.700	801.700	1054.800	802.500	802.500	1112.600	804.000	804.000
BT	1179.200	804.600	804.600	1230.800	805.200	805.200	1297.800	805.300	805.300	1343.400
BT	805.800	805.800	1432.400	805.200	805.200	1503.600	806.600	806.600	1505.700	811.100
BT	811.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

UNION STREET BRIDGE ADJACENT UPSTREAM SECTION

X1	8.900	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	0.000	798.600	800.000	0.000	1.000	0.000	0.000	0.000
NH	4.000	.080	793.600	.035	815.000	.100	875.000	1.000	1504.800	0.000

IMMEDIATELY UPSTREAM OF UNION STREET BRIDGE

X1	8.940	43.000	793.600	815.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	815.000	794.600	0.000	0.000	0.000
GR	811.000	0.000	803.900	0.000	803.900	39.800	803.600	154.300	803.500	243.700
GR	804.200	307.100	804.800	346.500	804.500	403.100	804.900	461.500	805.100	532.300
GR	804.600	579.100	804.200	614.200	803.600	653.600	801.900	667.300	797.800	679.100
GR	795.900	689.400	795.300	712.600	795.000	748.500	794.700	761.300	794.700	765.600
GR	790.400	765.600	790.400	792.800	788.900	793.600	788.500	793.500	788.400	803.500
GR	788.400	808.500	788.300	814.500	788.900	815.000	794.600	815.000	793.800	855.500
GR	793.100	893.700	792.600	961.800	792.900	1010.700	800.600	1029.200	806.800	1042.500
GR	807.100	1097.300	806.600	1186.700	807.000	1252.800	806.700	1319.000	806.400	1418.200
GR	806.600	1465.000	806.700	1504.800	811.000	1504.800	0.000	0.000	0.000	0.000
NC	0.000	30.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	4.000	.080	793.600	.045	815.000	.100	875.000	1.000	1504.800	0.000

CROSS SECTION AL UPSTREAM OF UNION STREET BRIDGE

XNR SET VERY HIGH RIGHT OF STA 875 TO LIMIT CONVEYANCE

X1	8.990	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	815.000	794.600	0.000	0.000	0.000
NH	4.000	.110	719.400	.045	742.400	.100	877.300	.035	1094.600	0.000

CROSS SECTION AN

X1	9.000	41.000	719.400	742.400	800.000	750.000	810.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	759.600	797.400	0.000	0.000	0.000
GR	817.000	0.000	813.600	42.600	812.800	92.700	812.200	148.400	812.200	208.000
GR	812.200	267.300	811.300	319.400	810.100	365.900	808.800	403.000	808.000	449.800
GR	807.600	505.200	806.800	527.500	806.600	559.800	806.600	582.900	805.900	602.700
GR	803.800	617.700	799.600	653.700	795.300	672.300	794.100	684.000	792.900	696.600
GR	792.000	719.400	791.000	720.400	791.200	724.400	791.600	729.400	791.600	734.400
GR	791.900	737.400	792.000	742.400	793.400	744.000	794.200	749.300	792.600	752.400
GR	797.400	759.600	795.200	836.200	794.300	877.300	796.200	902.900	804.500	920.200
GR	807.400	930.200	807.900	966.400	809.000	1028.800	809.400	1074.200	809.500	1094.200
GR	814.200	1094.600	0.000	30.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.065	164.600	.120	441.600	.045	463.600	.110	583.900	.100
NH	1056.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AN

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X1	10.290	36.000	441.600	463.630	500.000	400.000	[illegible]			
GR	815.000	.400	813.700	38.300	813.200	77.900	813.100	107.500	812.300	164.600
GR	811.000	223.500	810.000	269.400	809.500	310.900	809.200	352.800	808.500	364.800
GR	807.400	392.500	805.700	413.300	803.500	435.000	795.000	437.900	793.100	441.600
GR	792.200	443.600	792.300	446.600	792.100	448.600	792.400	451.600	793.000	455.600
GR	793.100	463.600	795.000	470.300	797.200	478.200	797.200	508.100	797.200	583.900
GR	797.400	622.000	800.900	657.500	804.800	693.600	806.900	737.600	808.500	774.500
GR	809.000	818.300	809.600	881.700	810.400	948.300	811.200	990.200	811.100	1056.000
GR	815.000	1056.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AN -REPEATED DOWNSTREAM OF PRIVATE BRIDGE-A

X1	10.840	0.000	0.000	0.000	550.000	550.000	555.000	0.000	1.700	0.000
NC	.065	.065	.045	.200	.500	0.000	0.000	0.000	0.000	0.000
NH	3.000	.065	190.000	.030	208.500	.065	770.000	0.000	0.000	0.000

PRIVATE BRIDGE -A =ADJACENT DOWNSTREAM SECTION

X1	10.890	13.000	190.000	208.500	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	800.900	800.900	0.000
GR	811.000	0.000	807.000	140.000	800.000	160.000	798.000	190.000	796.200	190.000
GR	795.900	193.000	794.000	200.000	794.300	204.000	795.300	208.500	798.000	208.500
GR	803.000	215.000	807.000	450.000	811.000	770.000	0.000	0.000	0.000	0.000
SB	10.000	1.500	2.600	0.000	18.500	0.000	110.000	0.000	0.000	0.000

PRIVATE BRIDGE -A =ADJACENT UPSTREAM SECTION

X1	10.900	0.000	0.000	0.000	12.000	12.000	12.000	0.000	0.000	0.000
X2	10.000	0.000	1.000	800.900	802.700	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	802.700	802.700	0.000
BT	13.000	0.000	811.000	811.000	140.000	807.000	807.000	160.000	805.200	800.000
BT	190.000	802.700	798.000	190.000	802.700	800.900	193.000	802.700	800.900	200.000
BT	802.700	800.900	204.000	802.700	800.900	208.500	802.700	800.900	208.500	802.700
BT	798.000	215.000	803.000	803.000	450.000	807.000	807.000	770.000	811.000	811.000
NH	4.000	.100	361.000	.045	376.000	.120	452.700	.100	869.300	0.000

CROSS SECTION AO =UPSTREAM OF PRIVATE BRIDGE-A

X1	10.990	36.000	361.000	376.000	50.000	100.000	99.000	0.000	0.000	0.000
GR	818.000	0.000	809.700	0.000	809.300	39.500	808.600	76.800	806.900	118.600
GR	806.000	160.500	805.100	197.200	804.500	213.300	802.000	219.100	801.700	273.900
GR	801.700	288.700	799.800	304.000	799.800	344.700	799.800	357.700	795.700	361.000
GR	795.900	362.000	795.200	364.000	795.200	366.000	795.500	371.000	795.700	376.000
GR	799.100	402.000	799.700	425.300	801.600	435.200	807.200	440.900	809.300	452.700
GR	811.300	464.300	811.300	509.400	811.100	541.900	811.400	552.000	811.400	552.400
GR	811.300	591.200	810.900	688.600	811.600	779.000	811.500	820.400	811.400	868.800
GR	818.000	869.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	10.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	4.000	.100	361.000	.045	376.000	.120	452.700	.100	869.300	0.000

CROSS SECTION AO -REPEATED -DOWNSTREAM OF PRIVATE BRIDGE-B

X1	11.720	0.000	0.000	0.000	590.000	740.000	750.000	0.000	2.400	0.000
NC	.060	.060	.045	.200	.500	0.000	0.000	0.000	0.000	0.000

PRIVATE BRIDGE-B =ADJACENT DOWNSTREAM SECTION

X1	11.770	13.000	383.000	405.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	803.800	803.800	0.000
GR	810.000	0.000	806.000	260.000	804.000	360.000	802.100	3[illegible]3.000	798.900	3[illegible]3.000

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	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
GR	802.2000	450.800	806.000	475.000	810.000	540.000	0.000	0.000	0.000	0.000
SB	0.2000	1.500	2.600	0.000	22.000	0.000	134.000	0.000	0.000	0.000

PRIVATE BRIDGE-B -ADJACENT UPSTREAM SECTION

X1	11.780	0.000	0.000	0.000	12.500	12.500	12.500	0.000	0.000	0.000
X2	0.2000	0.000	1.000	804.300	806.200	0.000	0.000	0.000	0.000	0.000
X3	10.2000	0.000	0.000	0.000	0.000	0.000	0.000	805.700	805.700	0.000
BT	13.2000	0.000	810.000	810.000	260.000	806.000	806.000	360.000	806.100	804.000
BT	383.2000	806.200	802.100	383.000	806.200	804.300	390.000	806.200	804.300	393.000
BT	806.1200	804.300	403.000	806.200	804.300	405.000	806.200	804.300	405.000	806.200
BT	800.800	405.000	806.100	802.000	475.000	806.100	806.000	540.000	810.000	810.000
NH	4.2000	.120	444.100	.045	461.100	.120	540.800	.100	760.600	0.000

CROSS SECTION AP -REPEATED -UPSTREAM OF PRIVATE BRIDGE-B

X1	11.830	32.000	444.100	461.100	50.000	50.000	50.000	0.000	.300	0.000
GR	821.0100	0.000	812.700	.500	811.600	49.200	810.900	125.400	810.400	206.000
GGR	810.2000	252.800	809.708	287.800	808.200	308.800	806.100	334.600	804.200	357.300
GR	804.1200	376.000	804.100	403.800	803.800	434.800	801.000	437.400	798.600	444.100
GR	797.800	447.100	797.500	449.100	797.200	451.100	797.900	453.100	798.000	458.100
GR	798.600	461.100	801.100	462.900	801.700	466.500	801.700	504.000	800.000	514.300
GR	811.800	540.800	813.400	580.500	813.100	610.300	812.300	684.300	813.200	737.200
GR	813.500	760.100	821.000	760.600	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.2000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	4.2000	.120	444.100	.045	461.100	.120	540.800	.100	760.600	0.000

CROSS SECTION AP

X1	12.2110	0.000	0.000	0.000	240.000	280.000	280.000	0.000	-.300	0.000
NH	4.2000	.120	358.400	.045	374.400	.090	435.100	.100	715.900	0.000

CROSS SECTION AQ

X1	12.760	39.000	358.400	374.400	650.000	600.000	650.000	0.000	0.000	0.000
X3	0.2000	0.000	0.000	325.700	803.100	0.000	0.000	0.000	0.000	0.000
GR	821.2000	0.000	818.000	14.100	813.400	29.000	810.500	38.800	808.800	57.400
GR	808.1300	86.200	808.000	115.700	806.300	145.300	804.100	152.600	803.500	188.100
GR	802.2300	213.300	801.600	240.600	801.100	279.900	801.500	296.400	802.400	314.300
GR	803.2100	325.700	802.700	345.400	802.200	350.500	801.100	354.300	799.100	358.400
GR	798.500	360.400	798.500	363.400	798.500	368.400	798.700	371.400	799.100	374.400
GR	802.800	380.300	803.900	411.000	805.700	435.100	808.000	469.500	811.100	506.800
GR	812.500	539.600	812.900	576.500	813.000	606.800	813.000	607.200	813.000	607.600
GR	812.900	641.300	813.700	688.900	813.100	711.100	812.300	719.500	0.000	0.000
NH	5.2000	.065	714.700	.100	1185.100	.045	1202.100	.090	1269.700	.100
NH	1464.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AR

X1	13.700	42.000	1185.100	1202.100	750.000	850.000	940.000	0.000	0.000	0.000
X3	0.2000	0.000	0.000	1172.800	805.600	0.000	0.000	0.000	0.000	0.000
GR	822.1100	0.000	821.000	51.800	819.300	108.200	816.500	155.000	814.900	205.800
GR	812.2700	251.700	811.600	301.400	811.000	362.100	810.200	410.000	810.200	478.200
GR	810.600	518.800	811.000	558.000	811.200	616.300	811.300	653.600	811.200	714.700
GR	810.900	752.700	809.200	808.400	808.900	847.300	808.800	914.000	808.100	953.300
GR	806.900	982.600	805.200	1006.600	804.700	1032.200	804.500	1100.100	804.600	1132.100
GR	805.800	1172.800	803.200	1180.300	802.100	1182.800	800.200	1185.100	799.200	1187.100
GR	799.100	1190.100	799.100	1195.100	799.700	1200.100	800.200	1202.100	802.900	1214.700
GR	804.7700	1244.800	811.500	1269.700	812.400	1343.500	813.600	1396.200	815.400	1443.100
GR	816.2700	1464.500	822.100	1464.500	0.000	0.000	0.000	0.000	0.000	0.000

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NH	5.000	.065	536.500	.100	849.900	.045	867.900	.100	1018.000	.065
NH	1505.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AS

X1	14.950	44.000	849.900	867.900	1000.000	1250.000	1250.000	0.000	0.000	0.000
GR	824.000	0.000	822.100	28.600	820.500	54.600	818.700	84.400	816.500	124.600
GR	815.300	153.800	814.500	194.000	814.200	245.000	813.300	283.600	813.300	332.600
GR	813.900	367.000	813.500	410.800	813.900	458.200	814.200	491.500	813.100	506.900
GR	812.600	536.500	811.800	612.300	811.500	685.900	812.200	754.200	810.400	780.900
GR	808.400	796.600	807.500	812.900	804.900	823.800	804.100	843.700	802.000	849.900
GR	801.100	854.900	800.500	859.900	800.700	862.900	801.200	865.900	802.000	867.900
GR	804.000	874.500	804.100	874.500	805.200	923.500	806.500	1018.000	808.500	1075.600
GR	809.700	1134.300	811.200	1206.000	812.600	1259.500	813.600	1328.000	814.700	1369.900
GR	816.200	1432.700	817.900	1471.300	818.500	1505.800	824.000	1505.800	0.000	0.000
NH	5.000	.065	429.200	.120	702.900	.045	722.900	.120	735.600	.065
NH	1289.800	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AT

X1	16.350	47.000	702.900	722.900	1500.000	1200.000	1400.000	0.000	0.000	0.000
GR	826.000	0.000	822.900	17.200	820.900	43.100	817.500	64.900	815.500	77.400
GR	813.600	89.200	811.500	108.600	809.800	122.500	809.200	154.300	808.200	187.200
GR	808.000	227.400	807.200	257.200	806.600	294.400	806.700	343.100	807.500	384.100
GR	807.600	429.200	808.500	462.700	809.300	489.200	809.600	510.900	808.600	533.800
GR	808.700	560.000	808.400	591.300	807.800	625.800	806.800	658.200	807.000	671.700
GR	806.500	693.900	806.100	698.600	804.000	702.900	803.600	707.900	803.600	712.900
GR	803.600	717.900	803.200	719.900	804.000	722.900	806.000	728.800	812.600	735.600
GR	813.300	760.900	815.400	793.500	814.800	842.000	814.800	908.600	815.100	984.800
GR	815.400	1052.500	815.400	1125.900	816.400	1183.900	816.400	1238.500	816.500	1272.000
GR	816.500	1289.800	826.100	1239.800	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.065	1291.300	.120	507.800	.045	524.800	.110	851.200	.065
NH	1150.500	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION AU =DOWNSTREAM OF N.OCCIDENTAL STREET BRIDGE

X1	17.900	48.000	507.800	524.800	1600.000	1300.000	1550.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	460.000	0.000	566.900	813.100	0.000	0.000	0.000
GR	828.100	0.000	826.500	10.600	822.800	49.200	821.600	106.600	821.500	158.200
GR	821.300	194.000	820.000	214.900	818.700	234.500	815.300	263.300	813.600	291.300
GR	812.000	317.200	810.000	327.100	808.600	345.600	808.400	376.600	809.500	398.700
GR	810.100	430.600	810.700	458.200	809.800	478.200	809.400	501.900	808.000	503.900
GR	806.900	507.800	806.000	510.800	805.400	512.800	804.800	517.800	804.400	522.800
GR	806.500	524.800	808.000	532.200	813.100	549.500	813.100	566.900	807.700	574.000
GR	807.200	631.900	807.700	631.900	809.300	636.600	813.600	652.000	813.800	672.900
GR	815.300	678.400	815.300	732.700	815.300	772.500	815.600	814.600	815.500	851.200
GR	815.000	885.400	814.700	915.000	813.200	934.200	811.900	995.700	810.800	1054.700
GR	811.900	1103.100	810.300	1149.900	828.100	1150.500	0.000	0.000	0.000	0.000
NC	.060	.060	.045	.400	.700	0.000	0.000	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	7.100	1.000	1784.000	0.000	0.000

N.OCCIDENTAL STREET BRIDGE =ADJACENT DOWNSTREAM SECTION

X1	17.950	44.000	524.000	554.000	50.000	50.000	50.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	808.000	808.200	0.000
GR	828.100	0.000	826.500	34.200	823.600	68.500	821.800	134.600	819.800	178.300
GR	818.500	224.300	817.000	275.500	815.900	318.000	815.200	363.700	815.200	412.100
GR	815.300	465.200	815.700	514.700	809.400	520.000	808.000	524.000	806.400	525.000
GR	805.600	527.000	805.100	529.000	805.000	532.000	806.000	535.000	807.500	536.500
GR	809.000	536.500	809.000	541.500	807.900	541.500	806.400	543.000	806.700	545.000
GR	807.200	548.000	807.600	551.000	807.900	553.000	808.200	554.000	812.400	566.000
GR	815.800	569.500	81 .800	615.900	815.100	6 4.400	815.800	758.400	816.400	80 .800

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	813.300	868.300	813.100	955.600	814.400	1023.700	814.200	1069.700	813.800	1173.700
GR	812.900	1224.900	812.800	1253.400	816.000	1702.000	820.000	1785.000	0.000	0.000
SB	14.250	1.600	2.600	0.000	21.700	5.000	141.900	0.000	0.000	0.000

N.OCCIDENTAL STREET BRIDGE -ADJACENT UPSTREAM SECTION

X1	17.960	0.000	0.000	0.000	50.000	50.000	50.000	0.000	0.000	0.000
X2	0.000	0.000	1.000	813.500	814.800	0.000	0.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	815.700	812.800	0.000
BT	42.000	0.000	828.100	828.100	34.200	826.500	826.500	68.500	823.600	823.600
BT	134.800	821.800	821.800	178.300	819.800	819.800	224.300	818.500	818.500	275.500
BT	817.000	817.000	318.000	815.900	815.900	363.700	815.200	815.200	412.100	815.200
BT	815.200	465.200	815.300	815.300	514.700	815.700	815.700	520.000	815.700	809.400
BT	524.000	815.700	808.000	525.000	815.700	811.000	527.000	815.700	812.600	529.000
BT	815.700	813.300	532.000	815.700	813.300	535.000	815.700	811.600	536.500	815.700
BT	809.000	541.500	815.700	809.000	543.000	815.700	811.600	545.000	815.700	812.900
BT	548.000	815.700	813.500	551.000	815.700	812.800	553.000	815.700	811.100	554.000
BT	815.700	808.200	566.000	815.700	812.400	569.500	815.600	815.600	615.900	814.800
BT	814.800	684.400	815.100	815.100	758.400	815.800	815.800	808.800	816.400	816.400
BT	866.300	813.800	815.800	955.600	815.100	815.100	1023.700	814.400	814.400	1099.700
BT	814.200	814.200	1173.700	813.800	813.800	1224.900	812.900	812.900	1253.400	812.800
BT	812.800	1702.000	816.000	816.000	1785.000	820.000	820.000	0.000	0.000	0.000
NH	3.300	.100	531.800	.045	546.900	.100	1154.500	0.000	0.000	0.000

CROSS SECTION AV -UPSTREAM OF N.OCCIDENTAL STREET BRIDGE

X1	18.000	39.000	531.800	546.900	50.000	50.000	50.000	0.000	0.000	0.000
GR	828.100	0.000	826.500	31.900	824.400	66.900	822.200	137.400	819.600	188.100
GR	819.000	246.400	818.600	274.800	817.300	295.600	814.800	326.700	813.200	352.700
GR	812.300	380.600	812.600	427.900	812.100	470.400	811.100	500.300	809.500	527.100
GR	806.900	531.800	805.500	533.800	805.300	538.800	805.300	540.900	806.500	546.900
GR	808.400	561.700	810.700	572.700	811.500	580.200	811.500	634.100	812.000	664.000
GR	813.900	685.700	815.300	720.300	816.400	753.800	816.700	815.500	816.200	862.800
GR	815.600	901.000	814.600	949.400	814.600	1005.300	814.200	1062.400	813.400	1108.400
GR	813.300	1154.100	815.000	1430.000	816.000	1645.000	820.000	1720.000	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

12.5 x 8.3

12.5 x 8.3

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*PROF 1

CCHV= .700 CEHV= .300

1490 NH CARD USED
*SECNO .720

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
	CROSS SECTION GA								
.12	4.77	747.67	0.00	766.00	747.95	.28	0.00	0.00	744.10
1480.	645.	821.	14.	334.	151.	8.	0.	0.	744.10
0.00	1.93	5.42	1.67	.045	.035	.054	0.000	742.90	265.25
.002249	60.	120.	140.	0	0	8	0.00	304.89	570.14
1490 NH CARD USED									
*SECNO 1.370									
WATER EL=XS CARD= 764.220									
	UPSTREAM OF GLOBE DAM Normal Level 760 860								
	CROSS SECTION AA								
1.37	7.87	764.27	0.00	0.00	764.28	.01	.14	.03	762.80
2010.	3.	2007.	0.	36.	2435.	6.	46.	15.	762.80
.45	.08	.82	.08	.100	.030	.100	.000	756.40	502.71
.000042	1250.	1370.	1450.	0	0	0	0.00	658.51	1161.22
1490 NH CARD USED									
*SECNO 2.090									

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

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

AB could be extended to reflect section 250 ft TW

	CROSS SECTION AB								
2.09	6.26	764.96	764.96	0.00	765.37	.41	.11	.12	762.80
2010.	3.	1126.	881.	3.	167.	653.	76.	25.	764.70
.50	1.02	6.74	1.35	.100	.120	.120	.000	758.70	267.77
.006028	700.	720.	1000.	20	16	0	0.00	460.84	728.61
1490 NH CARD USED									
*SECNO 2.650									
3470 ENCROACHMENT STATIONS= 241.5 711.8 TYPE= 1 TARGET= -241.500									
	CROSS SECTION AC								
2.65	6.22	767.42	0.00	0.00	767.73	.31	2.36	.01	762.70

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2010.	622.	994.	794.	162.	159.	576.	85.	30.	762.70
.54	1.40	6.24	1.38	.090	.045	.100	.000	761.20	241.50
.003616	550.	560.	450.	2	0	0	0.00	443.06	684.56

1490 NH CARD USED
*SECNO 3.280

3301 HV CHANGED MORE THAN HVINS

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

7185 MINIMUM SPECIFIC ENERGY
3720 CRITICAL DEPTH ASSUMED

3470 ENCROACHMENT STATIONS= 330.0 430.0 TYPE= 1 TARGET= 100.000

CROSS SECTION AD @DOWNSTREAM OF MAUMEE STREET@

3.28	5.96	769.96	769.96	0.00	771.69	1.73	3.24	.43	764.60
2010.	346.	1430.	234.	113.	115.	96.	94.	34.	764.60
.56	3.05	12.39	2.43	.090	.035	.100	.000	764.00	330.00
.008294	600.	630.	600.	3	11	0	0.00	100.00	430.00

CCHV= .500 CEHV= .800
1490 NH CARD USED
*SECNO 3.330!

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 778.70 ELREA= 779.00

MAUMEE STREET BRIDGE H-04 ADJACENT DOWNSTREAM SECTION

3.33	6.94	771.64	0.00	0.00	772.39	.75	.21	.49	774.50
2010.	0.	2010.	0.	0.	290.	0.	94.	34.	775.50
.56	30.00	6.93	0.00	.090	.030	.100	.000	764.70	303.53
.002444	50.	50.	50.	5	0	0	0.00	58.03	361.57

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	1.05	1.50	2.80	0.00	25.50	3.00	731.00	2.00	764.70	764.70

*SECNO 3.340
CLASS A LOW FLOW

3420 BRIDGE W.S.= 771.38 BRIDGE VELOCITY= 8.40 CALCULATED CHANNEL AREA= 239.

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
0.00	772.52	.18	0.	2010.	731.	731.	779.00	780.80

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 780.80 ELREA= 780.80

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MAUMEE STREET BRIDGE H-04 ADJACENT UPSTREAM SECTION

3.34	7.12	771.82	0.00	0.00	772.52	.69	.13	0.00	774.50
2010.	0.	2010.	0.	0.	301.	0.	94.	34.	775.50
.56	20.00	6.68	0.00	.090	.030	.100	.000	764.70	303.20
.002204	35.	35.	35.	0	0	0	0.00	58.70	361.90

1490 NH CARD USED
*SECNO 3.380

3470 ENCROACHMENT STATIONS= 310.0 480.0 TYPE= 1 TARGET= 170.000

CROSS SECTION AE -UPSTREAM OF MAUMEE STRRET BRIDGE@

3.38	8.39	772.29	0.00	0.00	772.73	.45	.09	.12	766.30
2010.	456.	1335.	220.	300.	205.	188.	95.	34.	766.30
.57	1.52	6.52	1.17	.100	.035	.100	.000	763.90	310.00
.001620	50.	50.	50.	3	0	0	0.00	170.00	480.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 4.000

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

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

3470 ENCROACHMENT STATIONS= .0 480.0 TYPE= 1 TARGET= 479.999

CROSS SECTION AF

4.00	4.88	774.68	774.68	0.00	775.15	.47	1.85	.01	771.30
2010.	57.	594.	1359.	28.	68.	408.	103.	38.	771.30
.60	12.07	8.70	3.33	.100	.040	.042	.000	769.80	37.70
.008814	700.	620.	500.	20	21	0	0.00	442.30	480.00

1490 NH CARD USED
*SECNO 5.010

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

3470 ENCROACHMENT STATIONS= 525.0 700.0 TYPE= 1 TARGET= 175.000

CROSS SECTION AG -DOWNSTREAM OF N.EVANS STREET BRIDGE@

5.01	6.48	781.48	0.00	0.00	782.88	1.40	7.45	.28	775.80
2010.	336.	1606.	69.	93.	153.	25.	111.	43.	775.80
.63	3.61	10.48	2.77	.090	.040	.090	.000	775.00	589.06
.007125	900.	1010.	850.	3	0	0	0.00	58.82	647.8*

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 CCHV=     .300 CEHV=     .800
 1490 NH CARD USED
 *SECNO 5.060
 3470 ENCROACHMENT STATIONS=      555.0      695.0  TYPE=      1  TARGET=     140.000

          IMMEDIATELY DOWNSTREAM OF N.EVANS STREET BRIDGE

       5.06       6.94     781.94       0.00       0.00     783.20       1.26        .28        .04     775.80
     2010.      314.      1630.       67.      104.      165.       29.      111.       43.     775.80
        .63       3.00       9.90       2.29       .090       .035       .090       .000     775.00     588.27
   .004425        50.        50.        50.          2          0          0       0.00      60.37     648.64

 1490 NH CARD USED
 *SECNO 5.110

 3265 DIVIDED FLOW

 3301 HV CHANGED MORE THAN HVINS

 3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=  790.50 MAX ELLC=  789.20

          N.EVANS STREET BRIDGE -ADJACENT DOWNSTREAM SECTION

       5.11       8.90     783.20       0.00       0.00     783.58        .39        .13        .26     785.20
     2010.         0.     2010.         0.         0.      403.         0.      112.       43.     786.60
        .63      20.00       4.99      20.00       .090       .032       .090       .000     774.30     702.06
   .001620        50.        50.        50.          3          0          0       0.00      71.75     779.60

 *SECNO 5.120

 3265 DIVIDED FLOW

 3370 NORMAL BRIDGE,NRD=   0 MIN ELTRD=  790.50 MAX ELLC=  789.20

          N.EVANS STREET BRIDGE -ADJACENT UPSTREAM SECTION

       5.12       9.00     783.30       0.00       0.00     783.67        .37        .08        .00     785.20
     2010.         0.     2010.         0.         0.      410.         0.      112.       43.     786.60
        .63      20.00       4.90       0.00       .090       .032       .090       .000     774.30     701.83
   .001550        52.        52.        52.          2          0          0       0.00      72.34     779.95

 1490 NH CARD USED
 *SECNO 5.160

 3470 ENCROACHMENT STATIONS=      700.0      900.0  TYPE=      1  TARGET=     200.000

          IMMEDIATELY UPSTREAM OF N.EVANS STREET BRIDGE

       5.16       9.81     783.31       0.00       0.00     783.96        .65        .07        .22     785.80
     2010.      174.      1619.      217.      184.      225.      154.      113.       43.     785.80
        .64       .95       7.20       1.41       .120       .030       .120       .000     773.50     707.82
   .001169        50.        50.        50.          2          0          0       0.00     125.84     833.66

 *SECNO 5.180
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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= 640.0 916.9 TYPE= 1 TARGET= -640.000

CROSS SECTION AH -UPSTREAM OF N.EVANS STREET BRIDGE

5.21	9.88	783.38	0.00	0.00	784.02	.64	.06	.00	775.80
2010.	178.	1615.	217.	189.	226.	156.	113.	43.	775.80
.64	.94	7.13	1.39	.120	.030	.120	.000	773.50	707.46
.001134	50.	50.	50.	0	0	0	0.00	126.30	833.76

CCHV= .200 CEHV= .300

1490 NH CARD USED
*SECNO 5.660

CROSS SECTION AHH INSERTED SECTION AT FILL SITE

5.66	8.96	784.16	0.00	0.00	784.67	.51	.63	.01	776.60
2010.	291.	1430.	289.	193.	213.	248.	119.	45.	776.60
.66	1.51	6.72	1.17	.120	.040	.120	.000	775.20	259.16
.001908	300.	450.	470.	2	0	0	0.00	185.67	444.82

1490 NH CARD USED
*SECNO 6.310

CROSS SECTION AII

6.31	7.26	785.56	0.00	0.00	785.86	.29	1.17	.02	779.10
2010.	188.	962.	860.	149.	161.	442.	128.	48.	779.10
.71	1.26	5.98	1.94	.092	.040	.066	.000	778.30	332.51
.001944	600.	650.	520.	3	0	0	0.00	333.16	665.67

1490 NH CARD USED
*SECNO 7.980

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 440.0 540.0 TYPE= 1 TARGET= 100.000

CROSS SECTION AII -DOWNSTREAM OF NYC RR BRIDGE

7.98	6.69	789.49	0.00	0.00	791.24	1.75	4.95	.44	784.10
2010.	1251.	1710.	48.	100.	149.	20.	141.	52.	784.10
.75	2.52	11.46	2.47	.110	.040	.100	.000	782.80	440.00
.008561	1400.	1670.	550.	4	0	0	0.00	66.09	506.09

CCHV= .200 CEHV= .800

1490 NH CARD USED
*SECNO 8.030

3470 ENCROACHMENT STATIONS= 455.0 515.0 TYPE= 1 TARGET= 60.000

IMMEDIATELY DOWNSTREAM OF NEW YORK CENTRAL RR BRIDGE

8.03	7.37	790.17	0.00	0.00	791.71	1.54	.37	.10	784.10
2010.	196.	1757.	58.	76.	165.	25.	141.	53.	784.10

2ft higher than project stage using Q = 1600 cfs

Use shorter reach

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.075	2.38	10.62	2.81	.110	.040	.100	.000	782.80	435.00
.006422	50.	50.	50.	4	0	0	0.00	52.14	507.14

1490 NH CARD USED
*SECNO 8.080

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= 0 MIN ELTRD= 799.40 MAX ELLC= 794.80

NEW YORK CENTRAL RR BRIDDGE -ADJACENT DOWNSTREAM SECTION

8.08	7.15	790.65	0.00	0.00	792.06	1.41	.29	.06	798.10
2010.	0.	2010.	0.	0.	211.	0.	142.	53.	798.10
.75	0.00	9.54	0.00	.110	.050	.100	.000	783.50	485.58
.005149	50.	50.	50.	2	0	0	0.00	31.85	517.44

*SECNO 8.090

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 799.40 MAX ELLC= 794.80

NEW YORK CENTRAL RR BRIDDGE -ADJACENT UPSTREAM SECTION

8.09	7.69	791.19	0.00	0.00	792.39	1.21	.23	.10	798.10
2010.	0.	2010.	0.	0.	228.	0.	142.	53.	798.10
.75	0.00	8.82	0.00	.110	.050	.100	.000	783.50	485.47
.004064	50.	50.	50.	2	0	0	0.00	32.08	517.55

1490 NH CARD USED
*SECNO 8.130

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 480.0 600.0 TYPE= 1 TARGET= 120.000

IMMEDIATELY UPSTREAM OF NEW YORK CENTRAL RR BRIDGE

8.13	8.71	792.21	0.00	0.00	792.84	.63	.16	.29	784.40
2010.	362.	1306.	342.	188.	168.	140.	142.	53.	784.40
.75	1.92	7.76	2.44	.100	.040	.090	.000	783.50	480.00
.002584	50.	50.	50.	3	0	0	0.00	120.00	600.00

*SECNO 8.180

3470 ENCROACHMENT STATIONS= 420.0 660.0 TYPE= 1 TARGET= 240.000

CROSS SECTION AJ =UPSTREAM OF NYC RR BRIDGE

8.18	9.20	792.70	0.00	0.00	793.07	.37	.10	.13	784.40
2010.	541.	1134.	335.	380.	178.	188.	143.	53.	784.40
.76	1.42	6.36	1.78	.100	.040	.089	.000	783.50	420.00
.001605	50.	50.	50.	2	0	0	0.00	225.10	645.10

CCHV= .100 CEHV= .300

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1470 NH CARD USED
*SECNO 8.690

3470 ENCROACHMENT STATIONS= 670.0 840.0 TYPE= 1 TARGET= 170.000

CROSS SECTION AK =DOWNSTREAM OF UNION STREET BRIDGE

8.69	6.72	793.62	0.00	0.00	793.91	.29	.83	.01	787.40
2010.	179.	1573.	258.	140.	324.	192.	152.	55.	787.40
.79	1.28	4.85	1.34	.090	.040	.090	.000	786.90	675.11
.001401	550.	560.	550.	2	0	0	0.00	164.89	840.00

CCHV= .200 CEHV= .700
1490 NH CARD USED
*SECNO 8.840

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= 720.0 790.0 TYPE= 1 TARGET= 70.000

IMMEDIATELY DOWNSTREAM OF UNION STREET BRIDGE

8.84	6.91	793.81	0.00	0.00	794.25	.44	.23	.10	787.40
2010.	66.	1847.	98.	41.	334.	58.	154.	56.	787.40
.80	1.60	5.53	1.68	.090	.040	.090	.000	786.90	720.00
.001755	150.	150.	150.	2	0	0	0.00	70.00	790.00

1490 NH CARD USED
*SECNO 8.890

3301 HV CHANGED MORE THAN HVINS

UNION STREET BRIDGE ADJACENT DOWNSTREAM SECTION

8.89	5.52	793.62	0.00	0.00	795.12	1.49	.13	.74	788.10
2010.	1.	2007.	2.	2.	204.	2.	154.	56.	788.10
.80	.73	9.82	.88	.060	.030	.050	.000	788.10	728.87
.004022	50.	50.	50.	2	0	0	0.00	38.23	767.14

*SECNO 8.900

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 800.00 MAX ELLC= 798.60

UNION STREET BRIDGE ADJACENT UPSTREAM SECTION

8.90	5.95	794.05	0.00	0.00	795.34	1.28	.18	.04	783.10
2010.	1.	2007.	2.	2.	221.	2.	154.	56.	788.10
.80	.67	9.09	.82	.060	.030	.050	.000	788.10	728.82
.003116	50.	50.	50.	2	0	0	0.00	38.38	767.19

1490 NH CARD USED
*SECNO 8.940

3301 HV CHANGED MORE THAN HVINS

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3470 ENCROACHMENT STATIONS= .0 815.0 TYPE= 1 TARGET= 814.999

IMMEDIATELY UPSTREAM OF UNION STREET BRIDGE

8.94	5.81	794.11	0.00	0.00	796.13	2.02	.28	.51	788.90
2010.	468.	1542.	0.	105.	121.	0.	155.	56.	794.60
.81	4.48	12.77	0.00	.080	.035	.050	.000	788.30	765.60
.012233	50.	50.	50.	2	0	0	0.00	49.40	815.00

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 8.990

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= .0 815.0 TYPE= 1 TARGET= 814.999

CROSS SECTION AL =UPSTREAM OF UNION STREET BRIDGE

XNR SET VERY HIGH RIGHT OF STA 875 TO LIMIT CONVEYANCE

8.99	7.74	796.04	0.00	0.00	796.64	.60	.37	.14	788.90
2010.	669.	1233.	108.	222.	162.	285.	155.	56.	794.60
.81	3.02	7.62	.38	.080	.045	.351	.000	788.30	688.65
.004977	50.	50.	50.	4	0	0	0.00	326.48	1015.13

1490 NH CARD USED
*SECNO 9.800

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

3470 ENCROACHMENT STATIONS= .0 759.6 TYPE= 1 TARGET= 759.599

CROSS SECTION AM

9.80	7.95	798.95	0.00	0.00	799.23	.29	2.57	.03	792.00
2010.	576.	995.	439.	295.	170.	308.	168.	61.	792.00
.87	1.95	5.86	1.43	.110	.045	.084	.000	791.00	656.52
.002243	800.	810.	750.	4	0	0	0.00	250.16	906.67

1490 NH CARD USED
*SECNO 10.290

CROSS SECTION AN

10.29	7.96	800.06	0.00	0.00	800.51	.44	1.22	.05	793.10
2010.	50.	1131.	829.	27.	162.	515.	176.	63.	793.10
.89	1.88	6.99	1.61	.120	.045	.107	.000	792.10	436.17
.003162	500.	490.	400.	2	0	0	0.00	212.83	649.00

*SECNO 10.840

CROSS SECTION AN -REPEATED DOWNSTREAM OF PRIVATE BRIDGE-A

10.84	8.00	801.80	0.00	0.00	802.23	.44	1.73	.00	794.80
2010.	450.	1126.	835.	27.	162.	521.	185.	66.	794.80

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	.993	1.80	6.93	1.60	.120	.043	.107	.000	795.80	430.10
	.003087	550.	555.	550.	2	0	0	0.00	213.17	649.34

CCHV= .200 CEHV= .500

1490 NH CARD USED

*SECNO 10.890

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

PRIVATE BRIDGE -A ADJACENT DOWNSTREAM SECTION

10.89	7.81	801.81	801.81	0.00	804.00	2.19	.22	.88	798.00
2010.	333.	1653.	246.	89.	127.	9.	185.	66.	798.00
.93	3.73	12.97	2.54	.065	.030	.065	.000	794.00	154.82
.007139	50.	50.	50.	20	5	0	0.00	58.64	213.46

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COEQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.000	1.50	2.60	0.00	18.50	0.00	110.00	0.00	794.00	794.00

*SECNO 10.200

3301 HV CHANGED MORE THAN HVINS

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QBR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
809.59	805.68	0.00	703.	1314.	110.	128.	800.90	802.70

PRIVATE BRIDGE -A ADJACENT UPSTREAM SECTION

10.90	10.43	804.43	0.00	0.00	805.14	.70	1.13	0.00	798.00
2010.	521.	1391.	98.	191.	176.	86.	185.	66.	798.00
.93	2.73	7.91	1.14	.065	.030	.065	.000	794.00	147.34
.001726	12.	12.	12.	3	0	4	0.00	151.82	299.16

1490 NH CARD USED

*SECNO 10.990

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

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CROSS SECTION A0 -UPSTREAM OF PRIVATE BRIDGE-A

10.99	10.02	805.22	0.00	0.00	805.35	.13	.10	.11	795.70
2010.	803.	684.	523.	648.	147.	391.	187.	67.	795.70
.94	1.24	4.66	1.34	.100	.045	.120	.001	795.20	192.36
.000956	50.	90.	100.	2	0	0	0.00	246.52	438.88

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 11.720

CROSS SECTION A0 -REPEATED -DOWNSTREAM OF PRIVATE BRIDGE-B

11.72	8.49	806.09	0.00	0.00	806.40	.31	1.00	.05	798.10
2010.	649.	822.	539.	416.	124.	296.	202.	70.	798.10
.99	1.56	6.64	1.82	.100	.045	.120	.004	797.60	215.18
.002431	590.	750.	740.	2	0	0	0.00	222.15	437.33

CCHV= .200 CEHV= .500
*SECNO 11.770

PRIVATE BRIDGE-B -ADJACENT DOWNSTREAM SECTION

11.77	8.49	806.29	0.00	0.00	806.52	.23	.11	.02	802.10
2010.	339.	886.	784.	207.	178.	278.	203.	70.	800.80
.99	1.64	4.98	2.82	.060	.045	.060	.004	797.80	240.88
.001862	50.	50.	50.	2	0	0	0.00	238.90	479.78

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

SB	XK	XKOR	COFQ	RDLEN	BWC	BWP	BAREA	SS	ELCHU	ELCHD
	0.00	1.50	2.60	0.00	22.00	0.00	134.00	0.00	797.80	797.80

*SECNO 11.780
PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QBR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
811.53	806.52	0.00	1076.	947.	134.	143.	804.30	806.20

PRIVATE BRIDGE-B -ADJACENT UPSTREAM SECTION

11.78	9.55	807.35	0.00	0.00	807.46	.11	.94	0.00	802.10
2010.	515.	726.	768.	393.	201.	366.	203.	70.	800.80
1.00	1.31	3.61	2.10	.060	.045	.060	.004	797.80	172.24
.000831	13.	13.	13.	2	0	4	0.00	324.69	496.94

1490 NH CARD USED
*SECNO 11.830

CROSS SECTION AP -REPEATED -UPSTREAM OF PRIVATE BRIDGE-B

11.83	9.79	807.29	0.00	0.00	807.64	.35	.06	.12	798.90
2010.	413.	1011.	586.	332.	154.	349.	204.	71.	798.90
1.00	1.24	6.54	1.68	.120	.045	.120	.004	797.50	323.67

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.002124	50.	50.	50.	2	0	0	0.00	206.33	530.00

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 12.110

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

CROSS SECTION AP

12.11	10.67	807.87	0.00	0.00	808.10	.23	.45	.01	798.60
2010.	491.	926.	594.	443.	169.	411.	210.	72.	798.60
1.02	1.11	5.46	1.44	.120	.045	.120	.005	797.20	312.83
.001308	240.	280.	280.	2	0	0	0.00	219.15	531.98

1490 NH CARD USED
*SECNO 12.760

3470 ENCROACHMENT STATIONS= 325.7 719.5 TYPE= 1 TARGET= -325.700
ELENCL= 803.10 ELENCR= 100000.00

CROSS SECTION AQ

12.76	10.08	808.58	0.00	0.00	808.64	.07	.53	.02	799.10
2010.	1064.	577.	369.	1203.	159.	358.	230.	77.	799.10
1.13	.88	3.63	1.03	.120	.045	.091	.007	798.50	70.41
.000570	650.	650.	600.	2	0	0	0.00	406.00	476.41

1490 NH CARD USED
*SECNO 13.200

3470 ENCROACHMENT STATIONS= 1172.8 1464.5 TYPE= 1 TARGET= -1172.800
ELENCL= 805.60 ELENCR= 100000.00

CROSS SECTION AR

13.70	10.02	809.12	0.00	0.00	809.26	.13	.59	.02	800.20
2010.	809.	746.	454.	820.	166.	292.	257.	84.	800.20
1.22	.99	4.50	1.56	.100	.045	.090	.010	799.10	818.21
.000914	750.	940.	850.	2	0	0	0.00	442.79	1261.00

1490 NH CARD USED
*SECNO 14.950

CROSS SECTION AS

14.95	9.66	810.16	0.00	0.00	810.25	.09	.99	.00	802.00
2010.	284.	641.	1085.	248.	163.	944.	292.	95.	802.00
1.38	1.15	3.93	1.15	.100	.045	.093	.013	800.50	782.82
.000765	1000.	1250.	1250.	2	0	0	0.00	373.26	1156.08

1490 NH CARD USED
*SECNO 16.350

CROSS SECTION AT

16.35	7.82	811.02	0.00	0.00	11.05	.03	.79	.01	804.00

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2010.	1308.	387.	34.	1823.	148.	48.	346.	111.	804.00
1.70	.87	2.62	.71	.080	.045	.120	.016	803.20	112.57
.000443	1500.	1400.	1200.	2	0	0	0.00	621.40	733.97

1490 NH CARD USED

*SECNO 17.900

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

3470 ENCROACHMENT STATIONS= 460.0 566.9 TYPE= 1 TARGET= 106.900

CROSS SECTION AU =DOWNSTREAM OF N.OCCIDENTAL STREET BRIDGE

17.90	17.67	812.07	812.07	0.00	813.99	1.92	1.96	.57	806.50
2010.	308.	1483.	220.	118.	116.	64.	388.	124.	806.50
1.75	2.60	12.82	3.44	.120	.045	.110	.018	804.40	460.00
.012677	1600.	1550.	1300.	20	8	0	0.00	86.02	546.02

CCHV= .400 CEHV= .700

*SECNO 17.950

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

N.OCCIDENTAL STREET BRIDGE =ADJACENT DOWNSTREAM SECTION

17.95	9.50	814.50	0.00	0.00	814.86	.36	.24	.62	808.00
2010.	109.	1320.	580.	34.	228.	409.	389.	124.	808.20
1.75	23.21	5.80	1.42	.060	.045	.060	.018	805.00	515.72
.002569	50.	50.	50.	4	0	0	0.00	527.76	1490.21

SPECIAL BRIDGE

5070 VARIABLE ELCHU OR ELCHD ON CARD SB NOT SPECIFIED

5227 DOWNSTREAM ELEV IS 809.42 ,NOT 814.50 HYDRAULIC JUMP OCCURS DOWNSTREAM (IF LOW FLOW CONTROLS)

SB	XK	XKOR	COEQ	RDLEN	BWC	BHP	BAREA	SS	ELCHU	ELCHD
	1.25	1.60	2.60	0.00	21.70	5.00	141.90	0.00	805.00	805.00

*SECND 17.960

3265 DIVIDED FLOW

PRESSURE AND WEIR FLOW

EGPRS	EGLWC	H3	QWEIR	QPR	BAREA	TRAPEZOID AREA	ELLC	ELTRD
19.48	816.74	0.00	1444.	566.	142.	142.	813.50	814.80

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3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA= 815.70 ELREA= 812.80

N.OCCIDENTAL STREET BRIDGE -ADJACENT UPSTREAM SECTION

17.96	9.46	814.46	0.00	0.00	814.89	.43	.03	0.00	808.00	
2010.	0.	1407.	603.	0.	227.	398.	389.	124.	808.20	
1.75	0.00	6.20	1.52	.060	.045	.060	.018	805.00	524.00	
.002945	50.	50.	50.	3	0	6	0.00	514.18	1487.10	

1490 NH CARD USED
*SECND 18.000

3265 DIVIDED FLOW

CROSS SECTION AV -UPSTREAM OF N.OCCIDENTAL STREET BRIDGE

18.00	9.68	814.98	0.00	0.00	815.10	.11	.08	.13	806.50
2010.	592.	642.	777.	581.	141.	748.	391.	125.	806.50
1.76	1.02	4.56	1.04	.100	.045	.100	.019	805.30	324.33
.001001	50.	50.	50.	2	0	0	0.00	888.00	1428.47

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00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: EVANS CREEK

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  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

EVANS CREEK-TECUMSEH

SUMMARY PRINTOUT

	SECNO	CWSEL	.01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	.120	747.67	312.07	747.95	304.89	0.00	0.00	766.00	742.90
	.120	747.67	312.07	747.95	304.89	0.00	0.00	766.00	742.90
	.120	747.85	355.57	748.13	306.15	0.00	0.00	766.00	742.90
	.120	747.56	287.35	747.83	304.13	0.00	0.00	766.00	742.90
	.120	747.23	222.55	747.51	278.29	0.00	0.00	766.00	742.90
*	1.370	764.27	3099.71	764.28	658.51	0.00	0.00	0.00	756.40
*	1.370	764.27	3099.71	764.28	658.51	0.00	0.00	0.00	756.40
*	1.370	764.93	3981.73	764.94	692.45	0.00	0.00	0.00	756.40
*	1.370	763.78	2506.38	763.79	631.96	0.00	0.00	0.00	756.40
*	1.370	762.67	1365.03	762.68	589.99	0.00	0.00	0.00	756.40
*	2.090	764.96	258.89	765.37	460.84	0.00	0.00	0.00	758.70
*	2.090	764.96	258.89	765.37	460.84	0.00	0.00	0.00	758.70
*	2.090	764.81	235.64	765.55	460.00	0.00	0.00	0.00	758.70
*	2.090	764.82	236.97	765.20	460.05	0.00	0.00	0.00	758.70
*	2.090	764.89	246.91	765.03	460.41	0.00	0.00	0.00	758.70
	2.650	767.42	334.27	767.73	443.06	241.50	711.80	0.00	761.20
	2.650	767.42	334.27	767.73	443.06	241.50	711.80	767.42	761.20
	2.650	767.95	449.96	768.21	443.88	241.50	711.80	0.00	761.20
	2.650	767.20	291.74	767.52	442.72	241.50	711.80	0.00	761.20
	2.650	766.33	157.74	766.83	441.39	241.50	711.80	0.00	761.20
*	3.280	769.96	220.70	771.69	100.00	330.00	430.00	0.00	764.00
*	3.280	769.96	220.70	771.69	100.00	330.00	430.00	769.96	764.00
*	3.280	770.46	264.09	772.40	100.00	330.00	430.00	0.00	764.00
*	3.280	769.66	196.37	771.27	100.00	330.00	430.00	0.00	764.00
	3.280	769.22	164.27	770.13	100.00	330.00	430.00	0.00	764.00
	3.330	771.64	406.56	772.39	58.03	0.00	0.00	0.00	764.70
	3.330	771.64	406.89	772.39	58.04	298.30	368.70	771.64	764.70
	3.330	772.29	485.73	773.15	60.42	0.00	0.00	0.00	764.70
	3.330	771.27	362.93	771.94	56.62	0.00	0.00	0.00	764.70
	3.330	769.97	233.04	770.49	51.85	0.00	0.00	0.00	764.70

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	/SECNO	CWSEL	•01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	3•380	771•82	428•17	772•52	58•70	0•00	0•00	0•00	764•70
	3•380	771•92	440•24	772•59	59•07	0•00	0•00	771•82	764•70
	3•380	772•50	513•11	773•30	61•20	0•00	0•00	0•00	764•70
	3•380	771•43	382•16	772•06	57•25	0•00	0•00	0•00	764•70
	3•380	770•10	245•46	770•59	52•35	0•00	0•00	0•00	764•70
	3•380	772•29	499•41	772•73	170•00	310•00	480•00	0•00	763•90
	3•380	772•37	513•44	772•80	170•00	310•00	480•00	772•29	763•90
	3•380	773•11	626•27	773•56	170•00	310•00	480•00	0•00	763•90
	3•380	771•80	432•37	772•25	170•00	310•00	480•00	0•00	763•90
	3•380	770•22	246•05	770•70	146•71	310•00	480•00	0•00	763•90
*	4•000	774•68	214•09	775•15	442•30	•00	480•00	0•00	769•80
*	4•000	774•71	221•77	775•15	442•30	•00	480•00	774•68	769•80
	4•000	774•86	264•84	775•32	442•30	•00	480•00	0•00	769•80
*	4•000	774•63	199•27	775•04	442•30	•00	480•00	0•00	769•80
*	4•000	774•44	152•23	774•75	442•30	•00	480•00	0•00	769•80
	5•010	781•48	238•12	782•88	58•82	525•00	700•00	0•00	775•00
	5•010	781•39	231•96	782•84	58•53	525•00	700•00	781•48	775•00
	5•010	781•89	267•60	783•66	60•19	525•00	700•00	0•00	775•00
	5•010	781•08	210•22	782•36	57•46	525•00	700•00	0•00	775•00
	5•010	779•92	139•28	780•86	53•55	525•00	700•00	0•00	775•00
	5•060	781•94	302•15	783•20	60•37	555•00	695•00	0•00	775•00
	5•060	781•92	300•52	783•18	60•30	555•00	695•00	781•94	775•00
	5•060	782•56	356•43	784•05	62•49	555•00	695•00	0•00	775•00
	5•060	781•55	270•42	782•68	59•04	555•00	695•00	0•00	775•00
	5•060	780•36	183•71	781•16	55•01	555•00	695•00	0•00	775•00
	5•110	783•20	499•42	783•58	71•75	0•00	0•00	0•00	774•30
	5•110	783•19	498•23	783•57	71•69	689•50	799•50	783•20	774•30
	5•110	784•08	601•15	784•51	76•90	0•00	0•00	0•00	774•30
	5•110	782•67	443•84	783•03	68•69	0•00	0•00	0•00	774•30
	5•110	781•14	303•69	781•42	59•85	0•00	0•00	0•00	774•30
	5•120	783•30	510•47	783•67	72•34	0•00	0•00	0•00	774•30
	5•120	783•28	508•13	783•66	72•22	689•50	799•50	783•30	774•30
	5•120	784•19	613•88	784•60	77•51	0•00	0•00	0•00	774•30
	5•120	782•77	453•93	783•12	69•26	0•00	0•00	0•00	774•30
	5•120	781•22	310•14	781•50	60•31	0•00	0•00	0•00	774•30
	5•160	783•31	587•87	783•96	125•84	700•00	900•00	0•00	773•50
	5•160	783•30	586•44	783•95	125•76	700•00	900•00	783•31	773•50
	5•160	784•19	709•92	784•92	131•86	700•00	900•00	0•00	773•50
	5•160	782•78	521•37	783•39	122•25	700•00	900•00	0•00	773•50
	5•160	781•25	355•65	781•69	89•14	700•00	900•00	0•00	773•50
	5•210	783•38	596•80	784•02	126•30	640•00	916•91	0•00	773•50
	5•210	783•37	595•42	784•01	126•23	640•00	916•91	783•38	773•50
	5•210	784•27	720•07	784•99	132•33	640•00	916•91	0•00	773•50
	5•210	782•86	529•54	783•45	122•70	640•00	916•91	0•00	773•50
	5•210	781•31	361•48	781•75	90•16	640•00	916•91	0•00	773•50

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SECNO	CWSEL	.01K	EG	TOBWID	STENCL	STENCR	WSELK	ELMIN
5.660	784.16	460.17	784.67	185.67	0.00	0.00	0.00	775.20
5.660	784.12	445.58	784.67	113.56	277.58	391.15	784.16	775.20
5.660	785.12	587.70	785.62	222.69	0.00	0.00	0.00	775.20
5.660	783.59	394.53	784.10	164.45	0.00	0.00	0.00	775.20
5.660	781.93	239.89	782.40	103.82	0.00	0.00	0.00	775.20
6.310	785.56	455.88	785.86	333.16	0.00	0.00	0.00	778.30
6.310	785.61	446.46	785.93	241.74	364.33	606.07	785.56	778.30
6.310	786.36	654.58	786.58	348.22	0.00	0.00	0.00	778.30
6.310	785.09	363.88	785.44	301.14	0.00	0.00	0.00	778.30
6.310	783.71	186.88	784.23	160.21	0.00	0.00	0.00	778.30
7.980	789.49	217.24	791.24	66.09	440.00	540.00	0.00	782.80
7.980	789.63	226.40	791.28	66.30	440.00	540.00	789.49	782.80
* 7.980	789.63	226.75	792.08	66.31	440.00	540.00	0.00	782.80
7.980	789.57	222.37	790.88	66.21	440.00	540.00	0.00	782.80
7.980	789.11	192.22	789.79	65.49	440.00	540.00	0.00	782.80
8.030	790.17	250.83	791.71	52.14	455.00	515.00	0.00	782.80
8.030	790.11	247.53	791.68	52.06	455.00	515.00	790.17	782.80
8.030	791.32	331.62	792.90	60.00	455.00	515.00	0.00	782.80
8.030	789.87	231.83	791.20	51.68	455.00	515.00	0.00	782.80
8.030	789.28	195.94	789.98	50.77	455.00	515.00	0.00	782.80
8.080	790.65	280.10	792.06	31.85	0.00	0.00	0.00	783.50
8.080	790.62	278.32	792.05	31.84	0.00	0.00	790.65	783.50
8.080	791.57	341.43	793.19	32.25	0.00	0.00	0.00	783.50
8.080	790.28	257.00	791.51	31.70	0.00	0.00	0.00	783.50
8.080	789.46	207.47	790.15	31.35	0.00	0.00	0.00	783.50
8.090	791.19	315.31	792.39	32.08	0.00	0.00	0.00	783.50
8.090	791.17	314.13	792.38	32.07	0.00	0.00	791.19	783.50
8.090	792.13	379.75	793.52	32.48	0.00	0.00	0.00	783.50
8.090	790.74	285.74	791.80	31.89	0.00	0.00	0.00	783.50
8.090	789.69	221.28	790.32	31.45	0.00	0.00	0.00	783.50
8.130	792.21	395.44	792.84	120.00	480.00	600.00	0.00	783.50
8.130	792.19	394.05	792.83	120.00	480.00	600.00	792.21	783.50
8.130	793.52	545.56	794.08	120.00	480.00	600.00	0.00	783.50
8.130	791.51	328.08	792.17	98.70	480.00	600.00	0.00	783.50
8.130	789.89	201.02	790.49	93.38	480.00	600.00	0.00	783.50
8.180	792.70	501.73	793.07	225.10	420.00	660.00	0.00	783.50
8.180	792.69	500.20	793.06	224.70	420.00	660.00	792.70	783.50
8.180	794.03	738.35	794.30	240.00	420.00	660.00	0.00	783.50
8.180	791.97	401.82	792.41	195.20	420.00	660.00	0.00	783.50
8.180	790.16	220.54	790.68	143.60	420.00	660.00	0.00	783.50
8.690	793.62	536.97	793.91	164.89	670.00	840.00	0.00	786.90
8.690	793.62	536.13	793.91	164.86	670.00	840.00	793.62	786.90
8.690	794.65	722.76	794.93	170.00	670.00	840.00	0.00	786.90
8.690	793.09	450.32	793.38	160.76	670.00	840.00	0.00	786.90
8.690	791.69	262.08	791.97	148.62	670.00	840.00	0.00	786.90

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	SECNO	CWSEL	.01K	EG	TORWID	STENCL	STENCR	WSELK	ELMIN
	8.840	793.81	479.81	794.25	70.00	720.00	790.00	0.00	786.90
	8.840	793.81	479.29	794.25	70.00	720.00	790.00	793.81	786.90
	8.840	794.79	603.75	795.29	70.00	720.00	790.00	0.00	786.90
	8.840	793.30	419.54	793.70	70.00	720.00	790.00	0.00	786.90
	8.840	791.96	276.60	792.25	70.00	720.00	790.00	0.00	786.90
	8.890	793.62	316.96	795.12	38.28	0.00	0.00	0.00	788.10
	8.890	793.63	288.88	795.13	37.00	729.50	766.50	793.62	788.10
	8.890	794.57	472.62	796.19	38.49	0.00	0.00	0.00	788.10
	8.890	793.14	271.59	794.53	38.16	0.00	0.00	0.00	788.10
	8.890	791.86	167.12	792.92	37.87	0.00	0.00	0.00	788.10
	8.900	794.05	360.05	795.34	38.38	0.00	0.00	0.00	788.10
	8.900	794.13	331.68	795.38	37.00	729.50	766.50	794.05	788.10
	8.900	794.93	452.47	796.38	38.58	0.00	0.00	0.00	788.10
	8.900	793.58	312.39	794.76	38.26	0.00	0.00	0.00	788.10
	8.900	792.31	201.62	793.16	37.97	0.00	0.00	0.00	788.10
	8.940	794.11	181.73	796.13	49.40	.00	815.00	0.00	788.30
	8.940	794.23	188.43	796.14	49.40	.00	815.00	794.11	788.30
*	8.940	795.16	249.63	797.02	282.47	.00	815.00	0.00	788.30
	8.940	793.63	155.51	795.60	49.40	.00	815.00	0.00	788.30
*	8.940	792.58	103.82	794.10	49.40	.00	815.00	0.00	788.30
	8.990	796.04	284.91	796.64	326.48	.00	815.00	0.00	788.30
	8.990	796.03	284.04	796.63	326.41	.00	815.00	796.04	788.30
	8.990	796.96	390.31	797.45	334.25	.00	815.00	0.00	788.30
	8.990	795.46	231.62	796.14	306.68	.00	815.00	0.00	788.30
	8.990	794.03	146.55	794.62	49.40	.00	815.00	0.00	788.30
	9.800	798.95	424.43	799.23	250.16	.00	759.60	0.00	791.00
	9.800	798.95	424.50	799.24	250.16	.00	759.60	798.95	791.00
	9.800	799.49	517.95	799.79	253.83	.00	759.60	0.00	791.00
	9.800	798.63	375.18	798.91	248.00	.00	759.60	0.00	791.00
	9.800	797.38	228.52	797.67	96.29	.00	759.60	0.00	791.00
	10.290	800.06	357.46	800.51	212.83	0.00	0.00	0.00	792.10
	10.290	800.07	345.64	800.56	183.54	439.30	622.84	800.06	792.10
	10.290	800.59	430.54	801.07	218.42	0.00	0.00	0.00	792.10
	10.290	799.74	316.33	800.17	209.41	0.00	0.00	0.00	792.10
	10.290	798.66	200.03	799.09	198.10	0.00	0.00	0.00	792.10
	10.840	801.80	361.75	802.23	213.17	0.00	0.00	0.00	793.80
	10.840	801.90	361.14	802.35	183.19	439.49	622.67	801.80	793.80
	10.840	802.37	439.70	802.82	219.08	0.00	0.00	0.00	793.80
	10.840	801.46	319.35	801.89	209.67	0.00	0.00	0.00	793.80
	10.840	800.45	208.24	800.85	199.01	0.00	0.00	0.00	793.80
*	10.890	801.81	237.90	804.00	58.64	0.00	0.00	0.00	794.00
*	10.890	801.85	214.38	804.09	46.50	162.00	208.50	801.81	794.00
*	10.890	802.47	288.95	804.87	61.38	0.00	0.00	0.00	794.00
*	10.890	801.49	214.60	803.48	57.29	0.00	0.00	0.00	794.00
*	10.890	800.92	177.15	802.05	54.93	0.00	0.00	0.00	794.00

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SECNO	CWSEL	.01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
10.900	804.43	483.78	805.14	151.82	0.00	0.00	0.00	794.00
10.900	804.46	475.40	805.21	76.48	157.19	233.68	804.43	794.00
10.900	804.84	538.45	805.70	177.02	0.00	0.00	0.00	794.00
10.900	804.12	447.66	804.75	133.43	0.00	0.00	0.00	794.00
10.900	802.86	321.70	803.31	63.00	0.00	0.00	0.00	794.00
10.990	805.22	650.01	805.35	246.52	0.00	0.00	0.00	795.20
10.990	805.30	648.88	805.44	210.30	221.50	431.80	805.22	795.20
10.990	805.81	761.40	805.96	271.39	0.00	0.00	0.00	795.20
10.990	804.82	580.61	804.94	233.69	0.00	0.00	0.00	795.20
10.990	803.34	360.19	803.46	220.98	0.00	0.00	0.00	795.20
11.720	806.09	407.66	806.40	222.15	0.00	0.00	0.00	797.60
11.720	806.17	405.19	806.50	193.38	233.69	427.07	806.09	797.60
11.720	806.73	501.40	807.04	224.27	0.00	0.00	0.00	797.60
11.720	805.68	352.44	805.99	220.78	0.00	0.00	0.00	797.60
11.720	804.34	205.37	804.71	205.93	0.00	0.00	0.00	797.60
11.770	806.29	465.80	806.52	238.90	0.00	0.00	0.00	797.80
11.770	806.38	462.52	806.62	146.70	312.54	459.25	806.29	797.80
11.770	806.95	600.56	807.16	292.09	0.00	0.00	0.00	797.80
11.770	805.89	396.04	806.12	208.64	0.00	0.00	0.00	797.80
11.770	804.62	237.68	804.87	137.63	0.00	0.00	0.00	797.80
11.780	807.35	697.38	807.46	324.69	0.00	0.00	0.00	797.80
11.780	807.43	693.97	807.55	208.72	258.30	467.02	807.35	797.80
11.780	807.74	801.50	807.86	356.00	0.00	0.00	0.00	797.80
11.780	807.10	636.51	807.20	304.65	0.00	0.00	0.00	797.80
11.780	806.17	442.96	806.25	228.70	0.00	0.00	0.00	797.80
11.830	807.29	436.09	807.64	206.33	0.00	0.00	0.00	797.50
11.830	807.37	432.22	807.74	166.93	352.68	519.60	807.29	797.50
11.830	807.65	483.18	808.09	211.59	0.00	0.00	0.00	797.50
11.830	807.05	406.96	807.36	202.92	0.00	0.00	0.00	797.50
11.830	806.15	305.44	806.37	189.80	0.00	0.00	0.00	797.50
12.110	807.87	555.82	808.10	219.15	0.00	0.00	0.00	797.20
12.110	807.97	554.32	808.20	178.82	342.36	521.18	807.87	797.20
12.110	808.36	628.63	808.63	226.46	0.00	0.00	0.00	797.20
12.110	807.57	513.44	807.78	214.81	0.00	0.00	0.00	797.20
12.110	806.53	380.56	806.68	199.70	0.00	0.00	0.00	797.20
12.760	808.58	841.65	808.64	406.00	325.70	719.50	0.00	798.50
12.760	808.67	864.34	808.73	412.35	325.70	719.50	808.58	798.50
12.760	809.16	992.35	809.23	429.83	325.70	719.50	0.00	798.50
12.760	808.22	757.31	808.29	378.15	325.70	719.50	0.00	798.50
12.760	807.05	516.89	807.11	323.18	325.70	719.50	0.00	798.50
13.700	809.12	664.87	809.26	442.79	1172.80	1464.50	0.00	799.10
13.700	809.19	679.68	809.31	451.34	1172.80	1464.50	809.12	799.10
13.700	809.73	814.79	809.85	472.02	1172.80	1464.50	0.00	799.10
13.700	808.76	585.46	808.89	343.18	1172.80	1464.50	0.00	799.10
13.700	807.56	374.50	807.70	288.91	1172.80	1464.50	0.00	799.10

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	SECNO	CWSEL	•01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	14•950	810•16	726•65	810•25	373•26	0•00	0•00	0•00	800•50
	14•950	810•20	715•70	810•30	273•47	812•04	1085•51	810•16	800•50
	14•950	810•74	885•97	810•83	408•31	0•00	0•00	0•00	800•50
	14•950	809•79	638•83	809•88	353•09	0•00	0•00	0•00	800•50
	14•950	808•65	411•07	808•73	288•00	0•00	0•00	0•00	800•50
	16•350	811•02	955•14	811•05	621•40	0•00	0•00	0•00	803•20
	16•350	811•12	922•47	811•15	558•57	164•33	722•90	811•02	803•20
	16•350	811•58	1203•75	811•61	626•61	0•00	0•00	0•00	803•20
	16•350	810•68	818•21	810•71	618•29	0•00	0•00	0•00	803•20
	16•350	809•65	468•09	809•69	602•30	0•00	0•00	0•00	803•20
*	17•900	812•07	178•52	813•99	86•02	460•00	566•90	0•00	804•40
*	17•900	812•09	179•44	813•99	86•07	460•00	566•90	812•07	804•40
*	17•900	812•66	214•35	814•78	88•01	460•00	566•90	0•00	804•40
*	17•900	811•72	158•45	813•52	84•81	460•00	566•90	0•00	804•40
	17•900	811•25	134•12	812•25	83•22	460•00	566•90	0•00	804•40
	17•950	814•50	396•53	814•86	527•76	0•00	0•00	0•00	805•00
	17•950	814•48	393•99	814•85	524•93	1•00	1784•00	814•50	805•00
*	17•950	815•59	758•57	815•71	1134•55	0•00	0•00	0•00	805•00
	17•950	813•73	274•33	814•33	256•20	0•00	0•00	0•00	805•00
	17•950	812•09	153•81	812•72	47•35	0•00	0•00	0•00	805•00
*	17•960	814•46	370•38	814•89	514•18	0•00	0•00	0•00	805•00
*	17•960	814•45	368•25	814•89	511•69	0•00	0•00	814•46	805•00
*	17•960	815•57	713•27	815•71	953•11	0•00	0•00	0•00	805•00
*	17•960	813•99	290•44	814•55	325•59	0•00	0•00	0•00	805•00
*	17•960	812•84	186•68	813•36	59•62	0•00	0•00	0•00	805•00
	18•000	814•98	635•39	815•10	888•00	0•00	0•00	0•00	805•30
	18•000	814•98	634•72	815•10	887•40	0•00	0•00	814•98	805•30
	18•000	815•69	846•65	815•78	1098•76	0•00	0•00	0•00	805•30
	18•000	814•70	559•98	814•81	816•41	0•00	0•00	0•00	805•30
	18•000	813•45	320•30	813•61	409•47	0•00	0•00	0•00	805•30

SUMMARY OF ERRORS

NOTE SECNO= 1•370 PROFILE= 1 WSEL BASED ON X5 CARD
NOTE SECNO= 1•370 PROFILE= 2 WSEL BASED ON X5 CARD
NOTE SECNO= 1•370 PROFILE= 3 WSEL BASED ON X5 CARD
NOTE SECNO= 1•370 PROFILE= 4 WSEL BASED ON X5 CARD
NOTE SECNO= 1•370 PROFILE= 5 WSEL BASED ON X5 CARD

CAUTION SECNO= 2•090 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2•090 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2•090 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2•090 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2•090 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2•090 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2•090 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2•090 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2•090 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2•090 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2•090 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 2•090 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 2•090 PROFILE= 5 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 2•090 PROFILE= 5 PROBABLE MINIMUM SPECIFIC ENERGY

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00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR ENCROACHED

00BREAK00

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*****************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  ERROR CORR = 01,02,03
  MODIFICATION = 50,51,52,53
*****************************************************

T1 HUD FLOOD INSURANCE STUDIES H-3970  WILLIAMS AND WORKS 85376 JCS/PRS MAY,80
T2 CITY OF TECUMSEH -LENAWEE COUNTY  RIVER RAISIN AND EVANS CREEK
T3      RIVER RAISIN -TECUMSEH   100-YEAR FLOODPLAIN UNDER FLOODWAY CONDITIONS

J1  ICHECK    INO      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
      0.       6.       0.       0.    .002273    0.00     0.0      0.    738.000   0.000

J2  NPROF     IPLOT    PRFVS    XSECV    XSECH    FN       ALLDC    IBW      CHNIM    ITRACE
     2.000    0.000   -1.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000
```

*PROF 12

CCHV= .9300 CEHV= .600
1490 NH CARD USED
*SECNO 449.210

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= 1050.0 1204.0 TYPE= 1 TARGET= 154.000

=DOWNSTREAM OF MILL HWY-EXTD=

449.21	7.29	736.89	0.00	738.00	737.25	.36	0.00	0.00	735.70
4090.	0.	4090.	0.	0.	844.	0.	0.	0.	99999.70
0.00	30.00	4.85	0.00	0.000	.149	0.000	0.000	729.60	1050.00
.002268	20.	0.	0.	0	0	.4	0.00	153.41	1203.41

*SECNO 449.260

3470 ENCROACHMENT STATIONS= 1060.0 1190.0 TYPE= 1 TARGET= 130.000

=IMMEDIATELY DOWNSTREAM OF MILL HWY-EXTD=

449.26	7.28	736.98	0.00	0.00	737.41	.42	.12	.041	00000.00
4090.	0.	4090.	0.	0.	783.	0.	1.	0.	100000.00
.00	30.00	5.23	0.00	0.000	.045	0.000	.000	729.70	1060.00
.002519	50.	50.	50.	1	0	0	0.00	130.00	1190.00

1490 NH CARD USED
*SECNO 449.280

3301 HV CHANGED MORE THAN HVINS

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= 0 MIN ELTRD= 748.50 MAX ELLC= 747.70

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

3470 ENCROACHMENT STATIONS= 900.0 994.0 TYPE= 1 TARGET= 94.000

=MILL HWY-EXTD BRIDGE ABANDONED= =ADJACENT DOWNSTREAM SECTION=

449.28	7.31	737.01	737.01	8.00	739.55	2.54	.20	1.27	732.10
4090.	1203.	3760.	106.	75.	283.	41.	1.	0.	732.50
.00	2.97	13.30	2.60	.120	.045	.120	.000	729.70	901.77
.014204	40.	40.	40.	20	15	0	0.00	90.29	992.06

*SECNO 449.300

3370 NORMAL BRIDGE, NRD= 0 MIN ELTRD= 748.50 MAX ELLC= 747.70

3685 20 TRIALS ATTEMPTED WSEL, CWSEL

3470 ENCROACHMENT STATIONS= 900.0 994.0 TYPE= 1 TARGET= 94.000

MILL HWY-EXTD BRIDGE, ABANDONED -ADJACENT UPSTREAM SECTION

449.30	8.89	738.59	737.01	0.00	740.03	1.45	.16	.33	732.10
4090.	319.	3616.	163.	120.	354.	68.	2.	0.	732.50
.00	2.59	10.23	2.40	.120	.045	.120	.000	729.70	901.51
.006233	78.	78.	78.	23	15	20	0.00	90.84	992.34

1490 NH CARD USED
*SECNO 449.3120

3301 HV CHANGED MORE THAN HVINS

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= 1050.0 1204.0 TYPE= 1 TARGET= 154.000

IMMEDIATELY UPSTREAM OF MILL HWY-EXTD

449.32	16.43	740.33	0.00	0.00	740.48	.15	.05	.39	736.00
4090.	0.	4090.	0.	20.	1329.	0.	3.	0.	100000.00
.01	0.00	3.08	0.00	.120	.149	.120	.000	729.90	1050.00
.000542	40.	40.	40.	2	0	0	0.00	154.00	1204.00

*SECNO 449.3370

3470 ENCROACHMENT STATIONS= 990.0 1260.0 TYPE= 1 TARGET= 270.000

-UPSTREAM OF MILL HWY-EXTD.

449.37	10.37	740.37	0.00	0.00	740.51	.14	.03	.00	736.10
4090.	88.	3954.	48.	166.	1319.	112.	4.	1.	737.50
.01	.53	3.00	.43	.128	.149	.125	.000	730.00	990.00
.000529	50.	50.	50.	2	0	0	0.00	270.00	1260.00

CCHV= .8100 CEHV= .300
1490 NH CARD USED
*SECNO 449.900

3470 ENCROACHMENT STATIONS= 60.0 785.0 TYPE= 1 TARGET= 790.000

CROSS SECTION A1

449.90	16.24	740.64	30.00	0.00	740.76	.11	.25	.00	732.40
4090.	57.	3089.	943.	94.	1000.	1661.	23.	4.	732.40
.07	.61	3.09	.57	.150	.045	.122	.000	730.40	83.95
.000463	330.	550.	180.	2	0	0	0.00	766.05	850.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= .0 550.0 TYPE= 1 TARGET= 549.999

CROSS SECTION A1.5

450.81	10.34	741.14	0.00	0.00	741.27	.13	.51	.01	733.10
4090.	1017.	1889.	1183.	796.	454.	1219.	73.	16.	733.10
.16	.128	4.16	.97	.100	.045	.112	.000	730.80	43.41
.000782	7830.	910.	770.	2	0	0	0.00	506.59	550.00

T490 NH CARD USED
*SECNO 451.350

3470 ENCROACHMENT STATIONS= 7897.6 1170.1 TYPE= 1 TARGET= -897.600
ELENCL= 739.80 ELENCR= 100000.00

CROSS SECTION A2

451.35	10.39	741.49	0.00	0.00	741.90	.40	.54	.08	733.50
4090.	650.	3256.	184.	755.	572.	142.	95.	21.	732.90
.19	.86	5.70	1.29	.117	.045	.150	.000	731.10	712.75
.001483	500.	540.	450.	2	0	0	0.00	442.47	1155.22

T490 NH CARD USED
*SECNO 452.330

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= 560.0 690.0 TYPE= 1 TARGET= 130.000

CROSS SECTION A3 =DOWNSTREAM OF E.RUSSEL ROAD

452.33	9.75	742.95	0.00	0.00	743.49	.54	1.55	.04	734.20
4090.	168.	3727.	195.	140.	607.	156.	120.	27.	734.20
.124	1.20	6.14	1.25	.150	.045	.150	.000	733.20	560.00
.001760	8120.	980.	940.	2	0	0	0.00	128.36	688.36

CCHV= .400 CEHV= .800
*SECNO 452.370

3470 ENCROACHMENT STATIONS= 560.0 690.0 TYPE= 1 TARGET= 130.000

IMMEDIATELY DOWNSTREAM OF E.RUSSEL ROAD

452.37	9.93	743.13	0.00	0.00	743.55	.43	.02	.04	734.20
4090.	282.	3479.	329.	145.	618.	163.	120.	27.	734.20
.24	1.95	5.63	2.02	.085	.045	.085	.000	733.20	560.00
.001440	115.	115.	115.	2	0	0	0.00	129.04	689.04

*SECNO 452.380

3265 DIVIDED FLOW

E.RUSSEL ROAD BRIDGE -ADJACENT DOWNSTREAM SECTION

452.38	9.76	743.16	0.00	0.00	743.82	.66	.08	.18	737.40
4090.	74.	3934.	82.	235.	594.	38.	121.	27.	737.40

.004090	735.	35.	35.	2	0	0	0.00	94.40	1048.33

*SECNO 452.7420

3265 DIVIDED FLOW

E.RUSSEL ROAD BRIDGE -ADJACENT UPSTREAM SECTION

NOTE: X2 CARD OMITTED MAX LOW CHORD ELEV-755.6 MIN ROAD ELEV-751.8

452.42	.96	743.36	0.00	0.00	743.98	.62	.15	.01	737.40
4090.	78.	3926.	87.	37.	608.	41.	121.	27.	737.40
.25	2.09	6.46	2.11	.085	.045	.085	.001	733.40	946.51
.003814	38.	38.	38.	2	0	0	0.00	95.27	1048.78

1490 NH CARD USED

*SECNO 452.7440

3470 ENCROACHMENT STATIONS= 230.0 375.0 TYPE= 1 TARGET= 145.000

IMMEDIATELY UPSTREAM OF E.RUSSEL ROAD

452.44	12.35	743.85	0.00	0.00	744.14	.29	.02	.13	734.20
4090.	521.	3469.	100.	438.	743.	106.	122.	27.	734.20
.25	1.19	4.67	.95	.126	.045	.150	.001	731.50	230.00
.000807	15.	15.	15.	2	0	0	0.00	145.00	375.00

*SECNO 452.7470

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= 200.0 400.0 TYPE= 1 TARGET= 200.000

CROSS SECTION A

452.47	12.43	743.93	0.00	743.93	744.18	.25	.03	.02	734.20
4090.	616.	3347.	157.	566.	748.	198.	123.	27.	734.20
.25	2.09	6.43	.79	.124	.045	.149	.002	731.50	200.00
.000720	35.	35.	35.	0	0	0	0.00	200.00	400.00

CCHV= .1100 CEHV= .300

1490 NH CARD USED

*SECNO 453.7470

2800 NAT Q1= 952.42 WSEL= 744.81 ENC Q1= 952.42 WSEL= 744.91 RATIO= 0.0000

NAT Q1= 983. RATIOS LOB,CH,ROB= .0435 .8084 .1482 WSEL= 744.91

3470 ENCROACHMENT STATIONS= 367.4 970.8 TYPE= 4 TARGET= .031

CROSS SECTION B

453.47	10.01	744.81	0.00	744.81	745.33	.53	1.07	.08	736.60
4090.	114.	3453.	523.	115.	545.	661.	150.	33.	736.60
.30	.99	6.33	.79	.123	.045	.131	.012	734.80	367.38
.001960	1050.	1090.	450.	2	0	0	0.00	603.40	970.78

*SECNO 454.550
2800 NAT Q1= 1475.79 WSEL= 746.15 ENC Q1= 1475.79 WSEL= 746.25 RATIO= .0000
NAT Q1= 21527. RATIOS LOB,CH,ROB= .0202 .4888 .4910 WSEL= 746.25

3470 ENCROACHMENT STATIONS= 44.5 743.4 TYPE= 4 TARGET= .034

CROSS SECTION BA

454.55	111.03	746.23	0.00	746.15	746.38	.15	1.01	.04	737.40	
2090.	115.	2076.	1999.	29.	480.	2197.	177.	40.	737.40	
.39	.51	4.32	.91	.150	.045	.105	.020	735.20	44.52	
.000780	640.	1080.	400.	2	0	0	0.00	698.89	743.41	

1490 NH CARD USED
*SECNO 455.590
2800 NAT Q1= 1602.95 WSEL= 746.92 ENC Q1= 1602.95 WSEL= 747.02 RATIO= .0000
NAT Q1= 21648. RATIOS LOB,CH,ROB= .2702 .6795 .0503 WSEL= 747.02

3470 ENCROACHMENT STATIONS= 430.7 824.7 TYPE= 4 TARGET= .027

CROSS SECTION BB -DOWNSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

455.59	111.40	747.00	0.00	746.92	747.18	.18	.79	.01	738.10	
2090.	2079.	12859.	152.	11162.	719.	162.	241.	55.	738.10	
.49	.93	3.98	.94	.105	.045	.150	.024	735.60	430.70	
.000655	1410.	1040.	1100.	2	0	0	0.00	394.04	824.74	

CCHV= .300 CEHV= .500
*SECNO 455.630
2800 NAT Q1= 1633.28 WSEL= 746.94 ENC Q1= 1633.28 WSEL= 747.04 RATIO= .0000
NAT Q1= 21683. RATIOS LOB,CH,ROB= .3319 .6681 0.0000 WSEL= 747.04

3470 ENCROACHMENT STATIONS= 457.2 805.0 TYPE= 4 TARGET= .030

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE.ELREA= 745.50 ELREA= 748.90

IMMEDIATELY DOWNSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

455.63	111.45	747.05	0.00	746.94	747.20	.16	.02	.01	738.10	
2090.	1351.	27396.	0.	11110.	7226.	0.	242.	55.	738.10	
.49	1.22	3.80	0.00	.085	.045	.085	.024	735.60	457.19	
.000696	120.	30.	20.	2	0	0	0.00	347.81	805.00	

1490 NH CARD USED
*SECNO 455.640
2800 NAT Q1= 1763.99 WSEL= 746.67 ENC Q1= 1763.99 WSEL= 746.77 RATIO= 0.0000
NAT Q1= 780. RATIOS LOB,CH,ROB= .0229 .9771 0.0000 WSEL= 746.77

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

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= 825.0 1064.0 TYPE= 4 TARGET= .021

14112 G.B.

BLOOD ROAD BRIDGE @ABANDONED@ ADJACENT DOWNSTREAM SECTION

455.64	11.46	746.76	0.00	746.67	747.51	.76	.01	.30	749.40
4090.	39.	4081.	0.	22.	584.	0.	242.	55.	749.40
.49	.40	6.98	0.00	.120	.148	.085	.024	735.30	825.02
.002877	10.	10.	10.	2	0	0	0.00	109.21	1063.37

*SECNO 455.660
2800 NAT Q1= 772.28 WSEL= 746.82 ENC Q1= 772.28 WSEL= 746.82 RATIO= 0.0000
NAT Q1= 789. RATIOS LOB,CH,ROB= .0252 .9748 0.0000 WSEL= 746.82

3265 DIVIDED FLOW

3470 ENCROACHMENT STATIONS= 781.31 1064.0 TYPE= 4 TARGET= .021

BLOOD ROAD BRIDGE @ABANDONED@ ADJACENT UPSTREAM SECTION

455.66	11.51	746.81	30.00	746.72	747.55	.74	.04	.00	749.40
4090.	18.	4072.	0.	37.	587.	0.	242.	55.	749.40
.49	.47	6.94	0.00	.120	.148	.085	.024	735.30	813.13
.002826	13.	13.	13.	1	0	0	0.00	123.15	1063.38

1490 NH CARD USED
*SECNO 455.670
2800 NAT Q1= 1282.84 WSEL= 747.48 ENC Q1= 1282.84 WSEL= 747.58 RATIO= .0000
NAT Q1= 813.11 RATIOS LOB,CH,ROB= .2021 .7979 0.0000 WSEL= 747.58

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 699.9 993.0 TYPE= 4 TARGET= .022

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE ELLEA= 745.50 ELREA= 749.40

IMMEDIATELY UPSTREAM OF BLOOD ROAD ABANDONED BRIDGE

455.67	11.79	747.59	0.00	747.48	747.75	.15	.02	.18	743.00
4090.	763.	3327.	0.	724.	961.	0.	242.	55.	743.00
.49	1.05	3.46	0.00	.110	.142	.085	.024	735.80	699.86
.001019	10.	10.	10.	2	0	0	0.00	293.14	993.00

*SECNO 455.770
2800 NAT Q1= 1289.31 WSEL= 747.46 ENC Q1= 1289.31 WSEL= 747.56 RATIO= .0000
NAT Q1= 1320. RATIOS LOB,CH,ROB= .2618 .6723 .0659 WSEL= 747.56

3470 ENCROACHMENT STATIONS= 677.9 992.5 TYPE= 4 TARGET= .023

CROSS SECTION BC -UPSTREAM OF BLOOD ROAD ABANDONED BRIDGE

455.71	11.77	747.57	30.00	747.46	747.86	.29	.05	.07	738.10
4090.	1050.	2813.	227.	998.	544.	184.	244.	55.	738.10
.50	1.05	5.17	1.24	.120	.045	.150	.024	735.80	677.85
.001000	30.	50.	80.	2	0	0	0.00	314.64	992.50

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 456.620

3470 ENCROACHMENT STATIONS= 356.0 760.0 TYPE= 1 TARGET= 725.000

14112 G.B.

CROSS SECTION C

456.62	12.34	748.44	20.00	748.34	748.58	.13	.70	.02	738.90
4090.	32.	20306	2028.	53.	496.	2415.	293.	66.	738.90
.60	6.61	4.07	.84	.150	.045	.105	.027	736.10	35.00
.000670	1980.	910.	880.	2	0	0	0.00	725.00	760.00

1490 NH CARD USED
*SECNO 458.2070

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
0	PLOB	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= .0 242.2 TYPE= 1 TARGET= 242.199

CROSS SECTION D

XNR SET VERY HIGH RIGHT OF STA 441.5 TO LIMIT CONVEYANCE

EFFECTIVE AREA TOP-WIDTH APPROX. 415 FEET DUE TO HIGH N-VALUE

458.07	10.78	749.38	20.00	749.31	749.51	.13	.93	.00	740.20
4090.	651.	20894	1350.	733.	524.	3659.	425.	100.	740.20
.78	.89	3.98	.37	.123	.045	.263	.030	738.60	20.89
.000672	1360.	1450.	1480.	2	0	0	0.00	1277.96	1298.85

CCHV= .700 CEHV= .900
1490 NH CARD USED
*SECNO 458.530

CROSS SECTION DD

458.53	11.03	749.83	0.00	749.77	750.45	.63	.50	.45	740.50
4090.	1287.	34134	390.	151.	494.	200.	456.	107.	740.50
.80	11.91	6.91	1.95	.120	.045	.120	.031	738.80	184.43
.001964	520.	460.	440.	2	0	0	0.00	110.13	294.57

CCHV= .800 CEHV= .300
1490 NH CARD USED
*SECNO 459.030

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 37.00 980.0 TYPE= 1 TARGET= 610.000

CROSS SECTION E

459.03	11.99	751.09	0.00	751.05	751.20	.12	.44	.31	741.20
4090.	1144.	2136.	810.	1330.	578.	1124.	477.	111.	741.20
.86	.86	3.69	.72	.116	.045	.115	.031	739.10	370.00
.000570	510.	500.	440.	2	0	0	0.00	610.00	980.00

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 459.850

14112 G.B.

CROSS SECTION F -DOWNSTREAM OF CHICAGO BLVD--M-50

459.85	112.51	751.51	20.00	751.49	752.12	.61	.77	.15	742.20
4090.	112.	3215.	762.	80.	459.	455.	515.	118.	742.20
.89	1.41	7.01	1.68	.140	.050	.140	.033	739.00	304.67
.002276	800.	820.	840.	2	0	0	0.00	140.33	445.00

CCHV= .300 CEHV= .400
*SECNO 459.890

3470 ENCROACHMENT STATIONS= 300.0 440.0 TYPE= 1 TARGET= 140.000

-IMMEDIATELY DOWNSTREAM OF CHICAGO BLVD--M-50--BRIDGE

459.89	112.77	751.77	20.00	751.74	752.21	.44	.04	.05	742.20
4090.	155.	2898.	1037.	784.	469.	466.	515.	118.	742.20
.90	1.84	6.18	12.23	.085	.045	.085	.033	739.00	304.16
.001391	120.	120.	120.	2	0	0	0.00	135.84	440.00

1490 NH CARD USED
*SECNO 459.900

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

CHICAGO BLVD--M-50--BRIDGE -ADJACENT DOWNSTREAM SECTION

459.90	111.72	752.02	20.00	752.00	752.29	.27	.03	.05	745.60
4090.	124.	3829.	137.	86.	890.	93.	517.	118.	745.60
.90	1.44	4.30	1.47	.050	.045	.050	.033	740.30	391.46
.000345	50.	50.	50.	2	0	0	0.00	135.33	532.70

*SECNO 459.950

3265 DIVIDED FLOW

CHICAGO BLVD--M-50--BRIDGE -ADJACENT UPSTREAM SECTION

-NOTE-X2 CARD OMITTED MAX ELEV LOW CHORD 753.7 MIN LOW ROAD ELEV 753.8

459.95	111.74	752.04	0.00	752.02	752.31	.27	.02	.00	745.60
4090.	124.	3828.	138.	86.	892.	94.	518.	119.	745.60
.90	1.44	4.29	1.47	.050	.045	.050	.033	740.30	391.46
.000342	56.	56.	56.	2	0	0	0.00	135.34	532.71

1490 NH CARD USED
*SECNO 459.960

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

IMMEDIATELY UPSTREAM OF CHICAGO BLVD--M-50--BRIDGE

459.96	12.00	751.70	20.00	751.67	752.56	.86	.01	.24	742.20
4090.	180.	3095.	7814.	98.	364.	431.	519.	119.	742.20
.90	1.84	8.50	1.89	.120	.040	.113	.033	739.70	819.38
.002191	120.	206	206	2	0	0	0.00	187.51	1581.77

CCHV= .0100 CEHV= .300

*SECNO 459.980

3470 ENCROACHMENT STATIONS= 790.0 970.0 TYPE= 1 TARGET= 180.000

CROSS SECTION G -UPSTREAM OF CHICAGO BLVD--M-50

459.98	12.34	752.04	20.00	752.01	752.63	.59	.04	.03	742.20
4090.	1262.	2741.	1087.	104.	375.	403.	519.	119.	742.20
.90	2.51	7.30	2.69	.085	.045	.085	.033	739.70	818.92
.001968	30.	20.	10.	2	0	0	0.00	121.90	940.82

1490 NH CARD USED

*SECNO 460.960

2800 NAT 01= 2836.22 WSEL= 752.94 ENC 01= 2836.22 WSEL= 753.04 RATIO= .0000

NAT 01= 12900. RATIOS LOB,CH,ROB= .2758 .5342 .1900 WSEL= 753.04

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 205.3 776.3 TYPE= 4 TARGET= .022

CROSS SECTION GG

460.96	13.06	752.96	20.00	752.94	752.99	.02	.31	.06	744.00
2610.	5702.	1427.	482.	1764.	856.	1435.	570.	126.	744.00
1.15	.40	1.67	.34	.120	.040	.150	.034	739.90	205.29
.000087	150.	980.	1000.	0	0	0	0.00	571.02	776.30

1490 NH CARD USED

*SECNO 461.800

2800 NAT 01= 1766.50 WSEL= 753.04 ENC 01= 1766.50 WSEL= 753.14 RATIO= .0000

NAT 01= 27817. RATIOS LOB,CH,ROB= .3677 .3969 .2354 WSEL= 753.14

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= 86.2 783.7 TYPE= 4 TARGET= .028

CROSS SECTION H

461.80	13.06	753.06	20.00	753.04	753.10	.04	.11	.00	743.90
2610.	5944.	1075.	4590.	1850.	443.	1277.	639.	138.	743.90
1.32	.51	2.43	.46	.124	.045	.128	.035	740.00	86.21
.000228	820.	840.	740.	2	0	0	0.00	747.46	833.66

1490 NH CARD USED

*SECNO 462.520

2800 NAT 01= 1120.93 WSEL= 753.19 ENC 01= 1120.93 WSEL= 753.29 RATIO= .0000

NAT 01= 31145. RATIOS LOB,CH,ROB= .1824 .6267 .1909 WSEL= 753.29

CROSS SECTION HH

462.52	11.82	753.22	0.00	753.19	753.36	.15	.23	.03	744.70
2610.	453.	1678.	479.	519.	445.	469.	676.	145.	744.70
1.39	.87	3.77	1.02	.122	.045	.106	.035	741.40	153.43
.000558	700.	720.	520.	2	0	0	0.00	223.14	376.58

1490 NH CARD USED
*SECNO 463.280

3470 ENCROACHMENT STATIONS= 306.2 788.3 TYPE= 1 TARGET= 575.100
ELENCL= 575.90 ELENCR= 765.90

CROSS SECTION I

463.28	10.90	753.70	0.00	753.65	753.83	.13	.46	.00	745.60
2610.	652.	1317.	771.	802.	330.	919.	705.	151.	745.60
1.48	.65	3.99	.84	.136	.045	.119	.036	742.80	176.08
.000708	740.	760.	680.	2	0	0	0.00	576.54	752.62

1490 NH CARD USED
*SECNO 464.220
2800 NAT Q1= 831.32 WSEL= 754.50 ENC Q1= 831.32 WSEL= 754.60 RATIO= 0.0000
NAT Q1= 785. RATIOS LOB,CH,ROB= .2637 .6733 .0631 WSEL= 754.60

3470 ENCROACHMENT STATIONS= 812.7 1066.6 TYPE= 4 TARGET= .028

CROSS SECTION II

464.22	9.53	754.53	0.00	754.50	754.71	.18	.87	.02	746.90
2350.	599.	1634.	1176	696.	399.	130.	742.	160.	746.90
1.58	.86	4.10	.90	.131	.045	.150	.037	745.00	812.65
.000825	1020.	1310.	740.	2	0	0	0.00	253.99	1066.64

1490 NH CARD USED
*SECNO 465.530
2800 NAT Q1= 629.34 WSEL= 755.34 ENC Q1= 629.34 WSEL= 755.44 RATIO= .0000
NAT Q1= 660. RATIOS LOB,CH,ROB= .2250 .5357 .2393 WSEL= 755.44

3470 ENCROACHMENT STATIONS= 536.2 1217.9 TYPE= 4 TARGET= .047

CROSS SECTION J

465.53	8.40	755.40	0.00	755.34	755.63	.22	.90	.01	748.90
2350.	495.	1333.	522.	495.	268.	725.	766.	168.	748.90
1.65	1.00	4.97	.72	.115	.045	.117	.038	747.00	536.23
.001420	640.	940.	740.	2	0	0	0.00	681.69	1217.92

1490 NH CARD USED
*SECNO 466.500

SECND	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	QLOSS	BANK ELEV
0	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	AVLOB	AVCH	AVROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

3470 ENCROACHMENT STATIONS= 338.9 1011.1 TYPE= 1 TARGET= 338.900
ELENCL= 556.10 ELENCR= 100000.00

466.50	78.96	756.56	20.00	756.49	756.85	.29	1.21	.02	750.90
12350.	1258.	2067.	125.	451.	450.	36.	788.	178.	750.90
1.71	.57	4.59	.68	.129	.045	.150	.038	747.60	146.32
.001290	7800.	9700.	6000.	2	0	0	0.00	494.07	640.38

1 1490 NH CARD USED
*SECNO 467.440

3 3470 ENCROACHMENT STATIONS= 213.2 547.1 TYPE= 1 TARGET= -213.200
ELENCL= 7612.10 ELENCR= 100000.00

CROSS SECTION L

467.44	52.40	758.00	20.00	757.98	758.32	.31	1.46	.01	752.70
2350.	299.	1890.	161.	246.	379.	141.	807.	187.	752.70
1.78	1.212	4.98	1.14	.117	.045	.109	.039	750.60	306.20
.001878	11120.	940.	900.	2	0	0	0.00	229.28	535.48

1 1490 NH CARD USED
*SECNO 468.570
WATER EL=X5 CARD= 764.270
2800 NAT Q1= 8827.53 WSEL= 764.27 ENC Q1= 8934.60 WSEL= 764.37 RATIO= -.0121
NAT Q1= 7894.2. RATIOS LOB,CH,ROB= .0004 .9992 .0004 WSEL= 764.37

3 3470 ENCROACHMENT STATIONS= 1200 1275.0 TYPE= 4 TARGET= .001

CROSS SECTION LL

468.57	12.97	764.27	0.00	764.27	764.28	.01	.02	.03	762.80
2070.	0.	2070.	0.	0.	3411.	0.	844.	191.	762.80
2.12	20.00	.61	0.00	.085	.085	.085	.039	751.30	12.00
.000006	6800.	760.	6000.	0	0	0	0.00	263.00	275.00

1 1490 NH CARD USED
*SECNO 469.370
2800 NAT Q1= 497.25 WSEL= 763.99 ENC Q1= 510.37 WSEL= 764.09 RATIO= -.0264
NAT Q1= 3513. RATIOS LOB,CH,ROB= .0043 .9941 .0016 WSEL= 764.09

3 3470 ENCROACHMENT STATIONS= 634.9 970.9 TYPE= 4 TARGET= .006

CROSS SECTION M

469.37	16.99	763.99	20.00	763.99	764.44	.46	.03	.14	762.90
2070.	0.	2070.	0.	0.	382.	0.	912.	197.	761.40
2.120	20.00	5.42	20.00	.084	.100	.100	.039	757.00	631.90
.001784	6900.	1560.	1450.	3	0	0	0.00	70.00	701.90

1 1490 NH CARD USED
*SECNO 470.250
2800 NAT Q1= 808.25 WSEL= 765.25 ENC Q1= 808.25 WSEL= 765.35 RATIO= .0000
NAT Q1= 7844. RATIOS LOB,CH,ROB= .0009 .8878 .1113 WSEL= 765.35

3 3470 ENCROACHMENT STATIONS= 400.2 987.5 TYPE= 4 TARGET= .042

CROSS SECTION N

470.25	67.39	765.29	0.00	765.25	765.40	.11	.93	.03	762.90
2070.	0.	1927.	143.	0.	686.	397.	926.	203.	762.80
2.129	20.00	2.81	6.36	.120	.045	.111	.040	757.90	400.20
.000703	5200.	880.	5720.	2	0	0	0.00	587.27	987.47

T490 NH CARD USED
*SECNO 471.600
2800 NAT Q1= 342.22 WSEL= 766.45 ENC Q1= 342.22 WSEL= 766.55 RATIO= .0000
NAT Q1= 3354. RATIOS LOB,CH,ROB= .0247 .8519 .1233 WSEL= 766.55

3301 HV CHANGED MORE THAN HVINS

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= 396.6 535.7 TYPE= 4 TARGET= .033

CROSS SECTION NN

471.60	19.08	766.58	0.00	766.45	767.24	.66	1.67	.16	764.50
2070.	17.	1819.	234.	217.	263.	177.	941.	206.	764.50
2.35	11.03	6.92	1.32	.120	.045	.100	.040	757.50	396.58
.0035.7	1200.	1350.	140.	2	0	0	0.00	139.16	535.75

T490 NH CARD USED
*SECNO 472.090
2800 NAT Q1= 1481.30 WSEL= 767.36 ENC Q1= 1483.79 WSEL= 767.46 RATIO= -.0017
NAT Q1= 31517. RATIOS LOB,CH,ROB= .0067 .9781 .0153 WSEL= 767.46

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 513.8 668.8 TYPE= 4 TARGET= .022

CROSS SECTION O

472.09	10.60	767.50	0.00	767.36	767.55	.05	.25	.06	765.20
2070.	0.	2070.	0.	0.	1183.	0.	951.	208.	765.20
2.43	0.00	1.75	0.00	.090	.100	.100	.040	756.90	513.80
.0001.94	360.	490.	520.	2	0	0	0.00	155.00	668.80

T490 NH CARD USED
*SECNO 474.750
WATER EL=X.5 CARD= 780.660
2800 NAT Q1= 7851.28 WSEL= 780.66 ENC Q1= 8066.39 WSEL= 780.76 RATIO= -.0274
NAT Q1= 78070. RATIOS LOB,CH,ROB= .0002 .9996 .0002 WSEL= 780.76

3470 ENCROACHMENT STATIONS= 417.1 1209.1 TYPE= 4 TARGET= .000

RED MILL POND--TECUMSEH DAM IMPOUNDMENT

CROSS SECTION Q

474.75	7.66	780.66	0.00	780.66	780.66	.00	.05	.00	778.00
2060.	0.	2060.	0.	0.	4781.	0.	1127.	236.	778.00
4.09	20.00	.43	20.00	.040	.050	.050	.041	773.00	417.10
.0002.07	2820.	2580.	3220.	0	0	0	0.00	792.00	1209.10

T490 NH CARD USED
*SECNO 477.650
2800 NAT Q1= 4504.44 WSEL= 780.69 ENC Q1= 4506.57 WSEL= 780.79 RATIO= -.0005
NAT Q1= [illegible]

3470 ENCROACHMENT STATIONS= 7858.9 1705.9 TYPE= 4 TARGET= .042

INLET TO REO MILL POND

CROSS SECTION S

477.65	78.19	780.69	0.00	780.69	780.70	.01	.03	.00	778.00	
2060.	0.	2060.	0.	0.	3446.	0.	1401.	290.	778.00	
5.44	10.00	.60	0.00	.060	.045	.045	.041	772.50	858.90	
.000023	3400.	2000.	3360.	1	0	0	0.00	847.00	1705.90	

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: 100-YEAR NATURAL

00BREAK00

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 HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
 ERROR CORR =  01,02,03
 MODIFICATION =  50,51,52,53
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C
T1 HUD FLOOD INSURANCE STUDIES  H-3970  WILLIAMS AND WORKS 85376 JCS/PRS MAY,80
T2 CITY OF TECUMSEH -LENAWEE COUNTY  RIVER RAISIN AND EVANS CREEK
T3      RIVER RAISIN -TECUMSEH   100-YEAR FLOODPLAIN UNDER EXISTING CONDITIONS
J1  ICHECK    INQ      NINV     IDIR     STRT     METRIC   HVINS    Q        WSEL     FQ
        0.       4.       0.       0.   .002273     0.00     0.0      0.   738.000    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  VARIABLE CODES FOR SUMMARY PRINTOUT
       38.000    1.000   34.000    3.000    4.000   27.000   28.000    9.000   42.000    0.000
NC     20.000    0.000    0.000     .300     .600    0.000    0.000    0.000    0.000    0.000
QT     57.000 2430.000 3600.000 4090.000 5060.000 4090.000    0.000    0.000    0.000    0.000
NH      5.000     .100 1020.000     .150 1060.000     .045 1190.000     .150 1212.000     .120
NH   1395.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

      DOWNSTREAM OF MILL HWY-EXTD.
X1   449.210   18.000 1050.000 1204.000    0.000    0.000    0.000    0.000     .300    0.000
X3    20.000    0.000    0.000 1050.000    0.000 1204.000    0.000    0.000    0.000    0.000
GR   754.000  350.000  740.000  395.000  738.500  440.000  738.000  615.000  738.000 1020.000
GR   736.000 1050.000  732.400 1060.000  731.200 1080.000  732.000 1100.000  731.100 1120.000
GR   729.900 1140.000  730.200 1160.000  731.900 1180.000  732.400 1190.000  737.400 1204.000
GR   738.000 1212.000  740.000 1345.000  754.000 1395.000    0.000    0.000    0.000    0.000

      IMMEDIATELY DOWNSTREAM OF MILL HWY-EXTD
X1   449.260    0.000    0.000    0.000   50.000   50.000   50.000    0.000     .100    0.000
X3    20.000    0.000    0.000 1060.000    0.000 1190.000    0.000    0.000    0.000    0.000
NH     3.000     .120  930.000     .045  975.000     .120  994.000    0.000    0.000    0.000

      MILL HWY-EXTD BRIDGE ABANDONED      -ADJACENT DOWNSTREAM SECTION
X1   449.280   11.000  930.000  975.000   40.000   40.000   40.000    0.000    0.000    0.000
X2    20.000    0.000    0.000  747.700  748.500    0.000    0.000    0.000    0.000    0.000
X3    20.000    0.000    0.000  900.000    0.000  994.000    0.000    0.000    0.000    0.000
GR   747.700  900.000  735.600  902.000  734.300  920.000  732.100  930.000  729.700  940.000
GR   730.300  950.000  730.700  960.000  731.200  970.000  732.500  975.000  736.700  992.000
GR   747.200  994.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000    0.000

      MILL HWY-EXTD BRIDGE ABANDONED      -ADJACENT UPSTREAM SECTION
X1   449.300    0.000    0.000    0.000   18.000   18.000   18.000    0.000    0.000    0.000
X2    20.000    0.000    0.000  747.700  748.500    0.000    0.000    0.000    0.000    0.000
X3    20.000    0.000    0.000  900.000    0.000  994.000    0.000    0.000    0.000    0.000
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14112 G.B.

NH	1395.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY UPSTREAM OF MILL HWY-EXTD

X1	449.320	18.000	1050.000	1204.000	40.000	40.000	40.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	1050.000	0.000	1204.000	0.000	0.000	0.000	0.000
GR	754.000	350.000	740.000	395.000	738.500	440.000	738.000	615.000	738.000	1020.000
GR	736.000	1050.000	732.400	1060.000	731.200	1080.000	732.000	1100.000	731.100	1120.000
GR	729.900	1140.000	730.200	1160.000	731.900	1180.000	732.400	1190.000	737.400	1204.000
GR	738.000	1212.000	740.000	1345.000	754.000	1395.000	0.000	0.000	0.000	0.000

UPSTREAM OF MILL HWY-EXTD.

X1	449.370	0.000	0.000	0.000	50.000	50.000	50.000	0.000	.100	0.000
X3	0.000	0.000	0.000	990.000	0.000	1260.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	5.000	.100	62.600	.150	105.100	.045	215.100	.150	227.400	.120
NH	1529.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION A1

X1	449.900	59.000	105.100	215.100	330.000	180.000	550.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	60.000	0.000	850.000	0.000	0.000	0.000	0.000
GR	754.100	0.000	753.700	62.600	737.800	88.600	735.400	97.600	732.400	105.100
GR	731.300	110.100	731.400	115.100	731.500	120.100	731.500	125.100	731.600	130.100
GR	732.100	135.100	731.600	140.100	731.600	145.100	731.800	150.100	732.000	155.100
GR	732.000	160.100	731.600	165.100	731.300	170.100	730.900	175.100	730.600	180.100
GR	730.400	185.100	730.900	190.100	731.300	195.100	731.800	200.100	732.200	205.100
GR	732.400	215.100	735.400	223.100	737.500	227.400	738.400	265.200	738.700	280.500
GR	738.700	280.900	739.100	357.600	739.000	423.500	738.500	500.000	738.500	583.400
GR	738.400	643.200	738.400	698.200	738.300	746.500	737.000	772.200	732.500	784.500
GR	732.500	784.500	732.500	800.300	736.800	827.200	736.900	899.100	736.700	981.300
GR	738.000	1048.800	740.800	1094.100	743.500	1142.700	743.900	1216.900	744.300	1264.000
GR	742.900	1304.800	740.400	1355.300	737.500	1387.400	736.300	1426.500	735.400	1458.700
GR	736.900	1476.300	740.500	1492.000	745.900	1507.000	754.100	1529.900	0.000	0.000
NH	4.000	.100	198.000	.045	245.000	.120	370.000	.100	450.000	0.000

CROSS SECTION A1.5

X1	450.810	15.000	198.000	245.000	830.000	770.000	910.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	550.000	0.000	0.000	0.000	0.000
GR	754.000	0.000	738.000	54.000	734.000	182.000	733.100	198.000	731.300	210.000
GR	730.800	230.000	731.400	240.000	733.100	245.000	734.000	250.000	738.000	370.000
GR	738.000	725.000	742.000	765.000	746.000	788.000	750.000	910.000	754.000	950.000
NH	6.000	.050	182.000	.090	711.900	.110	1048.800	.150	1071.100	.045
NH	1131.100	.150	1170.100	20.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION A2

X1	451.350	46.000	1071.100	1131.100	500.000	450.000	540.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	897.600	739.800	0.000	0.000	0.000	0.000	0.000
GR	756.000	0.000	753.400	19.100	749.600	37.100	748.800	51.400	748.300	108.700
GR	747.600	182.000	747.600	240.700	748.800	280.700	748.800	352.900	749.000	422.200
GR	749.000	485.200	749.100	525.300	749.000	574.500	747.800	610.200	745.900	644.100
GR	744.700	669.100	743.100	689.700	741.600	711.900	738.500	726.100	736.900	740.600
GR	736.900	764.100	736.900	810.700	738.300	849.100	739.800	897.600	738.900	942.500
GR	739.200	990.200	739.400	1025.000	739.000	1048.800	736.500	1061.200	735.500	1067.500
GR	733.500	1071.100	732.600	1076.100	732.400	1086.100	732.000	1091.100	731.800	1096.100
GR	731.700	1101.100	731.500	1106.100	731.200	1111.100	731.100	1116.100	731.800	1121.100
GR	731.800	1126.100	732.900	1131.100	733.500	1133.100	734.100	1138.200	736.500	1150.100

14112 G.B.

NH	6.000	.080	384.400	.110	559.900	.150	588.300	.045	653.200	.150
NH	689.200	.110	897.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION A3 -DOWNSTREAM OF E.RUSSEL ROAD

X1	452.330	37.000	588.300	653.200	820.000	940.000	980.000	0.000	0.000	0.000
X3	70.000	0.000	0.000	560.000	0.000	690.000	0.000	0.000	0.000	0.000
GR	756.000	0.000	753.700	63.900	750.900	127.800	749.400	201.800	748.500	242.100
GR	744.800	264.200	743.400	305.200	742.300	338.700	742.700	384.400	742.800	443.200
GR	742.200	476.300	742.900	509.400	742.200	538.200	740.900	559.900	737.200	579.600
GR	734.200	588.300	733.700	595.300	733.400	598.300	733.200	603.300	733.300	608.300
GR	733.200	613.300	733.300	618.300	733.500	623.200	733.800	628.200	733.900	638.200
GR	733.700	643.200	733.600	648.200	734.200	653.200	739.500	675.100	743.300	689.700
GR	743.300	733.900	744.700	790.600	745.900	826.900	748.400	843.900	750.900	865.500
GR	753.300	883.300	756.000	897.100	0.000	0.000	0.000	0.000	0.000	0.000
NC	.085	.085	.045	.400	.800	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM DE E.RUSSEL ROAD

X1	452.370	0.000	0.000	0.000	15.000	15.000	15.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	560.000	0.000	690.000	0.000	0.000	0.000	0.000

E.RUSSEL ROAD BRIDGE -ADJACENT DOWNSTREAM SECTION

X1	452.380	34.000	959.000	1035.000	35.000	35.000	35.000	0.000	0.000	0.000
X4	6.000	754.600	969.100	754.500	972.500	733.600	972.500	734.300	1020.400	753.500
X4	1020.400	753.400	1023.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	793.900	0.000	792.500	100.000	789.800	200.000	786.200	300.000	781.600	400.000
GR	775.200	500.000	770.000	600.000	765.000	700.000	760.600	800.000	757.500	900.000
GR	757.200	920.000	752.900	922.300	752.900	926.500	737.400	959.000	734.600	964.000
GR	733.400	969.000	734.100	979.000	734.300	994.000	734.000	1014.000	734.500	1024.000
GR	737.400	1035.000	749.500	1063.000	749.500	1067.700	754.100	1070.000	753.300	1100.000
GR	752.000	1200.000	751.800	1250.000	752.000	1300.000	753.700	1400.000	756.800	1500.000
GR	760.900	1600.000	765.400	1700.000	769.300	1800.000	771.000	1870.000	0.000	0.000
BT	36.000	0.000	793.500	793.500	100.000	792.500	792.500	200.000	789.800	789.800
BT	300.000	786.200	786.200	400.000	781.600	781.600	500.000	775.700	775.700	600.000
BT	770.000	770.000	700.000	765.000	765.000	800.000	760.600	760.600	900.000	757.500
BT	757.900	920.000	757.200	757.200	922.300	757.200	752.900	922.300	757.200	755.600
BT	926.900	757.100	755.300	959.000	756.400	754.800	964.000	756.300	754.700	969.000
BT	756.200	754.600	979.000	756.000	754.400	994.000	755.700	754.100	1014.000	755.300
BT	753.800	1024.000	755.100	753.400	1035.000	754.800	753.200	1063.000	754.200	752.600
BT	1067.200	754.100	752.200	1067.700	754.100	749.500	1070.000	754.100	754.100	1100.000
BT	753.300	753.300	1200.000	752.000	752.000	1250.000	751.800	751.800	1300.000	752.000
BT	752.000	1400.000	753.700	753.700	1500.000	756.800	756.800	1600.000	760.900	760.900
BT	1700.000	765.400	765.400	1800.000	769.300	769.300	1870.000	771.000	771.000	0.000

E.RUSSEL ROAD BRIDGE -ADJACENT UPSTREAM SECTION

NOTE: X2 CARD OMITTED MAX LOW CHORD ELEV-755.6 MIN ROAD ELEV-751.8

X1	452.420	0.000	0.000	0.000	38.000	38.000	38.000	0.000	0.000	0.000
NH	7.000	.080	95.600	.120	283.000	.150	293.600	.045	359.600	.150
NH	395.600	.120	499.300	.080	720.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY UPSTREAM OF E.RUSSEL ROAD

X1	452.440	36.000	293.600	359.600	15.000	15.000	15.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	230.000	0.000	375.000	0.000	0.000	0.000	0.000
GR	756.000	0.000	752.900	22.900	751.400	38.300	750.500	59.600	746.000	73.400
GR	742.300	195.600	741.400	120.400	741.800	165.400	741.800	201.700	737.200	232.900

GR	732.900	313.600	732.700	318.600	732.700	325.600	735.200	328.600	732.200	333.600
GR	731.800	338.600	731.500	343.600	732.100	348.600	732.900	353.600	733.300	358.600
GR	734.200	359.600	739.100	373.000	741.000	395.600	740.700	430.700	741.900	466.600
GR	744.800	499.300	745.600	537.200	745.400	590.500	745.500	651.300	746.000	690.000
GR	756.000	720.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	57000	0.000	0.000	0.000	0.000	1.400	0.000	0.000	0.000	0.000

encroach to obtain — .1' diff in WSEL

CROSS SECTION A

X1	452.470	0.000	0.000	0.000	35.000	35.000	35.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	200.000	0.000	400.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	62000	0.085	314.900	.110	405.400	.150	412.200	.045	472.200	.150
NH	509.000	.120	1145.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION B

X1	453.470	38.000	412.200	472.200	1050.000	450.000	1000.000	0.000	0.000	0.000
GR	759.000	0.000	756.700	18.600	755.000	36.900	754.600	51.800	755.000	81.600
GR	753.400	122.300	754.100	164.800	753.900	215.000	753.900	269.700	753.400	297.200
GR	753.000	314.900	746.000	327.500	742.700	341.300	742.700	405.400	736.600	412.200
GR	736.400	417.200	735.600	422.200	735.700	427.200	735.800	432.200	735.900	437.200
GR	735.900	442.200	735.800	447.200	735.900	452.200	735.600	457.200	735.600	462.200
GR	734.800	467.200	736.600	472.200	739.600	486.500	744.600	509.100	744.300	580.500
GR	743.900	688.500	743.800	746.100	743.000	844.100	743.100	921.200	743.800	996.900
GR	744.000	1051.100	744.000	1086.700	759.000	1145.000	0.000	0.000	0.000	0.000
NH	42000	.150	48.000	.045	95.000	.150	128.000	.100	880.000	0.000

CROSS SECTION BA

X1	454.550	13.000	48.000	95.000	640.000	400.000	1080.000	0.000	0.000	0.000
GR	759.000	0.000	739.000	42.000	737.400	48.000	735.800	60.000	735.600	75.000
GR	735.200	83.000	736.300	90.000	737.400	95.000	739.000	109.000	743.000	128.000
GR	743.000	750.000	747.000	810.000	755.000	880.000	0.000	0.000	0.000	0.000
NH	42000	.100	700.000	.120	735.000	.045	805.000	.150	860.000	0.000

CROSS SECTION BB =DOWNSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

X1	455.590	17.000	735.000	805.000	1410.000	1100.000	1040.000	0.000	0.000	0.000
GR	759.000	0.000	755.000	35.000	751.000	55.000	747.000	70.000	747.000	180.000
GR	743.000	620.000	743.000	700.000	739.000	720.000	738.100	735.000	737.000	750.000
GR	735.800	755.000	735.600	780.000	737.600	790.000	738.100	805.000	739.000	820.000
GR	743.000	835.000	759.000	860.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	.300	.500	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM OF BLOOD ROAD ABANDONED BRIDGE

X1	455.630	0.000	0.000	0.000	20.000	20.000	30.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	0.000	0.000	0.000	0.000	745.500	748.900	0.000
NH	52000	.120	1000.000	.150	1010.000	.045	1060.000	.150	1064.000	.100
NH	1166.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

BLOOD ROAD BRIDGE @ABANDONED@ ADJACENT DOWNSTREAM SECTION

X1	455.640	19.000	1000.000	1064.000	10.000	10.000	10.000	0.000	0.000	0.000
GR	759.000	50.000	755.000	110.000	751.000	495.000	747.000	520.000	745.500	810.000
GR	749.000	1000.000	748.900	1090.000	740.300	1002.000	738.200	1010.000	736.500	1020.000
GR	735.300	1030.000	735.500	1040.000	737.600	1050.000	738.200	1060.000	742.100	1060.000
GR	742.100	1062.000	748.900	1064.000	749.400	1064.000	759.000	1166.000	0.000	0.000
ET	1.000	0.00	750.000	755.000	110.000	755.000	755.200	405.200	751.000	751.000

14112 G.B.

BT	520.000	747.000	747.000	810.000	745.500	745.500	1000.000	749.400	749.400	1000.000
BT	749.400	748.900	1002.000	749.400	748.900	1010.000	749.400	748.900	1026.000	749.400
BT	748.900	1030.000	749.400	748.900	1040.000	749.400	748.900	1050.000	749.400	748.900
BT	1060.000	749.400	748.900	1062.000	749.400	748.900	1064.000	749.400	748.900	1064.000
BT	749.400	749.400	1066.000	759.000	759.000	0.000	0.000	0.000	0.000	0.000

BLOOD ROAD BRIDGE @ABANDONED@ ADJACENT UPSTREAM SECTION

X1	455.660	0.000	0.000	0.000	12.500	12.500	12.500	0.000	0.000	0.000
NH	4.000	.110	890.000	.150	922.000	.045	971.000	.150	1060.000	0.000

IMMEDIATELY UPSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

X1	455.670	17.000	890.000	993.000	10.000	10.000	10.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	745.500	749.400	0.000
GR	755.000	530.000	751.000	545.000	747.000	590.000	744.000	755.000	743.000	890.000
GR	739.000	915.000	738.100	922.000	736.100	935.000	735.800	948.000	736.400	965.000
GR	738.100	971.000	739.000	988.000	743.000	993.000	747.000	1018.000	751.000	1032.000
GR	755.000	1040.000	759.000	1060.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION BC -- UPSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

X1	455.770	17.000	922.000	971.000	30.000	80.000	50.000	0.000	0.000	0.000
GR	755.000	530.000	751.000	545.000	747.000	590.000	744.000	755.000	743.000	890.000
GR	739.000	915.000	738.100	922.000	736.100	935.000	735.800	948.000	736.400	965.000
GR	738.100	971.000	739.000	988.000	743.000	993.000	747.000	1018.000	751.000	1032.000
GR	755.000	1040.000	759.000	1060.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.000	30.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
NH	5.000	.150	41.900	.045	86.100	.135	133.000	.120	458.900	.085
NH	823.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	9.100	0.000	0.000	35.000	760.000

CROSS SECTION C

X1	456.620	28.000	41.900	86.100	980.000	880.000	910.000	0.000	0.000	0.000
GR	761.000	0.000	738.900	41.900	737.600	46.100	736.900	51.100	736.500	56.100
GR	736.900	61.100	736.100	66.100	736.800	71.100	737.600	76.100	738.200	81.100
GR	738.900	86.100	740.800	94.800	743.100	103.100	745.700	133.000	746.000	197.100
GR	744.800	219.600	744.400	248.400	744.400	314.400	744.500	377.500	744.800	458.900
GR	744.800	546.300	744.900	629.400	745.600	703.800	746.300	752.200	746.900	778.600
GR	748.900	793.500	753.300	806.500	761.000	823.000	0.000	0.000	0.000	0.000
NH	6.000	.120	172.100	.150	180.800	.045	232.800	.130	242.200	.100
NH	441.500	1.000	1615.200	20.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION D

XNR SET VERY HIGH RIGHT OF STA 441.5 TO LIMIT CONVEYANCE

EFFECTIVE AREA TOP WIDTH APPROX. 415 FEET DUE TO HIGH N-VALUE

X1	458.070	48.000	180.800	232.800	1360.000	1480.000	1450.000	0.000	0.000	0.000
X3	20.000	0.000	0.000	0.000	0.000	242.200	744.600	0.000	0.000	0.000
GR	762.100	0.000	753.800	14.100	747.100	24.400	744.900	35.400	744.900	68.100
GR	745.900	99.300	745.100	122.500	744.000	146.500	743.200	172.100	740.200	180.800
GR	739.400	185.800	739.100	190.800	738.700	195.800	738.600	200.800	738.800	205.800
GR	739.200	210.800	739.600	215.800	739.900	218.800	739.300	224.800	739.900	227.800
GR	740.200	232.800	744.600	242.200	742.500	257.600	741.000	293.800	740.300	319.000
GR	741.200	366.300	742.400	404.500	743.900	441.500	744.800	485.300	744.100	518.300
GR	742.700	549.500	745.300	575.800	745.200	654.300	744.300	769.300	744.300	801.200
GR	745.800	852.000	746.900	916.700	747.600	1001.400	747.900	1101.000	747.500	1184.900

GR	758[illegible]00	1558.000	760.400	1596.200	762.100	1615.200	0.000	0.000	0.000	0.000
NC	0.000	0.000	0.000	0.000	.900	0.000	0.000	0.000	0.000	0.000
NH	4.000	.120	212.000	.045	260.000	.120	545.000	.085	600.000	0.000

CROSS SECTION DD

X1	458.930	25.000	212.000	260.000	520.000	440.000	460.000	0.000	0.000	0.000
GR	781.500	0.000	781.500	100.000	762.000	160.000	758.000	167.000	754.000	177.000
GR	750.000	184.000	746.000	194.000	742.000	202.000	740.500	212.000	740.000	218.000
GR	739.500	224.000	739.000	230.000	738.800	236.000	739.000	242.000	739.500	248.000
GR	740.000	254.000	740.500	260.000	742.000	273.000	746.000	285.000	750.000	295.000
GR	754.000	308.000	758.000	321.000	762.000	325.000	781.500	545.000	781.500	600.000
NC	0.000	0.000	0.000	.600	.300	0.000	0.000	0.000	0.000	0.000
NH	9.000	.110	612.000	.150	636.300	.045	688.300	.150	723.400	.110
NH	1384.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION E

X1	459.030	54.000	636.300	688.300	510.000	440.000	500.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	370.000	0.000	980.000	0.000	0.000	0.000	0.000
GR	763.000	0.000	758.300	16.600	752.700	31.100	751.000	43.800	750.200	72.200
GR	749.400	96.200	749.700	133.700	750.500	161.400	751.300	194.900	750.500	228.800
GR	748.700	249.300	747.200	279.300	746.800	322.300	746.600	369.700	746.500	406.000
GR	747.200	449.400	747.200	494.400	745.400	538.200	745.000	574.100	746.600	588.400
GR	746.300	612.000	743.900	615.800	742.400	624.500	741.200	636.300	740.900	641.300
GR	740.700	646.300	740.500	651.300	740.200	656.300	739.800	661.300	739.400	666.300
GR	739.200	671.300	739.100	676.300	739.100	681.300	739.900	686.300	741.200	688.300
GR	746.100	696.900	748.900	723.400	747.900	767.900	747.300	829.500	746.900	925.400
GR	746.200	981.000	743.900	1018.500	740.900	1035.900	741.000	1175.200	743.000	1223.800
GR	749.200	1243.800	746.800	1271.500	746.800	1290.000	755.000	1297.900	755.000	1308.900
GR	755.000	1318.000	756.500	1331.100	758.900	1353.200	763.100	1384.000	0.000	0.000
NC	0.000	0.000	0.000	.100	0.000	0.000	0.000	0.000	0.000	0.000
NR	7.000	.085	175.400	.110	302.300	.140	322.400	.050	363.400	.140
NH	442.100	.110	574.200	.065	1451.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION F -DOWNSTREAM OF CHICAGO BLVD--M-50

X1	459.850	48.000	322.400	363.400	800.000	840.000	820.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	260.000	0.000	445.000	0.000	0.000	0.000	0.000
GR	764.100	0.000	764.100	27.700	763.000	52.100	761.800	71.900	760.100	100.000
GR	758.800	119.200	757.200	143.700	755.000	166.000	753.000	175.400	752.800	210.400
GR	752.700	245.100	753.700	271.500	753.800	286.700	752.700	302.300	745.200	317.300
GR	742.200	322.400	741.100	327.400	739.200	332.400	739.000	337.400	739.500	342.400
GR	740.100	347.400	740.600	352.400	740.800	357.400	741.800	362.400	742.200	363.400
GR	743.700	365.500	745.200	403.700	746.600	419.800	750.000	442.100	749.700	470.700
GR	749.100	516.500	749.200	574.200	749.600	658.100	749.900	723.400	751.100	787.000
GR	751.300	850.300	752.200	916.500	753.800	958.000	754.400	1023.000	756.000	1108.900
GR	757.400	1210.000	754.300	1248.200	752.600	1280.100	755.200	1317.700	760.000	1349.400
GR	763.200	1378.400	763.200	1409.900	764.100	1451.000	0.000	0.300	0.000	0.000
NC	0.000	0.000	0.000	.300	.400	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY DOWNSTREAM OF CHICAGO BLVD--M-50--BRIDGE

X1	459.890	0.000	0.000	0.000	20.000	20.000	20.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	300.000	0.000	440.000	0.000	0.000	0.000	0.000
NH	5.000	.030	390.000	.050	412.000	.045	511.000	.050	631.000	.030
NH	1519.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CHICAGO BLVD--M-50--BRIDGE -ADJACENT DOWNSTREAM SECTION

X1	[illegible]	35.000	[illegible]	511.000	50.000	0.000	50.000	0.000	0.000	0.000

X4	762.000	753.400	427.100	753.400	430.000	740.400	430.000	752.800	427.000	752.800
X4	495.000	743.000	495.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	764.700	0.000	762.800	57.700	761.000	151.900	759.500	235.100	758.600	300.100
GR	757.300	367.400	757.300	390.000	749.000	392.300	749.000	397.300	745.600	412.000
GR	740.300	427.000	741.400	452.000	741.700	462.000	742.800	467.000	743.100	472.000
GR	743.300	482.000	743.200	492.000	742.800	502.000	745.600	511.000	748.800	526.700
GR	748.800	531.700	756.200	534.000	756.200	538.000	755.800	631.000	755.300	718.200
GR	754.900	784.400	754.400	851.300	754.000	924.700	754.000	1011.500	753.800	1067.900
GR	754.300	1113.100	754.800	1186.300	755.500	1240.100	756.500	1290.200	758.200	1353.300
GR	760.000	1397.000	762.000	1451.000	763.400	1493.100	764.100	1519.700	0.000	0.000
BT	41.000	0.000	764.100	764.100	57.700	762.800	762.800	151.900	761.000	761.000
BT	235.100	759.500	759.500	300.100	758.600	758.600	367.400	757.300	757.300	390.000
BT	757.300	757.300	392.300	757.300	749.000	392.300	757.300	753.700	397.300	757.300
BT	753.600	412.000	757.200	753.500	427.000	757.000	753.400	452.000	756.800	753.200
BT	462.000	756.700	753.100	467.000	756.700	753.100	472.000	756.600	753.000	482.000
BT	756.500	752.900	492.000	756.400	752.800	502.000	756.300	752.800	511.000	756.300
BT	752.700	526.700	756.300	752.600	531.700	756.200	752.500	531.700	756.200	748.800
BT	534.000	756.200	756.200	538.000	756.200	756.200	631.000	755.800	755.800	718.200
BT	755.300	755.300	784.400	754.900	754.900	851.300	754.400	754.400	924.700	754.000
BT	754.000	1011.500	754.000	754.000	1067.900	753.800	753.800	1113.100	754.300	754.300
BT	1186.300	754.800	754.800	1240.100	755.500	755.500	1290.200	756.500	756.500	1353.500
BT	758.200	758.200	1397.000	760.000	760.000	1451.000	762.000	762.000	1493.100	763.400
BT	763.400	1519.700	764.100	764.100	0.000	0.000	0.000	0.000	0.000	0.000

CHICAGO BLVD--M-50--BRIDGE -ADJACENT UPSTREAM SECTION

NOTE-X2 CARD OMITTED MAX ELEV LOW CHORD-753.7 MIN LOW ROAD ELEV-753.8

X1	459.950	0.000	0.000	0.000	56.000	56.000	56.000	0.000	0.000	0.000
NH	52.000	.085	818.700	.120	837.400	.040	870.400	.120	943.000	.045
NH	1578.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

IMMEDIATELY UPSTREAM OF CHICAGO BLVD--M-50--BRIDGE

X1	459.960	36.000	837.400	870.400	20.000	20.000	20.000	0.000	0.000	0.000
GR	757.900	588.300	757.400	641.300	756.500	694.100	755.300	735.100	754.500	766.600
GR	753.900	788.000	752.200	818.700	745.200	828.300	745.200	830.700	742.200	837.400
GR	739.700	842.400	739.800	847.400	740.200	852.400	740.700	857.400	741.000	862.400
GR	741.200	864.400	741.500	867.400	742.200	870.400	743.600	872.700	743.600	873.100
GR	745.300	905.900	748.000	922.000	750.600	936.800	753.100	943.800	753.600	993.700
GR	754.700	1058.600	753.600	1135.700	753.500	1195.200	752.800	1229.100	753.700	1289.400
GR	753.900	1345.000	754.000	1408.200	753.400	1455.400	751.600	1518.300	750.100	1578.100
GR	764.000	1610.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	20.000	0.000	0.000	.100	.300	0.000	0.000	0.000	0.000	0.000
ET	5.000	0.000	0.000	0.000	0.000	1.400	0.000	0.000	0.000	0.000

CROSS SECTION G -UPSTREAM OF CHICAGO BLVD--M-50

X1	459.980	0.000	0.000	0.000	30.000	10.000	20.000	0.000	0.000	0.000
X3	20.000	0.000	0.000	790.000	0.000	970.000	0.000	0.000	0.000	0.000
BT	52.000	1360.000	2240.000	2610.000	3380.000	2610.000	0.000	0.000	0.000	0.000
NH	32.000	.120	490.000	.040	570.000	.150	890.000	0.000	0.000	0.000

CROSS SECTION GG

X1	460.960	16.000	490.000	579.000	750.000	1000.000	980.000	0.000	0.000	0.000
GR	760.000	0.000	756.000	95.000	752.000	120.000	748.000	280.000	744.000	490.000
GR	743.000	494.000	742.900	514.000	739.900	519.000	740.000	522.000	741.400	539.000
GR	743.100	555.000	744.000	570.000	748.000	775.000	752.000	815.000	762.000	880.000
GR	766.000	890.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	52.000	.120	420.000	.135	489.700	.045	528.700	.150	584.300	.120

14112 G.B.

CROSS SECTION H

X1	461.800	37.000	489.700	528.700	820.000	740.000	840.000	0.000	0.000	0.000
GR	766.700	0.000	760.600	21.700	757.600	38.900	753.700	56.100	750.700	70.400
GR	749.000	80.400	746.700	93.000	746.200	107.700	748.100	130.400	748.900	169.500
GR	749.800	192.300	749.100	228.100	748.900	267.700	749.200	321.800	749.000	370.600
GR	748.900	420.000	747.000	469.600	744.800	479.900	743.900	489.700	743.200	494.700
GR	743.800	499.700	740.000	504.700	740.000	509.700	740.600	514.700	741.000	519.700
GR	741.000	524.700	743.100	527.700	743.900	528.700	745.600	530.900	747.000	555.200
GR	750.000	584.300	749.500	635.200	749.400	726.200	748.500	778.400	748.600	843.900
GR	754.900	857.100	766.100	878.600	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	0.120	248.000	.150	252.000	.045	292.000	.150	300.000	.100
NH	428.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION HH

X1	462.520	12.000	252.000	292.000	700.000	520.000	720.000	0.000	0.000	0.000
GR	766.000	0.000	754.000	95.000	750.000	156.000	746.000	248.000	744.700	252.000
GR	742.400	258.000	741.400	272.000	741.800	290.000	744.700	292.000	746.000	300.000
GR	750.000	380.000	766.000	428.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.130	424.600	.150	463.600	.045	495.600	.150	522.800	.110
NH	1052.400	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION I

X1	463.280	54.000	463.600	495.600	740.000	680.000	760.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	306.200	751.900	881.300	765.900	0.000	0.000	0.000
GR	767.700	.600	758.700	27.900	757.300	53.700	757.200	78.900	756.100	106.400
GR	756.700	134.200	756.700	155.800	754.600	168.900	752.600	184.800	750.200	197.400
GR	749.600	215.800	748.500	232.000	747.000	244.200	747.100	264.600	750.400	280.500
GR	751.900	306.200	751.600	333.200	749.800	376.900	749.500	424.600	749.500	425.000
GR	749.900	425.800	749.500	441.200	748.700	446.000	745.600	463.600	743.200	464.600
GR	742.800	468.600	743.100	473.600	742.900	478.600	742.900	483.600	743.800	488.600
GR	744.600	493.600	745.600	495.600	745.600	495.600	747.100	506.800	748.300	522.800
GR	748.300	523.900	749.700	571.300	750.600	611.300	750.900	656.200	751.800	681.900
GR	751.100	698.600	750.000	729.600	754.400	757.000	758.400	784.600	764.300	803.400
GR	764.500	833.600	765.200	856.400	765.900	881.300	764.900	910.700	762.800	954.000
GR	760.900	975.200	760.300	993.900	767.200	1020.200	767.700	1052.400	0.000	0.000
QT	5.000	1340.000	2060.000	2350.000	3000.000	2350.000	0.000	0.000	0.000	0.000
NH	6.000	.090	550.000	.110	950.000	.150	1000.000	.045	1044.000	.150
NH	1120.000	.110	1320.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION II

X1	464.220	17.000	1000.000	1044.000	1020.000	740.000	1310.000	0.000	0.000	0.000
GR	767.000	0.000	763.000	26.000	759.000	160.000	759.000	550.000	755.000	595.000
GR	751.000	950.000	747.000	980.000	746.900	1000.000	745.200	1010.000	745.000	1026.000
GR	745.700	1042.000	746.900	1044.000	747.000	1048.000	751.000	1065.000	755.000	1120.000
GR	759.000	1275.000	766.600	1320.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.110	692.200	.150	707.200	.045	740.200	.150	771.800	.110
NH	1715.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION J

X1	465.530	47.000	707.200	740.200	640.000	740.000	940.000	0.000	0.000	0.000
GR	771.000	20.000	765.600	11.300	764.900	33.800	763.900	105.100	763.800	176.000
GR	763.000	229.200	760.900	287.700	760.700	352.200	759.500	376.800	757.800	396.200
GR	757.800	420.700	759.500	441.600	758.400	465.100	756.300	485.600	754.000	508.600
GR	752.900	528.800	753.000	582.000	752.400	621.100	752.700	653.800	751.900	691.800

GR	747.900	717.200	747.100	723.200	747.000	727.200	747.000	732.200	747.400	737.200
GR	748.900	740.200	751.900	745.300	752.600	769.300	752.600	769.700	752.600	771.800
GR	753.200	825.500	753.500	870.200	755.000	908.400	754.600	968.100	754.600	1019.900
GR	754.200	1072.100	753.700	1187.800	754.100	1256.700	755.200	1316.500	756.200	1364.100
GR	756.700	1395.000	766.500	1415.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	5.000	.120	549.700	.150	568.600	.045	625.600	.150	654.500	.120
NH	1011.900	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION K

X1	466.900	45.000	568.600	625.600	800.000	600.000	970.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	338.900	756.100	0.000	0.000	0.000	0.000	0.000
GR	775.000	0.000	769.000	14.000	765.500	38.800	763.400	55.000	761.600	72.900
GR	761.000	105.900	757.400	126.100	755.800	157.500	754.200	186.100	753.200	199.300
GR	752.600	214.100	753.900	225.800	754.800	257.600	755.700	302.900	756.100	338.900
GR	755.900	370.500	755.400	408.500	755.300	446.700	755.600	467.900	755.000	495.700
GR	754.000	549.700	753.100	552.700	750.900	568.600	750.000	573.600	749.300	578.600
GR	748.900	583.600	748.400	588.600	748.000	593.600	747.800	598.600	747.600	603.600
GR	747.800	608.600	747.700	613.600	748.700	618.600	750.000	623.600	750.900	625.600
GR	756.300	637.800	758.000	654.500	759.100	689.100	760.000	740.000	760.300	771.800
GR	760.900	811.100	760.100	7864.900	759.900	929.700	759.700	995.100	766.500	1011.100
NH	5.000	.100	379.700	.120	421.300	.045	479.400	.120	496.700	.100
NH	547.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

CROSS SECTION L

X1	467.440	46.000	421.300	479.400	1120.000	900.000	940.000	0.000	0.000	0.000
X3	0.000	0.000	0.000	213.200	762.100	0.000	0.000	0.000	0.000	0.000
GR	775.700	0.000	773.100	19.000	769.400	33.000	767.200	46.300	765.200	60.900
GR	762.500	72.200	757.700	82.300	762.500	94.800	762.200	109.400	760.400	122.800
GR	758.100	140.600	757.100	151.400	755.500	161.200	759.000	178.300	761.300	191.700
GR	762.100	213.200	761.900	224.900	762.000	236.500	762.000	236.800	762.000	237.200
GR	762.000	252.000	762.000	280.900	759.900	295.200	757.500	309.100	755.600	320.200
GR	757.100	335.800	757.600	362.600	757.100	379.700	753.300	391.500	753.300	415.700
GR	752.700	421.300	751.500	426.300	751.000	431.300	750.600	436.300	751.000	441.300
GR	750.900	446.300	751.200	451.300	751.200	456.300	751.600	461.300	751.700	466.300
GR	752.200	471.300	752.700	479.400	755.100	489.400	755.600	496.700	756.100	533.200
GR	767.700	547.100	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
OT	5.000	1280.000	1830.000	2070.000	2550.000	2070.000	0.000	0.000	0.000	0.000
NH	3.000	.085	12.000	.030	275.000	.085	335.000	0.000	0.000	0.000

CROSS SECTION LL

X1	468.570	10.000	12.000	275.000	800.000	600.000	760.000	0.000	0.000	0.000
X3	5.000	762.670	763.780	764.270	764.930	764.270	0.000	0.000	0.000	0.000
GR	780.000	0.000	763.000	0.000	762.800	12.000	751.300	12.000	751.300	275.000
GR	762.800	275.000	763.000	285.000	767.000	297.000	771.000	315.000	775.000	335.000
NH	4.000	.060	411.500	.085	631.900	.035	701.900	.100	742.000	0.000

CROSS SECTION M

X1	469.370	38.000	631.900	701.900	6900.000	1450.000	1560.000	0.000	0.000	0.000
GR	785.000	0.000	781.300	12.200	773.800	30.700	770.800	47.600	769.700	69.300
GR	768.000	100.100	767.300	139.500	765.700	173.000	766.200	225.800	765.500	252.200
GR	765.100	277.800	764.400	308.600	764.100	353.100	764.000	411.500	763.900	480.100
GR	763.800	526.200	764.000	571.100	764.300	587.600	764.300	624.800	762.900	631.900
GR	762.300	632.900	761.800	636.900	760.500	641.900	758.700	646.900	757.900	651.900
GR	757.400	656.900	757.200	661.900	757.200	666.900	757.800	671.900	757.100	676.900
GR	757.700	681.900	757.100	686.900	757.900	691.900	760.600	696.900	761.400	701.900
GR	762.900	703.900	784.700	722.300	785.100	742.000	0.000	0.000	0.000	0.000
NH	4.000	.120	400.200	.045	515.800	.120	546.600	.110	1400.000	0.000

CROSS SECTION N

XT	470.250	47.000	400.200	515.800	500.000	720.000	880.000	0.000	0.000	0.000
GR	679.280	331.800	791.000	343.900	785.500	358.200	780.300	370.200	675.200	378.800
GR	769.500	387.000	762.900	400.200	762.800	400.800	761.800	405.800	760.500	410.800
GR	759.600	415.800	759.000	420.800	759.400	425.800	758.700	430.800	758.700	435.800
GR	758.700	440.800	758.700	445.800	758.500	450.800	758.400	455.800	758.200	460.800
GR	758.000	465.800	757.900	470.800	758.000	475.800	758.100	480.800	758.400	485.800
GR	759.800	490.800	760.300	495.800	760.100	500.800	760.200	505.800	761.200	510.800
GR	761.800	513.800	762.800	515.800	763.800	522.800	764.900	546.600	764.900	620.000
GR	764.900	687.600	765.100	707.300	763.700	913.300	763.700	1042.500	764.200	1097.600
GR	765.100	1154.300	765.700	1226.100	765.900	1293.100	767.200	1335.600	767.400	1363.000
GR	767.800	1375.100	785.100	1400.000	0.000	0.000	0.000	0.000	0.000	0.000
NH	47.000	.090	363.000	.120	405.000	.045	440.000	.100	780.000	0.000

CROSS SECTION NN

XT	471.600	18.000	405.000	440.000	1200.000	140.000	1350.000	0.000	0.000	0.000
GR	781.000	0.000	777.000	145.000	773.000	160.000	769.000	363.000	765.000	380.000
GR	764.900	405.000	761.000	408.000	757.700	414.000	757.500	420.000	757.500	423.000
GR	758.700	428.000	758.400	432.000	760.100	437.000	764.500	440.000	765.000	540.000
GR	769.000	650.000	781.000	708.000	785.000	780.000	0.000	0.000	0.000	0.000
NH	4.000	.070	453.100	.090	513.800	.045	668.800	.100	742.100	0.000

CROSS SECTION O

XT	472.090	46.000	513.800	668.800	360.000	520.000	490.000	0.000	0.000	0.000
GR	782.700	341.600	780.300	366.300	779.100	389.500	778.100	422.100	777.100	453.100
GR	771.000	453.100	771.000	465.000	767.000	465.000	765.400	503.100	768.200	503.100
GR	768.200	504.900	765.200	513.800	763.200	516.800	762.700	518.800	761.500	523.800
GR	760.400	528.800	759.300	533.800	759.100	538.800	758.700	543.800	758.000	553.800
GR	758.200	558.800	758.200	563.800	758.400	568.800	758.500	573.800	758.200	578.800
GR	757.800	583.800	757.200	588.800	757.000	593.800	756.900	598.800	757.800	603.800
GR	757.200	608.800	758.000	613.800	759.100	618.800	760.500	623.800	761.700	628.800
GR	762.700	633.800	761.900	638.800	761.600	643.800	761.400	648.800	762.400	653.800
GR	763.800	658.800	764.500	663.800	765.200	668.800	765.800	717.600	768.200	730.500
GR	787.100	742.100	0.000	20.000	0.000	0.000	0.000	0.000	0.000	0.000
OT	5.000	1880.000	1820.000	2060.000	2540.000	2060.000	0.000	0.000	0.000	0.000
NH	4.000	.040	417.100	.030	1209.100	.050	1283.400	.035	2171.600	0.000

RED MILL POND - TECUMSEH DAM IMPOUNDMENT

CROSS SECTION O

XT	474.750	62.000	417.100	1209.100	2820.000	3220.000	2580.000	0.000	0.000	0.000
XS	5.000	780.520	780.620	780.660	780.740	780.660	0.000	0.000	0.000	0.000
GR	800.000	0.000	793.300	0.000	792.900	14.600	792.900	15.400	792.900	16.000
GR	792.900	33.100	793.800	56.900	793.600	111.100	792.800	159.000	792.900	213.600
GR	793.200	261.900	792.700	299.300	792.800	326.600	792.800	327.100	792.000	365.300
GR	791.200	391.800	788.800	405.100	781.000	411.100	780.100	415.100	778.000	417.100
GR	777.000	423.100	776.300	427.100	776.000	437.100	774.700	457.100	773.000	487.100
GR	773.900	517.100	774.000	557.100	774.200	597.100	774.800	637.100	774.900	677.100
GR	774.700	717.100	774.900	757.100	774.200	797.100	773.800	837.100	774.900	877.100
GR	774.900	917.100	774.100	957.100	774.000	997.100	773.600	1037.100	774.900	1077.100
GR	775.400	1117.100	775.400	1157.100	776.500	1197.100	777.100	1207.100	778.000	1209.100
GR	736.300	1219.700	786.300	1283.400	786.500	1364.500	786.700	1439.600	786.900	1510.400
GR	787.100	1577.000	785.700	1659.100	784.700	1729.300	784.400	1766.100	784.900	1840.800
GR	785.200	1884.600	786.200	1942.900	787.800	1981.500	790.000	2019.400	794.000	2072.700
GR	796.200	2122.500	800.000	2171.600	0.000	0.000	0.000	0.000	0.000	0.000
NH	3.000	.060	858.900	.030	1705.900	.045	2478.200	0.000	0.000	0.000

14112 G.B.

'INLET TO RED MILL POND

'CROSS SECTION S

'X1	477.650	79.000	7858.900	1705.900	3400.000	3360.000	2900.000	0.000	0.000	0.000
GR	7800.000	0.000	797.800	32.100	797.200	58.900	795.800	82.100	792.700	96.500
GR	790.700	113.100	789.500	130.900	789.000	175.500	788.100	199.300	785.900	214.300
GR	783.200	227.500	781.400	238.500	780.700	280.100	780.700	325.800	780.600	365.100
GR	781.200	409.200	781.200	445.500	780.800	483.600	780.300	500.300	779.600	513.600
GR	778.500	527.800	780.600	534.600	781.200	586.800	781.200	644.200	781.200	682.300
GR	780.800	728.300	779.100	776.500	778.600	831.200	778.400	849.700	778.000	858.900
GR	772.900	863.900	776.900	883.900	776.600	923.900	777.600	963.900	775.800	993.900
GR	776.400	1023.900	776.800	1083.900	776.600	1123.900	775.900	1153.900	775.600	1163.900
GR	775.400	1173.900	775.100	1193.900	776.400	1218.900	778.000	1223.900	778.500	1233.900
GR	778.000	1262.900	777.400	1290.900	776.800	1320.900	776.500	1340.900	776.400	1360.900
GR	776.400	1380.900	776.200	1410.900	776.600	1450.900	776.300	1490.900	776.800	1530.900
GR	776.600	1570.900	776.300	1610.900	777.100	1650.900	777.500	1690.900	778.000	1705.900
GR	780.100	1773.400	781.000	1781.000	781.000	1837.500	785.600	1846.000	785.600	1866.700
GR	785.200	1879.600	776.700	1908.300	780.100	1922.300	780.700	1977.800	782.000	2079.400
GR	783.000	2162.500	784.800	2225.500	786.700	2281.200	788.800	2317.100	790.700	2354.600
GR	792.300	2389.100	793.700	2415.100	795.900	2434.900	799.100	2478.200	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

CCHV= .300 CEHV= .600
1490 NH CARD USED
*SECNO 449.270

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= 1050.0 1204.0 TYPE= 1 TARGET= 154.000

+DOWNSTREAM OF MILL HWY-EXTD.

449.21	7.29	736.89	0.00	738.00	737.25	.36	0.00	0.00	735.70
4090.	0.	4090.	0.	0.	844.	0.	0.	0.	99999.70
0.00	0.00	4.85	0.00	0.000	.149	0.000	0.000	729.60	1050.00
.002268	0.	0.	0.	0	0	4	0.00	153.41	1203.41

give~

*SECNO 449.260

3470 ENCROACHMENT STATIONS= 1060.0 1190.0 TYPE= 1 TARGET= 130.000

+IMMEDIATELY DOWNSTREAM OF MILL HWY-EXTD

449.26	7.28	736.98	0.00	0.00	737.41	.42	.12	.04	100000.00
4090.	0.	4090.	0.	0.	783.	0.	1.	0.	100000.00
.00	0.00	5.23	0.00	0.000	.045	0.000	.000	729.70	1060.00
.002519	50.	50.	50.	1	0	0	0.00	130.00	1190.00

1490 NH CARD USED
*SECNO 449.280

3301 HV CHANGED MORE THAN HVINS

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,NRO= 0 MIN ELTRD= 748.50 MAX ELLC= 747.70

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

3470 ENCROACHMENT STATIONS= 900.0 994.0 TYPE= 1 TARGET= 94.000

+MILL HWY-EXTD BRIDGE @ABANDONED@ +ADJACENT DOWNSTREAM SECTION

449.28	7.31	737.01	737.01	0.00	739.55	2.54	.20	1.27	732.10
4090.	1223.	3760.	106.	75.	283.	41.	1.	0.	732.50
.00	2.97	13.30	2.60	.120	.045	.120	.000	729.70	901.77
.014204	40.	40.	40.	20	15	0	0.00	90.29	992.06

*SECNO 449.300

3370 NORMAL BRIDGE,NRD= 0 MIN ELTRD= 748.50 MAX ELLC= 747.70

3685 20 TRIALS ATTEMPTED WSEL,CWSEL

3470 ENCROACHMENT STATIONS= 900.0 994.0 TYPE= 1 TARGET= 94.000

MILL HWY-EXTD BRIDGE ABANDONED ADJACENT UPSTREAM SECTION

449.30	18.89	738.59	737.01	0.00	740.03	1.45	.16	.33	732.10
4090.	310.	3616.	1636.	120.	3548.	68.	2.	0.	732.50
.00	2.59	10.23	2.40	.120	.045	.120	.000	729.70	901.51
.006233	178.	186	186	23	15	10	0.00	90.84	992.34

1490 NH CARD USED
*SECNO 449.320

3301 HV CHANGED MORE THAN HVINS

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= 1050.0 1204.0 TYPE= 1 TARGET= 154.000

IMMEDIATELY UPSTREAM OF MILL HWY-EXTD

449.32	10.43	740.33	0.00	0.00	740.48	.15	.05	.39	736.00
4090.	0.	4090.	0.	0.	1329.	0.	3.	0.	100000.00
.01	20.00	3.08	0.00	.120	.149	.120	.000	729.90	1050.00
.000542	40.	40.	40.	2	0	0	0.00	154.00	1204.00

*SECNO 449.370

3470 ENCROACHMENT STATIONS= 990.0 1260.0 TYPE= 1 TARGET= 270.000

UPSTREAM OF MILL HWY-EXTD

449.37	10.37	740.37	0.00	0.00	740.51	.14	.03	.00	736.10
4090.	88.	3954.	48.	166.	1319.	112.	4.	1.	737.50
.01	.53	3.00	.43	.128	.149	.125	.000	730.00	990.00
.000529	50.	50.	50.	2	0	0	0.00	270.00	1260.00

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 449.900

3470 ENCROACHMENT STATIONS= 60.0 1850.0 TYPE= 1 TARGET= 790.000

CROSS SECTION A1

449.90	10.24	740.64	0.00	0.00	740.76	.11	.25	.00	732.40
4090.	57.	3089.	4943.	94.	1000.	1661.	23.	4.	732.40
.07	.61	3.09	.57	.150	.045	.122	.000	730.40	83.95
.000463	330.	550.	1806	2	0	0	0.00	766.05	850.00

1490 NH CARD USED

3470 ENCROACHMENT STATIONS= 0 550.0 TYPE= 1 TARGET= 549.999

CROSS SECTION A1.5

450.81	10.34	741.14	0.00	0.00	741.27	.13	.51	.01	733.10
4090.	1017.	1889.	1183.	796.	454.	1219.	73.	16.	733.10
.16	1.28	4.16	.97	.100	.045	.112	.000	730.80	43.41
.000782	830.	910.	770.	2	0	0	0.00	506.59	550.00

1490 NH CARD USED
*SECNO 451.350

3470 ENCROACHMENT STATIONS= 897.6 1170.1 TYPE= 1 TARGET= -897.600
ELENCL= 739.80 ELENCR= 700000.00

CROSS SECTION A2

451.35	10.39	741.49	0.00	0.00	741.90	.40	.54	.08	733.50
4090.	650.	3256.	1846.	755.	572.	142.	95.	21.	732.90
.19	.86	5.70	1.29	.117	.045	.150	.000	731.10	712.75
.001483	500.	540.	450.	2	0	0	0.00	442.47	1155.22

1490 NH CARD USED
*SECNO 452.330

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

3470 ENCROACHMENT STATIONS= 560.0 690.0 TYPE= 1 TARGET= 130.000

CROSS SECTION A3 -DOWNSTREAM OF E.RUSSEL ROAD

452.33	9.75	742.95	0.00	0.00	743.49	.54	1.55	.04	734.20
4090.	168.	3727.	195.	140.	607.	156.	120.	27.	734.20
.24	1.20	6.14	1.25	.150	.045	.150	.000	733.20	560.00
.001760	820.	980.	940.	2	0	0	0.00	128.36	688.36

CCHV= .400 CEHV= .800
*SECNO 452.370

3470 ENCROACHMENT STATIONS= 560.0 690.0 TYPE= 1 TARGET= 130.000

IMMEDIATELY DOWNSTREAM OF E.RUSSEL ROAD

452.37	9.93	743.13	0.00	0.00	743.55	.43	.02	.04	734.20
4090.	282.	3479.	329.	145.	618.	163.	120.	27.	734.20
.24	1.95	5.63	2.02	.085	.045	.085	.000	733.20	560.00
.001440	15.	15.	15.	2	0	0	0.00	129.04	689.04

*SECNO 452.380

3265 DIVIDED FLOW

E.RUSSEL ROAD BRIDGE -ADJACENT DOWNSTREAM SECTION

452.38	9.76	743.16	0.00	0.00	743.82	.66	.08	.18	737.40

Sections not rep of the reach avg Sf x reach not representative of loss
Try section at full expanded roadway this would lower TW 1 ft.

14112 G.B.

.24	2.11	6.62	2.14	.085	.045	.085	.001	733.40	946.92
.004090	35.	35.	35.	2	0	0	0.00	94.40	1048.33

*SECNO 452.420

3265 DIVIDED FLOW

E.RUSSEL ROAD BRIDGE -ADJACENT UPSTREAM SECTION

NOTE: X2 CARD OMITTED MAX LOW CHORD ELEV-755.6 MIN ROAD ELEV-751.8

452.42	9.96	743.36	0.00	0.00	743.98	.62	.15	.01	737.40
4090.	779.	3926.	876.	37.	608.	41.	121.	27.	737.40
.25	12.00	6.46	2.11	.085	.045	.085	.001	733.40	946.51
.003814	38.	38.	38.	2	0	0	0.00	95.27	1048.78

1490 NH CARD USED
*SECNO 452.440

3470 ENCROACHMENT STATIONS= 230.0 375.0 TYPE= 1 TARGET= 145.000

IMMEDIATELY UPSTREAM OF E.RUSSEL ROAD

452.44	12.35	743.85	0.00	0.00	744.14	.29	.02	.13	734.20
4090.	521.	3469.	700.	458.	743.	106.	122.	27.	734.20
.25	1.19	4.67	.95	.126	.045	.150	.001	731.50	230.00
.000807	15.	15.	15.	2	0	0	0.00	145.00	375.00

*SECNO 452.470

SECNO	DEPTH	GWSEL	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= 200.0 400.0 TYPE= 1 TARGET= 200.000

CROSS SECTION A

452.47	12.43	743.93	0.00	0.00	744.18	.25	.03	.02	734.20
4090.	616.	3317.	157.	566.	748.	198.	123.	27.	734.20
.25	1.09	4.43	.79	.124	.045	.149	.002	731.50	200.00
.000720	35.	35.	35.	0	0	0	0.00	200.00	400.00

CCHV= .100 CEHV= .300
1490 NH CARD USED
*SECNO 453.470

CROSS SECTION B

453.47	10.01	744.81	0.00	0.00	745.29	.48	1.04	.07	736.60
4090.	172.	3353.	566.	180.	546.	773.	152.	34.	736.60
.30	.95	6.14	.73	.119	.045	.130	.012	734.80	332.46
.001844	1050.	1000.	450.	2	0	0	0.00	257.39	1089.86

1490 NH CARD USED
*SECNO 454.550

CROSS SECTION BA

455.55	10.95	746.15	0.00	0.00	746.30	.15	.97	.03	737.40
4090.	783.	2034.	19736	101.	477.	2241.	180.	42.	737.40
.39	682	4.27	.88	.150	.045	.105	.020	735.20	26.99
.000788	640.	1080.	400.	2	0	0	0.00	770.22	797.21

1490 NH CARD USED
*SECNO 455.590

CROSS SECTION BB =DOWNSTREAM OF BLOOD ROAD=ABANDONED=BRIDGE

455.59	11.32	746.92	0.00	0.00	747.09	.17	.78	.01	738.10
4090.	1076.	2807.	206.	1397.	712.	226.	250.	62.	738.10
.50	.77	3.94	.91	.105	.045	.150	.024	735.60	189.90
.000651	1410.	10406	1100.	2	0	0	0.00	651.21	841.11

CCHV= .300 CEHV= .500
*SECNO 455.680

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 745.50 ELREA= 748.90

IMMEDIATELY DOWNSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

455.63	11.34	746.94	0.00	0.00	747.11	.16	.02	.00	738.10
4090.	1324.	2766.	0.	1411.	714.	0.	251.	62.	738.10
.50	.94	3.87	0.00	.085	.045	.085	.024	735.60	187.22
.000627	20.	30.	20.	0	0	0	0.00	617.78	805.00

1490 NH CARD USED
*SECNO 455.640

3265 DIVIDED FLOW

3501 HV CHANGED MORE THAN HVINS

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

BLOOD ROAD BRIDGE *ABANDONED* ADJACENT DOWNSTREAM SECTION

455.64	11.37	746.67	0.00	0.00	747.40	.73	.01	.29	749.40
4090.	77.	4013.	0.	166.	579.	0.	251.	62.	749.40
.50	.46	6.93	0.00	.120	.148	.085	.024	735.30	583.80
.002866	110.	10.	100.	2	0	0	0.00	346.03	1063.34

*SECNO 455.660

3265 DIVIDED FLOW

BLOOD ROAD BRIDGE *ABANDONED* ADJACENT UPSTREAM SECTION

455.66	11.42	746.72	0.00	0.00	747.44	.72	.04	.00	749.40
4090.	86.	4005.	0.	161.	582.	0.	252.	63.	749.40
.50	.47	6.88	0.00	.120	.148	.085	.024	735.30	573.74
.002905	13.	317.	134.	2	0	0	0.00	358.61	1063.34

1490 NH CARD USED
*SECNO 455.670

3301 HV CHANGED MORE THAN HVINS

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE, ELLEA= 745.50 ELREA= 749.40

IMMEDIATELY UPSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

455.67	11.68	747.48	0.00	0.00	747.63	.15	.02	.17	743.00
4090.	804.	3286.	0.	866.	949.	0.	252.	63.	743.00
.50	.93	3.46	0.00	.110	.142	.085	.024	735.80	584.59
.001016	70.	10.	10.	2	0	0	0.00	408.41	993.00

*SECNO 455.710

CROSS SECTION BC -UPSTREAM OF BLOOD ROAD-ABANDONED-BRIDGE

455.71	11.66	747.46	0.00	0.00	747.74	.28	.05	.07	738.10
4090.	1047.	2774.	269.	1082.	539.	245.	254.	63.	738.10
.50	.97	5.15	1.10	.120	.045	.150	.024	735.80	584.86
.000706	30.	50.	80.	2	0	0	0.00	434.74	101.9.60

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 456.620

CROSS SECTION C

456.62	112.24	748.34	0.00	0.00	748.48	.14	.72	.01	738.90
4090.	55.	2041.	1994.	84.	494.	2381.	304.	76.	738.90
.61	.65	4.13	.84	.150	.045	.105	.027	736.10	24.01
.000637	980.	910.	880.	2	0	0	0.00	765.30	789.31

1490 NH CARD USED
*SECNO 458.670

SECNO	DEPTH	QWSEL	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= .0 1242.2 TYPE= 1 TARGET= 242.199

CROSS SECTION D

XNR SET VERY HIGH RIGHT OF STA 441.5 TO LIMIT CONVEYANCE

EFFECTIVE AREA TOP-WIDTH APPROX. 415 FEET DUE TO HIGH N-VALUE

458.07	10.71	749.31	0.00	0.00	749.44	.13	.97	.00	740.20
4090.	647.	2103.	1340.	722.	521.	3585.	435.	110.	740.20
.78	.90	4.04	.37	.123	.045	.260	.030	738.60	21.00
.000697	1360.	1450.	1480.	2	0	0	0.00	1276.05	1297.05

CCHV= .100 CEHV= .900
1490 NH CARD USED
*SECNO 458.530

3301 HV CHANGED MORE THAN HVINS

CROSS SECTION DD

458.53	10.97	749.77	0.00	0.00	750.41	.64	.51	.45	740.50
.4090	286.	3415.	388.	149.	491.	1986	465.	117.	740.50
.80	1.92	6.95	1.96	.120	.045	.120	.031	738.80	184.57
.002002	520.	460.	440.	2	0	0	0.00	109.86	294.43

CCHV= .800 CEHV= .300
1490 NH CARD USED
*SECNO 459.030

3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS= 370.0 980.0 TYPE= 1 TARGET= 610.000

CROSS SECTION E

459.03	11.95	751.05	0.00	0.00	751.17	.12	.45	.31	741.20
.4090.	1141.	2144.	305.	1320.	576.	1113.	486.	121.	741.20
.86	.86	3.72	.72	.116	.045	.115	.032	739.10	370.00
.000520	510.	500.	440.	2	0	0	0.00	610.00	980.00

CCHV= .700 CEHV= .300
1490 NH CARD USED
*SECNO 459.850

3470 ENCROACHMENT STATIONS= 260.0 445.0 TYPE= 1 TARGET= 185.000

CROSS SECTION F DOWNSTREAM OF CHICAGO BLVD--M-50

459.85	12.49	751.49	0.00	0.00	752.10	.61	.78	.15	742.20
.4090.	112.	3218.	760.	79.	458.	452.	524.	128.	742.20
.90	1.41	7.03	1.68	.140	.050	.140	.033	739.00	304.72
.002297	800.	820.	840.	2	0	0	0.00	140.28	445.00

CCHV= .300 CEHV= .400
*SECNO 459.890

3470 ENCROACHMENT STATIONS= 300.0 440.0 TYPE= 1 TARGET= 140.000

IMMEDIATELY DOWNSTREAM OF CHICAGO BLVD--M-50--BRIDGE

459.89	12.74	751.74	0.00	0.00	752.19	.44	.04	.05	742.20
.4090.	155.	2900.	1035.	784.	468.	464.	524.	128.	742.20
.90	1.85	6.20	2.23	.085	.045	.085	.033	739.00	304.21
.001403	23.	20.	20.	2	0	0	0.00	135.79	440.00

1490 NH CARD USED
*SECNO 459.900

3265 DIVIDED FLOW

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
									LEFT RIGHT

TIME	IVLOB	IVCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST

CHICAGO BLVD--M-50--BRIDGE =ADJACENT DOWNSTREAM SECTION

459.90	11.70	752.00	0.00	0.00	752.27	.27	.03	.05	745.60
4090.	123.	3830.	137.	85.	888.	93.	525.	128.	745.60
.90	1.44	4.31	1.47	.050	.045	.050	.033	740.30	391.47
.000347	50.	50.	50.	2	0	0	0.00	135.31	532.69

*SECND 459.950

3265 DIVIDED FLOW

CHICAGO BLVD--M-50--BRIDGE =ADJACENT UPSTREAM SECTION

NOTE-X2 CARD OMITTED MAX ELEV LOW CHORD-753.7 MIN LOW ROAD ELEV-753.8

459.95	11.72	752.02	0.00	0.00	752.29	.27	.02	.00	745.60
4090.	124.	3829.	137.	86.	890.	93.	527.	129.	745.60
.91	1.44	4.30	1.47	.050	.045	.050	.033	740.30	391.46
.000345	56.	56.	56.	2	0	0	0.00	135.33	532.70

1490 NH CARD USED
*SECND 459.960

3265 DIVIDED FLOW

3301 HV CHANGED MORE THAN HVINS

IMMEDIATELY UPSTREAM OF CHICAGO BLVD--M-50--BRIDGE

459.96	11.97	751.67	0.00	0.00	752.54	.87	.01	.24	742.20
4090.	180.	3100.	781.0.	98.	364.	428.	527.	129.	742.20
.91	1.84	8.53	1.89	.120	.040	.114	.033	739.70	819.42
.000225	20.	20.	20.	2	0	0	0.00	186.46	1581.72

CCHV= .100 CEHV= .300
*SECND 459.980

3470 ENCROACHMENT STATIONS= 790.0 970.0 TYPE= 1 TARGET= 180.000

CROSS SECTION 9 =UPSTREAM OF CHICAGO BLVD--M-50

459.98	12.31	752.01	0.00	0.00	752.61	.59	.04	.03	742.20
4090.	1262.	2743.	1085.	104.	375.	402.	527.	129.	742.20
.91	12.52	7.32	2.70	.085	.045	.085	.033	739.70	818.95
.001982	30.	20.	10.	2	0	0	0.00	121.82	940.77

1490 NH CARD USED
*SECND 460.960

3301 HV CHANGED MORE THAN HVINS

14112 G.B.

460.96	13.04	752.94	0.00	0.00	752.97	.02	.30	.06	744.00
2610.	47.1	1402.	494	1930.	854.	1543.	581.	137.	744.00
1.16	.37	1.64	.32	.120	.040	.150	.034	739.90	114.14
.000085	750.	980.	1000	2	0	0	0.00	706.96	821.09

1490 NH CARD USED
*SECNO 461.800

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

CROSS SECTION H

461.80	13.04	753.04	0.00	0.00	753.08	.04	.10	.00	743.90
2610.	953.	1050.	6086	1912.	442.	1336.	654.	151.	743.90
1.34	.50	2.38	.45	.124	.045	.127	.035	740.00	59.25
.000218	820.	840.	740.	2	0	0	0.00	793.95	853.20

1490 NH CARD USED
*SECNO 462.520

CROSS SECTION HH

462.52	11.79	753.19	0.00	0.00	753.33	.14	.22	.03	744.70
2610.	470.	1647.	493.	586.	444.	493.	692.	158.	744.70
1.47	.80	3.71	1.00	.122	.045	.106	.035	741.40	107.40
.000542	700.	720.	520.	2	0	0	0.00	282.16	389.56

1490 NH CARD USED
*SECNO 463.280

3470 ENCROACHMENT STATIONS= 306.2 381.3 TYPE= 1 TARGET= 575.100
ELENCL= 751.90 ELENCR= 765.90

CROSS SECTION I

463.28	10.85	753.65	0.00	0.00	753.79	.13	.46	.00	745.60
2610.	517.	1326.	767.	789.	328.	907.	722.	166.	745.60
1.49	.65	4.04	.85	.137	.045	.119	.036	742.80	176.44
.000728	740.	760.	680.	2	0	0	0.00	575.90	752.34

1490 NH CARD USED
*SECNO 464.220

CROSS SECTION II

464.22	9.50	754.50	0.00	0.00	754.67	.17	.87	.01	746.90
2350.	606.	1598.	147.	858.	397.	208.	761.	177.	746.90
1.60	.71	4.02	.71	.130	.045	.150	.037	745.00	639.82
.000799	1020.	1310.	740.	2	0	0	0.00	473.24	1113.06

1490 NH CARD USED
*SECNO 465.530

CROSS SECTION J

2550.	523.	1294.	533.	550.	266.	790.	787.	188.	748.90
1.68	.95	4.87	.67	.115	.045	.117	.038	747.00	495.19
.0013.94	640.	940.	740.	2	0	0	0.00	828.03	1323.22

1490 NH CARD USED
*SECNO 466.500

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= 338.9 1011.1 TYPE= 1 TARGET= -338.900
ELENCL= 756.10 ELENCR= 100000.00

CROSS SECTION K

466.50	78.89	756.49	0.00	0.00	756.79	.30	1.21	.03	750.90
2350.	1242.	2083.	24.	420.	446.	35.	810.	198.	750.90
1.74	.58	4.67	.68	.129	.045	.150	.038	747.60	148.11
.001311	800.	970.	600.	2	0	0	0.00	491.54	639.65

1490 NH CARD USED
*SECNO 467.440

3470 ENCROACHMENT STATIONS= 213.2 547.1 TYPE= 1 TARGET= -213.200
ELENCL= 762.10 ELENCR= 100000.00

CROSS SECTION L

467.44	7.38	757.98	0.00	0.00	758.30	.32	1.50	.00	752.70
2350.	298.	1893.	159.	243.	378.	140.	829.	207.	752.70
1.80	1.22	5.01	1.14	.117	.045	.109	.039	750.60	306.33
.001905	1120.	940.	900.	2	0	0	0.00	229.12	535.45

1490 NH CARD USED
*SECNO 468.570
WATER EL=X5 CARD= 764.270

CROSS SECTION LL

468.57	12.97	764.27	0.00	0.00	764.28	.01	.02	.03	762.80
2070.	1.	2068.	1.	16.	3411.	16.	866.	212.	762.80
2.15	.05	.61	.05	.085	.030	.085	.039	751.30	0.00
.000005	800.	760.	600.	0	0	0	0.00	288.81	288.81

1490 NH CARD USED
*SECNO 469.370

3265 DIVIDED FLOW

CROSS SECTION M

469.37	6.99	763.99	0.00	0.00	764.44	.45	.03	.13	762.90
2070.	4.	2063.	3.	17.	382.	4.	937.	231.	761.40
2.23	.22	5.40	.74	.085	.035	.100	.040	757.00	416.88
.001733	6900.	1560.	1450.	3	0	0	0.00	230.92	704.82

14112 G.B.

*SECNO 470.250

'CROSS SECTION N

470.25	7.35	765.25	0.00	0.00	765.35	.11	.88	.03	762.90
2070.	2.	1863.	205.	5.	680.	567.	952.	240.	762.80
2.33	.33	2.74	.36	.120	.045	.111	.040	757.90	395.52
.000656	4500.	880.	720.	2	0	0	0.00	775.83	1171.35

'1490 'NH 'CARD 'USED
*SECNO 471.600

'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

'CROSS SECTION NN

471.60	8.95	766.45	0.00	0.00	767.09	.64	1.58	.16	764.50
'2070.	48.	1784.	'238.	47.	258.	199.	969.	244.	764.50
2.38	1.02	6.91	1.28	.120	.045	.100	.040	757.50	373.84
.003659	1200.	1350.	140.	2	0	0	0.00	206.01	579.85

'1490 'NH 'CARD 'USED
*SECNO 472.090

'3265 'DIVIDED 'FLOW

'3301 'HV 'CHANGED 'MORE 'THAN 'HVINS

'CROSS SECTION 0

472.09	10.46	767.36	10.00	0.00	767.40	.05	.25	.06	765.20
'2070.	112.	2028.	30.	51.	1160.	97.	979.	246.	765.20
2.46	.24	1.75	.30	.090	.045	.100	.040	756.90	465.00
.000195	360.	490.	520.	2	0	0	0.00	256.66	725.96

'1490 'NH 'CARD 'USED
*SECNO 474.750
'WATER EL=XS 'CARD= 780.660

'RED 'MILL 'POND--'TECUMSEH DAM IMPOUNDMENT

'CROSS SECTION 0

474.75	7.66	780.66	0.00	0.00	780.66	.00	.05	.00	778.00
'2060.	70.	2059.	70.	4.	4781.	5.	1160.	278.	778.00
4.13	.09	.43	.08	.040	.030	.050	.041	773.00	412.61
.000007	2820.	2580.	3220.	0	0	0	0.00	799.89	1212.50

'1490 'NH 'CARD 'USED
*SECNO 477.650

INLET TO RED MILL POND

CROSS SECTION S

477.65	8.19	780.69	0.00	0.00	780.70	.00	.03	.00	778.00	
2060.	42.	1979.	39.	270.	3441.	187.	1452.	349.	778.00	
5.57	.16	.58	.21	.060	.030	.045	.041	772.50	329.39	
.0000271	3400.	2900.	3360.	2	0	0	0.00	1254.58	1976.96	

14112 G.B.

00BREAK00

1) COUNTY: LENAWEE

2) STUDY NAME: TECUMSEH, CITY OF

3) WATERCOURSE: RIVER RAISIN

4) DOCUMENT TYPE: SUMMARY

00BREAK00

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  HEC2 RELEASE DATED NOV 76 UPDATED JULY 1979
  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

RIVER RAISIN -TECUMSEH

SUMMARY PRINTOUT

	SECNO	GWSEL	.01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	449.210	736.89	858.77	737.25	153.41	1050.00	1204.00	738.00	729.60
	449.210	736.89	858.77	737.25	153.41	1050.00	1204.00	738.00	729.60
AO	449.210	737.64	1053.81	738.07	154.00	1050.00	1204.00	738.00	729.60
	449.210	736.45	755.39	736.78	152.17	1050.00	1204.00	738.00	729.60
	449.210	735.29	510.94	735.54	147.77	1050.00	1204.00	738.00	729.60
	449.260	736.98	814.85	737.41	130.00	1060.00	1190.00	0.00	729.70
(AO)	449.260	736.98	814.85	737.41	130.00	1060.00	1190.00	0.00	729.70
	449.260	737.73	980.61	738.24	130.00	1060.00	1190.00	0.00	729.70
	449.260	736.54	720.78	736.93	130.00	1060.00	1190.00	0.00	729.70
	449.260	735.39	495.52	735.67	130.00	1060.00	1190.00	0.00	729.70
*	449.280	737.01	343.13	739.55	90.29	900.00	994.00	0.00	729.70
*	449.280	737.01	343.18	739.55	90.29	900.00	994.00	0.00	729.70
*	449.280	737.81	428.68	740.68	90.57	900.00	994.00	0.00	729.70
*	449.280	736.55	298.50	738.93	89.55	900.00	994.00	0.00	729.70
*	449.280	735.23	188.06	737.24	78.99	900.00	994.00	0.00	729.70
*	449.300	738.59	518.05	740.03	90.84	900.00	994.00	0.00	729.70
*	449.300	738.59	518.05	740.03	90.84	900.00	994.00	0.00	729.70
*	449.300	739.51	635.25	741.20	91.16	900.00	994.00	0.00	729.70
*	449.300	738.08	458.62	739.40	90.66	900.00	994.00	0.00	729.70
	449.300	736.67	309.78	737.70	90.06	900.00	994.00	0.00	729.70
	449.320	740.33	1756.31	740.48	154.00	1050.00	1204.00	0.00	729.90
	449.320	740.33	1756.31	740.48	154.00	1050.00	1204.00	0.00	729.90
(AO)	449.320	741.53	2156.84	741.70	154.00	1050.00	1204.00	0.00	729.90
	449.320	739.68	1551.76	739.81	154.00	1050.00	1204.00	0.00	729.90
	449.320	737.93	1052.15	738.03	154.00	1050.00	1204.00	0.00	729.90
	449.370	740.37	1778.98	740.51	270.00	990.00	1260.00	0.00	730.00
	449.370	740.37	1778.98	740.51	270.00	990.00	1260.00	0.00	730.00
(AO)	449.370	741.59	2237.16	741.74	270.00	990.00	1260.00	0.00	730.00
	449.370	739.72	1552.32	739.84	270.00	990.00	1260.00	0.00	730.00
	449.370	737.96	1027.47	738.06	187.90	990.00	1260.00	0.00	730.00

SECNO	CWSEL	...01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
449.900	740.64	1901.71	740.76	766.05	60.00	850.00	0.00	730.40
449.900	740.64	1901.71	740.76	766.05	60.00	850.00	0.00	730.40
A1 449.900	741.85	2580.26	741.96	768.03	60.00	850.00	0.00	730.40
449.900	739.99	1587.58	740.11	764.98	60.00	850.00	0.00	730.40
449.900	738.26	968.45	738.38	274.05	60.00	850.00	0.00	730.40
450.810	741.14	1462.45	741.27	506.59	.00	550.00	0.00	730.80
A1.5 450.810	741.14	1462.45	741.27	506.59	.00	550.00	0.00	730.80
450.810	742.27	1966.42	742.39	510.40	.00	550.00	0.00	730.80
450.810	740.54	1232.88	740.68	504.58	.00	550.00	0.00	730.80
450.810	738.95	720.06	739.13	499.21	.00	550.00	0.00	730.80
451.390	741.49	1062.22	741.90	442.47	897.60	1170.10	0.00	731.10
A2 451.390	741.49	1062.22	741.90	442.47	897.60	1170.10	0.00	731.10
451.390	742.56	1399.09	742.94	458.64	897.60	1170.10	0.00	731.10
451.390	740.94	911.71	741.35	437.52	897.60	1170.10	0.00	731.10
451.390	739.52	617.03	739.88	241.39	897.60	1170.10	0.00	731.10
452.330	742.95	975.04	743.49	128.36	560.00	690.00	0.00	733.20
A3 452.330	742.95	975.04	743.49	128.36	560.00	690.00	0.00	733.20
452.330	743.87	1150.89	744.53	130.00	560.00	690.00	0.00	733.20
452.330	742.45	883.96	742.92	126.42	560.00	690.00	0.00	733.20
452.330	741.00	644.00	741.33	120.86	560.00	690.00	0.00	733.20
452.370	743.13	1077.77	743.55	129.04	560.00	690.00	0.00	733.20
452.370	743.13	1077.77	743.55	129.04	560.00	690.00	0.00	733.20
452.370	744.10	1289.43	744.61	130.00	560.00	690.00	0.00	733.20
452.370	742.60	969.91	742.93	127.00	560.00	690.00	0.00	733.20
452.370	741.09	691.71	741.37	121.21	560.00	690.00	0.00	733.20
Rusell Rd. 452.380	743.16	639.53	743.82	94.40	0.00	0.00	0.00	733.40
452.380	743.16	639.53	743.82	94.40	0.00	0.00	0.00	733.40
452.380	744.13	754.45	744.92	98.68	0.00	0.00	0.00	733.40
452.380	742.63	580.80	743.22	92.10	0.00	0.00	0.00	733.40
452.380	741.13	422.56	741.55	85.45	0.00	0.00	0.00	733.40
452.420	743.36	662.26	743.98	95.27	0.00	0.00	0.00	733.40
452.420	743.36	662.26	743.98	95.27	0.00	0.00	0.00	733.40
452.420	744.35	781.84	745.10	99.67	0.00	0.00	0.00	733.40
452.420	742.81	599.74	743.37	92.85	0.00	0.00	0.00	733.40
452.420	741.28	436.41	741.68	86.07	0.00	0.00	0.00	733.40
452.440	743.85	1440.19	744.14	145.00	230.00	375.00	0.00	731.50
452.440	743.85	1440.19	744.14	145.00	230.00	375.00	0.00	731.50
452.440	744.92	1700.35	745.28	145.00	230.00	375.00	0.00	731.50
(A) 452.440	743.26	1304.87	743.51	145.00	230.00	375.00	0.00	731.50
452.440	741.61	958.05	741.79	145.00	230.00	375.00	0.00	731.50
452.470	743.93	1523.76	744.18	200.00	200.00	400.00	0.00	731.50
452.470	743.93	1523.76	744.18	200.00	200.00	400.00	743.93	731.50
A 452.470	745.04	1825.19	745.33	200.00	200.00	400.00	0.00	731.50
452.470	743.32	1371.53	743.55	200.00	200.00	400.00	0.00	731.50
452.470	741.64	981.52	741.81	197.24	200.00	400.00	0.00	731.50

	SECNO	CWSEL	CWLK	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	453.470	744.81	952.42	745.29	757.39	0.00	0.00	0.00	734.80
	453.470	744.81	923.76	745.33	603.40	367.38	970.78	744.81	734.80
B	453.470	745.93	1355.24	746.29	766.38	0.00	0.00	0.00	734.80
	453.470	744.19	782.63	744.73	649.22	0.00	0.00	0.00	734.80
	453.470	742.78	498.85	742.97	93.89	0.00	0.00	0.00	734.80
	454.550	746.15	1475.79	746.30	770.22	0.00	0.00	0.00	735.20
	454.550	746.23	1464.58	746.38	698.89	44.52	743.41	746.15	735.20
	454.550	746.95	1896.40	747.08	783.91	0.00	0.00	0.00	735.20
BA	454.550	745.71	1267.96	745.87	762.68	0.00	0.00	0.00	735.20
	454.550	744.30	726.31	744.53	738.53	0.00	0.00	0.00	735.20
	455.590	746.92	1602.95	747.09	651.21	0.00	0.00	0.00	735.60
	455.590	747.00	1598.31	747.18	394.04	430.70	824.74	746.92	735.60
	455.590	747.69	1976.82	747.86	774.90	0.00	0.00	0.00	735.60
BB	455.590	746.79	1438.48	746.65	684.28	0.00	0.00	0.00	735.60
	455.590	745.24	1026.10	745.37	463.81	0.00	0.00	0.00	735.60
	455.630	746.94	1633.28	747.11	617.78	0.00	0.00	0.00	735.60
	455.630	747.05	1550.83	747.20	347.81	457.19	805.00	746.94	735.60
(BB)	455.630	747.72	2037.73	747.88	737.67	0.00	0.00	0.00	735.60
	455.630	746.51	1455.95	746.67	570.72	0.00	0.00	0.00	735.60
	455.630	745.19	808.84	745.46	78.00	0.00	0.00	0.00	735.60
	455.640	746.67	763.99	747.40	346.03	0.00	0.00	0.00	735.30
	455.640	746.76	782.53	747.51	109.21	825.02	1064.00	746.67	735.30
	455.640	747.39	897.59	748.23	447.86	0.00	0.00	0.00	735.30
	455.640	746.28	706.19	746.92	251.22	0.00	0.00	0.00	735.30
	455.640	745.14	568.18	745.53	62.02	0.00	0.00	0.00	735.30
	455.680	746.72	772.28	747.44	358.64	0.00	0.00	0.00	735.30
	455.680	746.81	769.42	747.55	123.15	813.13	1064.00	746.72	735.30
	455.680	747.46	912.79	748.28	451.81	0.00	0.00	0.00	735.30
	455.680	746.32	712.15	746.96	261.59	0.00	0.00	0.00	735.30
	455.680	745.17	570.09	745.56	62.03	0.00	0.00	0.00	735.30
	455.670	747.48	1282.84	747.63	408.41	0.00	0.00	0.00	735.80
	455.670	747.59	1280.99	747.75	293.14	699.86	993.00	747.48	735.80
(BC)	455.670	748.33	1554.26	748.49	417.95	0.00	0.00	0.00	735.80
	455.670	746.97	1135.88	747.12	401.57	0.00	0.00	0.00	735.80
	455.670	745.47	719.28	745.64	103.00	0.00	0.00	0.00	735.80
	455.710	747.46	1289.31	747.74	434.74	0.00	0.00	0.00	735.80
	455.710	747.57	1293.41	747.86	314.64	677.85	992.50	747.46	735.80
BC	455.710	748.31	1568.18	748.61	447.28	0.00	0.00	0.00	735.80
	455.710	746.95	1140.42	747.23	425.07	0.00	0.00	0.00	735.80
	455.710	745.49	790.39	745.73	335.36	0.00	0.00	0.00	735.80
	456.620	748.34	1620.65	748.48	765.30	0.00	0.00	0.00	736.10
	456.620	748.44	1655.92	748.58	725.00	35.00	760.00	748.34	736.10
C	456.620	749.20	2089.23	749.33	772.02	0.00	0.00	0.00	736.10
	456.620	747.84	1377.73	747.98	760.61	0.00	0.00	0.00	736.10
	456.620	746.36	803.37	746.58	727.08	0.00	0.00	0.00	736.10

14112 G.B.

SECNO	CWSEL	·01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
458·020	749·31	1549·09	749·44	1276·05	·00	242·20	0·00	738·60
458·070	749·38	1577·57	749·51	1277·96	·00	242·20	749·31	738·60
458·070	750·13	1899·35	750·27	1298·41	·00	242·20	0·00	738·60
458·070	748·86	1369·03	748·99	1257·33	·00	242·20	0·00	738·60
458·070	747·60	932·68	747·72	1006·09	·00	242·20	0·00	738·60
458·530	749·77	914·11	750·41	109·86	0·00	0·00	0·00	738·80
458·530	749·83	922·96	750·45	110·13	0·00	0·00	749·77	738·80
458·530	750·60	1053·75	751·41	114·02	0·00	0·00	0·00	738·80
458·530	749·31	840·44	749·86	107·53	0·00	0·00	0·00	738·80
458·530	748·01	651·03	748·37	101·06	0·00	0·00	0·00	738·80
459·030	751·05	1793·70	751·17	610·00	370·00	980·00	0·00	739·10
459·030	751·09	1810·45	751·20	610·00	370·00	980·00	751·05	739·10
459·030	752·16	2330·90	752·27	610·00	370·00	980·00	0·00	739·10
459·030	750·45	1528·38	750·57	610·00	370·00	980·00	0·00	739·10
459·030	748·81	925·77	748·96	605·21	370·00	980·00	0·00	739·10
459·850	751·49	853·34	752·10	140·23	260·00	445·00	0·00	739·00
459·850	751·51	857·26	752·12	140·33	260·00	445·00	751·49	739·00
459·850	752·47	1008·55	753·21	142·25	260·00	445·00	0·00	739·00
459·850	750·95	773·85	751·50	139·21	260·00	445·00	0·00	739·00
459·850	749·50	579·15	749·88	130·14	260·00	445·00	0·00	739·00
459·890	751·74	1091·88	752·19	135·79	300·00	440·00	0·00	739·00
459·890	751·77	1096·59	752·21	135·84	300·00	440·00	751·74	739·00
459·890	752·79	1305·56	753·31	138·96	300·00	440·00	0·00	739·00
459·890	751·17	982·92	751·58	134·65	300·00	440·00	0·00	739·00
459·890	749·64	718·60	749·94	131·34	300·00	440·00	0·00	739·00
459·900	752·00	2194·99	752·27	135·31	0·00	0·00	0·00	740·30
459·900	752·02	2203·14	752·29	135·33	0·00	0·00	752·00	740·30
459·900	753·17	1568·72	753·44	139·01	0·00	0·00	0·00	740·30
459·900	751·41	1980·81	751·65	134·96	0·00	0·00	0·00	740·30
459·900	749·82	1444·91	750·00	134·02	0·00	0·00	0·00	740·30
459·950	752·02	2202·76	752·29	135·33	0·00	0·00	0·00	740·30
459·950	752·04	2210·86	752·31	135·34	0·00	0·00	752·02	740·30
459·950	753·23	1587·56	753·50	139·05	0·00	0·00	0·00	740·30
459·950	751·43	1987·93	751·67	134·97	0·00	0·00	0·00	740·30
459·950	749·84	1450·29	750·01	134·03	0·00	0·00	0·00	740·30
459·960	751·67	869·07	752·54	186·46	0·00	0·00	0·00	739·70
459·960	751·70	873·69	752·56	187·51	0·00	0·00	751·67	739·70
459·960	752·92	1130·68	753·76	267·67	0·00	0·00	0·00	739·70
459·960	751·10	773·87	751·91	160·28	0·00	0·00	0·00	739·70
459·960	749·61	569·09	750·19	108·89	0·00	0·00	0·00	739·70
459·980	752·01	918·67	752·61	121·82	790·00	970·00	0·00	739·70
459·980	752·04	922·06	752·63	121·90	790·00	970·00	752·01	739·70
459·980	753·14	1118·37	753·81	150·87	790·00	970·00	0·00	739·70
459·980	751·43	823·78	751·98	119·40	790·00	970·00	0·00	739·70
459·980	749·83	589·16	750·24	110·46	790·00	970·00	0·00	739·70

14112 G.B.

/SECNO	CWSEL	.01K	EG	TOPWID	SIENCL	STENCR	WSELK	ELMIN
460.980	752.94	2836.22	752.97	706.96	0.00	0.00	0.00	739.90
460.980	752.96	2800.69	752.99	571.02	205.29	776.31	752.94	739.90
460.980	752.15	3607.12	754.18	722.36	0.00	0.00	0.00	739.90
460.980	752.31	2465.27	752.33	698.81	0.00	0.00	0.00	739.90
460.980	750.55	1596.72	750.56	622.05	0.00	0.00	0.00	739.90
461.800	753.04	1766.50	753.08	793.95	0.00	0.00	0.00	740.00
461.800	753.06	1730.13	753.10	747.46	86.21	833.67	753.04	740.00
461.800	754.25	2418.86	754.28	802.04	0.00	0.00	0.00	740.00
461.800	752.40	1461.64	752.44	789.56	0.00	0.00	0.00	740.00
461.800	750.63	778.85	750.68	777.34	0.00	0.00	0.00	740.00
462.520	753.19	1120.93	753.33	282.16	0.00	0.00	0.00	741.40
462.520	753.22	1104.44	753.36	223.14	153.43	376.58	753.19	741.40
462.520	754.37	1430.23	754.52	301.02	0.00	0.00	0.00	741.40
462.520	752.56	975.00	752.69	270.80	0.00	0.00	0.00	741.40
462.520	750.85	631.21	750.95	239.56	0.00	0.00	0.00	741.40
463.280	753.65	967.21	753.79	575.90	306.20	881.30	0.00	742.80
463.280	753.70	980.95	753.83	576.54	306.20	881.30	753.65	742.80
463.280	754.84	1372.07	754.95	592.67	306.20	881.30	0.00	742.80
463.280	753.03	788.16	753.18	567.07	306.20	881.30	0.00	742.80
463.280	751.29	424.25	751.48	369.90	306.20	881.30	0.00	742.80
464.220	754.50	831.32	754.67	473.24	0.00	0.00	0.00	745.00
464.220	754.53	817.96	754.71	253.99	812.65	1066.64	754.50	745.00
464.220	755.54	1121.36	755.70	551.86	0.00	0.00	0.00	745.00
464.220	753.96	714.04	754.13	418.44	0.00	0.00	0.00	745.00
464.220	752.46	458.52	752.62	264.87	0.00	0.00	0.00	745.00
465.530	755.34	629.34	755.55	828.03	0.00	0.00	0.00	747.00
465.530	755.40	619.20	755.63	681.69	536.23	1217.92	755.34	747.00
465.530	756.25	953.38	756.38	909.13	0.00	0.00	0.00	747.00
465.530	754.88	500.68	755.14	778.85	0.00	0.00	0.00	747.00
465.530	753.51	261.06	753.94	353.19	0.00	0.00	0.00	747.00
466.500	756.49	649.09	756.79	491.54	338.90	1011.10	0.00	747.60
466.500	756.56	664.60	756.85	494.07	338.90	1011.10	756.49	747.60
466.500	757.13	796.14	757.47	513.40	338.90	1011.10	0.00	747.60
466.500	756.18	589.15	756.45	481.88	338.90	1011.10	0.00	747.60
466.500	755.17	441.08	755.35	147.47	338.90	1011.10	0.00	747.60
467.440	757.98	538.47	758.30	229.12	213.20	547.10	0.00	750.60
467.440	758.00	542.26	758.32	229.28	213.20	547.10	757.98	750.60
467.440	758.72	675.85	759.08	234.29	213.20	547.10	0.00	750.60
467.440	757.59	475.61	757.89	226.49	213.20	547.10	0.00	750.60
467.440	756.36	303.98	756.60	163.76	213.20	547.10	0.00	750.60
* 468.570	764.27	8627.53	764.28	288.81	0.00	0.00	0.00	751.30
* 468.570	764.27	8790.86	764.28	263.00	12.00	275.00	764.27	751.30
* 468.570	764.93	9594.50	764.94	290.79	0.00	0.00	0.00	751.30
* 468.570	763.78	8275.67	763.78	287.34	0.00	0.00	0.00	751.30
* 468.570	762.67	7087.25	762.67	263.00	0.00	0.00	0.00	751.30

14112 G.B.

	SECNO	CWSEL	•01K	EG	TOPWID	STENCL	STENCR	WSELK	ELMIN
	469•370	763•99	497•25	764•44	230•92	0•00	0•00	0•00	757•00
	469•370	763•99	490•02	764•44	70•00	631•90	701•90	763•99	757•00
M	469•370	764•64	627•95	765•12	407•49	0•00	0•00	0•00	757•00
	469•370	763•51	425•89	763•94	75•63	0•00	0•00	0•00	757•00
	469•370	762•46	288•58	762•79	70•67	0•00	0•00	0•00	757•00
	470•250	765•25	808•25	765•35	775•83	0•00	0•00	0•00	757•90
	470•250	765•29	780•95	765•40	587•27	400•20	987•47	765•25	757•90
N	470•250	765•86	1038•00	765•96	883•12	0•00	0•00	0•00	757•90
	470•250	764•82	679•80	764•93	534•87	0•00	0•00	0•00	757•90
	470•250	763•77	451•10	763•87	271•91	0•00	0•00	0•00	757•90
	471•600	766•45	342•22	767•09	206•01	0•00	0•00	0•00	757•50
	471•600	766•55	346•10	767•24	139•16	396•58	535•75	766•45	757•50
NW	471•600	766•86	393•93	767•62	219•36	0•00	0•00	0•00	757•50
	471•600	766•19	313•62	766•78	197•93	0•00	0•00	0•00	757•50
	471•600	765•37	234•63	765•84	171•70	0•00	0•00	0•00	757•50
	472•090	767•36	1481•30	767•40	256•66	0•00	0•00	0•00	756•90
	472•090	767•50	1484•74	767•55	155•00	513•80	668•80	767•36	756•90
O	472•090	767•92	1690•11	767•96	261•40	0•00	0•00	0•00	756•90
	472•090	767•03	1366•51	767•07	253•91	0•00	0•00	0•00	756•90
	472•090	766•05	1056•53	766•07	223•04	0•00	0•00	0•00	756•90
*	474•750	780•66	7851•23	780•66	799•89	0•00	0•00	0•00	773•00
*	474•750	780•66	7830•99	780•66	792•00	417•10	1209•10	780•66	773•00
* Q	474•750	780•74	8025•67	780•74	800•34	0•00	0•00	0•00	773•00
*	474•750	780•62	7764•66	780•62	799•66	0•00	0•00	0•00	773•00
*	474•750	780•52	7549•83	780•52	799•08	0•00	0•00	0•00	773•00
	477•650	780•69	4504•44	780•70	1254•58	0•00	0•00	0•00	772•50
	477•650	780•69	4328•72	780•70	847•00	858•90	1705•90	780•69	772•50
S	477•650	780•78	4690•03	780•79	1339•47	0•00	0•00	0•00	772•50
	477•650	780•64	4414•63	780•65	1220•80	0•00	0•00	0•00	772•50
	477•650	780•53	4200•86	780•54	1175•75	0•00	0•00	0•00	772•50

SUMMARY OF ERRORS

CAUTION SECNO= 449•280 PROFILE= 1 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 449•280 PROFILE= 1 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 449•280 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•280 PROFILE= 2 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 449•280 PROFILE= 2 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 449•280 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•280 PROFILE= 3 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 449•280 PROFILE= 3 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 449•280 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•280 PROFILE= 4 CRITICAL DEPTH ASSUMED
CAUTION SECNO= 449•280 PROFILE= 4 PROBABLE MINIMUM SPECIFIC ENERGY
CAUTION SECNO= 449•280 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•280 PROFILE= 5 CRITICAL DEPTH ASSUMED

CAUTION SECNO= 449•300 PROFILE= 1 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•300 PROFILE= 2 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•300 PROFILE= 3 20 TRIALS ATTEMPTED TO BALANCE WSEL
CAUTION SECNO= 449•300 PROFILE= 4 20 TRIALS ATTEMPTED TO BALANCE WSEL

NOTE SECNO= 468•570 PROFILE= 1 WSEL BASED ON X5 CARD
NOTE SECNO= 468•570 PROFILE= 2 WSEL BASED ON X5 CARD